PSYCHOLOGY IN RUSSIA: STATE OF THE ART

Volume 12 Issue 4 2019

Educational psychology from a contemporary perspective

Russian Psychological Society

Lomonosov Moscow State University

Special issue
EDUCATIONAL PSYCHOLOGY
FROM A CONTEMPORARY PERSPECTIVE

Educational Psychology in Europe

Elinor Schad[a], Christopher Arnold[b]

[a] *Department of Psychology, Lund University, Sweden*

[b] *Tavistock and Portman NHS Trust, London, UK*

Today, Russia is a member of the European Federation of Psychological Associations (EFPA) and in the summer 2019 the Russian Psychological Society was the host to the 16th European Congress of Psychology (ECP) in Moscow, gathering psychologists from all over the world. In connection with the 2019 ECP, this special edition has been compiled by members of EFPA's Standing Committee on Psychology in Education (SCPiE) and represents a collection of papers highlighting the range of work that educational psychologists undertake with schools and youth. This volume is also the next step for the EFPA Standing Committee for Psychologists in Education to strengthen and promote educational psychology in Europe, in order to reach our end goal: efficient and well-functioning institutions of learning.

Key words:
educational psychology, European Federation of Psychological Associations (EfPA), 16th European Congress of Psychology (ECP), EFPA's Standing Committee on Psychology in Education (SCPiE)

Introduction

To be invited to edit a Russian journal's special edition devoted to psychology in schools is indeed a great honour, and we are grateful for this opportunity to showcase state of the art of educational psychology in different European locations in this publication.

The study of human learning has been at the center of psychological research for over a century, and Russian psychologists have earned envied reputations in this field. Names such as Pavlov, Vygotsky, and Luria are known across the whole world and stand alongside other giants in this field such as Piaget, Binet, Kohler, Milgram, and Bandura.

http://psychologyinrussia.com

Educational psychology also has a long and proud history stretching over 100 years, stemming from the fact that around the turn of the last century it became compulsory for most children in the industrialized world to attend school. The view of education and children's prerequisites for learning changed dramatically during this period, as people realized that society had a great responsibility for children's education and development, and that therefore children should not be exploited as cheap labour, but viewed as an investment for the future of society. During this time, questions also arose about children's prerequisites for learning. Alfred Binet, for example, not only designed the first aptitude test, but also had an immense interest in cognitive development, group conformity, individual differences, etc. (Siegler, 1992). In Sweden, as in many other countries, psychologists were involved in school placement and aptitude testing. The first person to have a job described as an applied psychologist in the UK was an educational psychologist (Arnold and Hardy, 2013). Much has happened since then, and today we face other challenges and problems on the local, national and international arena.

Today, Russia is a member of the *European Federation of Psychological Associations* (EFPA) and in the summer 2019 the Russian Psychological Society was the host to the 16th European Congress of Psychology (ECP) in Moscow, gathering psychologists from all over the world. This special edition has been compiled by members of EFPA's Standing Committee of Psychologists in Education (SCPiE) and represents a collection of papers highlighting the range of work that psychologists undertake with schools and young people. This volume is also the next step for the EFPA Standing Committee for Psychologists in Education to strengthen and promote educational psychology in Europe. Previous work includes for example, the publication *Inclusive Education Practice in Europe* (Arnold & Horan, 2017) published by University College London Press in 2017.

Themes in this issue are also themes, which unite us. The importance of schools in the promotion of positive mental health in young people, the focus on vulnerable young people, and the recognition of the different educational needs of different groups are indeed pan-national.

What is unique about this edition is the nature of the contributors. They are all hands-on practitioners applying psychology in different areas, yet able to communicate their findings and applications comprehensively, to promote positive outcomes for different groups.

Articles in this Issue

This special issue of *Psychology in Russia: State of the Art* focuses on contemporary educational psychology from a European perspective. Topics covered display the broadness of the field and reflect educational psychology from both a researcher's and a practitioner's perspective.

In the first article, Schwarz and Gawrilow (2019) describe an intervention study in which they examined the potential benefits a program called WOOP, on improving self-regulation among school children on a day-to-day basis. Although larger studies are needed, the authors show that self-regulatory interventions can help children formulate and reach their goals, and in the process improve their self-assessed self-regulation.

Work-related health and working conditions among teachers in Sweden are described by Schad and Johnsson (2019). With a comprehensive cross-sectional survey, the authors report on teachers' problems with recovery from work, insufficient separation between work and spare time, sleeping difficulties, and symptoms of depression. The results are indicative of the difficulties society faces when one of the largest groups of employees fares ill.

The experience and behaviour of children as well as their emotional development are highly dependent on how they perceive their support by their teachers. In a large cross-sectional survey, Lazarova, Hlado, and Hlouskova (2019) explore how last year, students at public vocational schools in the Czech Republic perceived the support of their teachers. Not indicating any gender differences, the results show that the students overall feel supported. The authors also show perception of teacher support to be predicted by study results, field of study, as well as satisfaction with study results. The results of this work, indicating a correlation between teacher support and career adaptability, could also have bearing on future life satisfaction among pupils.

Hatzichristou, Lianos, and Lampropoulou (2019) delineate the importance of new delivery models of school psychological services, putting evidence-based prevention and intervention programs for supporting school communities at center stage. The authors elegantly link theory, training, and research on delivery models, with interventions in the Greek educational system. They place a special emphasis on the responsibility universities have for the provision of preventive health services for youths.

A comparative study examining the state of evidence-based practice among school psychologists in three European countries is offered by Juriševič, Lazarová, and Gajdošová (2019). The authors discuss obstacles preventing the advancement of school psychology, from educational quality to employment conditions, highlighting the importance of more cross-cultural research.

Juriševič and Žerak (2019) examine the attitudes of students, parents, and teachers towards gifted children's need for education adjusted to their specific needs. Combining qualitative and quantitative methods, they authors point to the importance of comprehensive approaches to education for this group of students often misunderstood and underrepresented.

Bahia and Nogueira (2019) report on a large-scale initiative by the Southern Regional Delegation of the Order of Portuguese Psychologists, in which they reach out to the public with an exhibition showcasing "emotions and emotional regulation". More than 9,000 persons took part in this interactive and mobile exhibition. Based on theories of learning and development, the authors discuss the psycho-educational importance of such opportunities for citizens and society.

In this day and age, with the Internet and social media always in close proximity, the approach of Mironova (2019) is especially interesting. In her study with Russian secondary school children, she delves into the psycho-didactic foundations of developing teenagers' creative interaction with lyric poetry. Compared to a control group, the participants in the intervention group showed increased creative interaction with the reading and workbook material, showing that interacting with poetry can be a valuable experience for todays' teenagers.

In their article on reading performance in adults with intellectual and developmental disability, León and León-López (2019) point to the importance of giving students enough time-on-task for the fulfillment of their potential. In this large study, they found that a population of 450 adults with Intellectual and Developmental Disability, compared with a population of university students (N = 200), were found to achieve higher than expected results, sometimes surpassing the comparison group, if they were given enough time to complete the tasks.

Children with haemophilia face both prejudice and overprotection, as teachers often hesitate to involve them in sports at school. In their study, Dinet, Bauchet, and Hoareau (2019) explore ways to influence the mental representations of children with haemophilia, their parents, and their teachers, utilizing a participatory game design process for an innovative digital tool. This might in the long run improve help self-esteem, learning, and inclusion in schools among children with haemophilia.

Henriksson, Küller Lindén, and Schad (2019) assessed the well-being and stress of a population of senior high school students and found their reporting of these factors to be strongly linked with their reporting of their learning situation, their relation to family and friends, and their possibility to recuperate after school. Henriksson and her co-authors' results point to the importance of teachers' interactions with pupils, building trusting relationships, and a supportive school environment.

Petrulytė and Guogienė (2019) in their article aim to investigate social-emotional health and self-esteem of adolescents in a large Lithuanian sample, by comparing adolescent social-emotional health and self-esteem among 12–15 year olds and 16–19 year olds, as well as exploring possible gender differences. School psychologists in Lithuania will be able to use this survey to monitor adolescent psychological health. The work therefore constitutes an important step in the development of school psychological services in Lithuania.

In their article, Bunn, Turner, and Macro (2019) describe an evaluation of a commercially available toolkit aimed at supporting pupils' social, emotional, and mental health. Using a mixed methodology, they assess the functionality of the training material as used by a team comprised of educational psychologists, clinical psychologists, and specialist teachers. Their findings suggest evidence of improved skills and knowledge in the pupils' social, emotional, and mental health.

Conclusion

In this day and age, knowing how students and teachers fare in school is vitally important to ensure our future. Only by understanding the challenges that our students and teachers face can we start to promote and develop our educational practices for the benefit of future generations.

We are proud to present this body of work and we hope that you find our colleagues' contributions inspirational.

References

Arnold, C., & Hardy, J. (Eds.). (2013). *British educational psychology: The first hundred years* (2nd edition). Leicester: BPS.

Arnold, C., & Horan, J. (Eds.). (2017). *Inclusive educational practice in Europe: Psychological perspectives.* London: UCL Press.

Bahia, S., Nogueira, J. (2019). The Importance of Communicating Psychological Concepts in Educational Contexts: a Portuguese Exhibition. *Psychology in Russia: State of the Art, 12*(4), 118–134. https://doi.org/10.11621/pir.2019.0407

Bunn, H., Turner, G., Macro, E. (2019). The Wellbeing Toolkit Training Programme: A Useful Resource for Educational Psychology Services? *Psychology in Russia: State of the Art, 12*(4), 210–225. https://doi.org/10.11621/pir.2019.0413

Dinet, J., Bauchet, C., Hoareau, L. (2019). Collaborative Game Design with Children with Hemophilia as a Tool for Influencing Opinions about Physical Activity at School. *Psychology in Russia: State of the Art, 12*(4), 159–171. https://doi.org/10.11621/pir.2019.0410

Hatzichristou, C., Lianos, P., Lampropoulou, A. (2019). Supporting Vulnerable Groups of Students in Educational Settings: University Initiatives and Partnerships. *Psychology in Russia: State of the Art, 12*(4), 65–78. https://doi.org/10.11621/pir.2019.0404

Henriksson, f., Küller Lindén, E.., Schad, E. (2019). Well-being and Stress Among Upper Secondary School Pupils in Sweden. *Psychology in Russia: State of the Art, 12*(4), 172–195. https://doi.org/10.11621/pir.2019.0411

Jurišević, M., Lazarová, B., Gajdošová, E. (2019). Evidence–Based Practice for Psychologists in Education: A Comparative Study from the Czech Republic, Slovakia, and Slovenia. *Psychology in Russia: State of the Art, 12*(4), 79–100. https://doi.org/10.11621/pir.2019.0405

Jurišević, M., Žerak, U. (2019). Attitudes towards Gifted Students and Their Education in the Slovenian Context. *Psychology in Russia: State of the Art, 12*(4), 101–117. https://doi.org/10.11621/pir.2019.0406

Lazarová, B., Hlaďo, P., Hloušková, L. (2019). Perception of Teacher Support by Students in Vocational Education and Its Associations with Career Adaptability and Other Variables. *Psychology in Russia: State of the Art, 12*(4), 47–64. https://doi.org/10.11621/ pir.2019.0403

Leon, J.A., León-López, A. (2019). Reading Performance in Adults with Intellectual and Developmental Disability (IDD) When They Read Different Kinds of Texts. *Psychology in Russia: State of the Art, 12*(4), 148–158. https://doi.org/10.11621/pir.2019.0409

Mironova, K. (2019). The Principle of Open Individuality as a Basis for Teenagers' Creative Interaction with Lyric Poems. *Psychology in Russia: State of the Art, 12*(4), 130–142. https://doi.org/10.11621/pir.2019.0408

Petrulytė, A., Guogienė, V., Rimienė, V. (2019). Adolescent Social Emo- tional Health, Empathy, and Self-esteem: Preliminary Validation of the Lithuanian Version of the SEHS-S Questionnaire. *Psychology in Russia: State of the Art, 12*(4), 196–209. https://doi.org/10.11621/pir.2019.0412

Schad, E., Johnsson, P. (2019). Well-Being and Working Conditions of Teachers in Sweden. *Psychology in Russia: State of the Art, 12*(4), 23–46. https://doi.org/10.11621/ pir.2019.0402

Schwarz, U., Gawrilow, C. (2019). Measuring and Compensating for Deficits of Self-Regulation in School Children via Ambulatory Assessment. *Psychology in Russia: State of the Art, 12*(4), 8–22. https://doi.org/10.11621/pir.2019.0401

Siegler, R.S. (1992). The other Alfred Binet. *Developmental Dsychology*, *28*(2), 179. https://doi.org/10.1037/0012-1649.28.2.179

Measuring and Compensating for Deficits of Self-Regulation in School Children via Ambulatory Assessment

Ulrike Schwarz*, Caterina Gawrilow

Eberhard Karls University, Tuebingen, Germany

* Corresponding author. E-mail: ulrike.schwarz@uni-tuebingen.de

Background. Children with deficits in self-regulation often perform worse in school and are less accepted by peers. However, self-regulation can be trained and developed by making detailed plans to achieve specific goals. One such strategy is WOOP (it includes thinking about *w*ishes, *o*utcomes, and *o*bstacles, and creating a *p*lan to achieve a goal), known in the literature as MCII, or if-then plans.

Objective. Noting the encouraging results of the WOOP method, we aimed to evaluate whether WOOP has the potential to ameliorate self-regulation deficits on a day-to-day-level .

Design. In total, 49 school-aged children ($M = 11.2$ years, $SD = 8.4$ months) were randomly assigned to one of two groups: 1) Condition 1, which underwent a WOOP intervention; and 2) Condition 2, which performed the intervention without contrasting obstacles and planning. The self-regulation abilities were assessed each day over an 18-day survey period by both the children themselves and their parents. ADHD symptom-severity was assessed as a proxy for self-regulation; specifically, we used six items from the Conners 3 scale and the German adaptation of the Brief Self-Control Scale.

Results. The children in both conditions demonstrated increased self-regulation, according to their self-reports at the beginning and end of the survey period. The parents reported different progressions of the two conditions over the survey period, but these did not differ significantly. In addition, both conditions are helpful to improve children's self-regulation in daily life.

Conclusion. Further research on implementing practicable interventions in schoolchildren's daily life is highly recommended.

Keywords:
self-regulation; Mental Contrasting with Implementation Intentions (MCII); WOOP; ambulatory assessment

Introduction

Self-regulation is an important skill that has cognitive, behavioral, and emotional influence on a person's wellbeing and achievement (Kanfer, Reinecker, & Schmelzer, 2006). It helps individuals work toward long-term goals, regulate emotions according to the situation, plan the implementation and processing of tasks, and control impulses (Guderjahn, Gold, Stadler, & Gawrilow, 2013; Hartig & Kanfer, 1973; Sitzmann & Ely, 2011). Self-regulation is particularly necessary in the learning of competencies and the acquisition of knowledge, since self-regulation in learning is associated with increased participation and attention in the classroom (Zimmerman, 1990). Not surprisingly, there is a negative correlation between self-regulation deficits and academic success, as well as with social inclusion (Tangney, Baumeister, & Boone, 2004; Wirth, Reinelt, Gawrilow, & Rauch, 2015). Given the central role of self-regulation in a variety of life-outcomes, any intervention which increases someone's self-regulation would be valuable for society.

One of the core components of self-regulation is the ability to "help people deal with resistance and conflict, such as with obstacles and temptations standing in the way of attaining desired future outcomes" (James, 1890, p.5, according to Oettingen & Gollwitzer, 2015). One prominent instance of such self-regulation is the ability to forgo a small, immediate reward in order to obtain a larger, later reward. Mischel, Shoda, and Rodriguez (1989) studied children's self-regulation by first placing a marshmallow on the table in front of them. The children were then told that they could either eat the marshmallow immediately, or refrain from eating the marshmallow and, after an interval, receive a second marshmallow. Thus, the children had to deploy self-regulation in order to wait for the larger, later reward. Mischel, Shoda, and Rodriguez found that not all children were able to control themselves and wait for the greater reward. Interestingly, when these same children were tested again upon reaching adulthood, it was found that those who were able to exert self-regulation in childhood (*i.e.,* wait for two marshmallows) were more successful, satisfied, and socially integrated as adults than those who did not (Mischel, 2014). Together, these findings suggest that the degree of self-regulation developed as a child has far-reaching implications for life-outcomes.

Attention deficit/hyperactivity disorder (ADHD), which is characterized by inattention, hyperactivity, and impulsivity, is one clinically relevant example of a deficit of self-regulation maintained over the lifetime of most of those affected (American Psychiatric Association, 2013). Children with ADHD symptoms are more likely to forget their homework, tend to perform worse in the classroom, and are more likely to drop out of school than children without ADHD symptoms (Langberg et al., 2010; Wirth et al., 2015). A common observation about these children is that they lack self-regulation, and this, in turn, often leads to strained student-teacher relationships (Millenet, Hohmann, Poustka, Petermann, & Banaschewski, 2013; Willcutt et al., 2012). For example, a child with symptoms of ADHD interrupts others or walks around the classroom and talks, even though quiet work is ongoing. In summary, deficits in self-regulation are disadvantageous, since self-regulation is essential for the long-term pursuit of a desired outcome, and consequently for the achievement of one's goals (Churchill & Jessop, 2010; Tangney, Baumeister, & Boone, 2004).

Self-regulation assists the achievement of goals by helping to bridge the gap between intention and behavior (see "The Intention-behavior Gap" Sheeran & Webb, 2016). The phases for moving from intention to action, and thus closer to goal achievement and self-regulated action, are described in the action phase model (also known as the Rubicon model of action phases) (Gollwitzer, 1990; Gollwitzer, 2012; Heckhausen & Gollwitzer, 1987). The action phase model illustrates the objective and aspiration, the path to action, and the plans that support self-regulated action (Achtziger & Gollwitzer, 2010). Mental contrasting can help the individual more easily overcome the gap between wanting and doing.

Mental contrasting is a cognitive strategy investigated by Oettingen (2014); it is divided into two contrasting steps. In the first, the positive future associated with reaching the target is joyously anticipated, thus creating the expectation of success, and motivation to reach the target (Oettingen & Mayer, 2002). For example, a student might have the idea that he wants to be more attentive in order to get better grades so that his parents will be proud of him, he will feel more comfortable overall, or he will be rewarded with a family trip if he graduates with good grades. In the second step of mental contrasting, a person thinks about obstacles in the here and now that stand in the way of this positive future, so that there is a discrepancy between the actual and the desired state, and a need to overcome the obstacles (Oettingen, Mayer, Thorpe, Janetzke, & Lorenz, 2005). Out of this discrepancy arises the desire to change the current circumstances in order to come closer to the desired future (Oettingen, 2012). For example, this means that the student might realize that he is distracted by little things that happen outside his window. Now he could make a plan to act against this obstacle.

A plan helps to execute the action leading to the goal more consistently in the action phase, since the setting of the goal intention alone is not sufficient. In his research Gollwitzer (1999) is concerned with how these plans must be formulated in order to facilitate the achievement of objectives and the initiation of action. The most promising option seems to be to draw up an if-then plan, in addition to setting a goal. This takes the form of "IF situation X, THEN I show behavior Y" (Gollwitzer & Brandstätter, 1997). In the if-then plan, the situation in which a goal-oriented behavior is to be adopted is explicitly addressed, so that a person recognizes this situation quickly as soon as he or she is in it, and can immediately implement the corresponding action (Gollwitzer, Fujita, & Oettingen, 2004). It follows from this that a person does not have to search again for alternative actions — or for the energy to perform an action in the concrete situation — but can "stick to the plan" in a resource-conserving way (Schweiger Gallo & Gollwitzer, 2007). The more frequently a person does this, the sooner the if-then plan, which links a situation to an action, no longer needs to be conscious; it becomes a habit (Parks-Stamm, Gollwitzer, & Oettingen, 2007). For the previously mentioned inattentive student, this would mean that he would consciously follow the plan: "*If* I look distractedly out the window, *then* I think that learning is important and look at the teacher."

If-then plans have now been studied in a wide variety of applications and have been found to help people keep healthy diets and increased their physical activity (Achtziger, Gollwitzer, & Sheeran, 2008; Gollwitzer & Sheeran, 2006). Children with ADHD symptoms who show self-regulation deficits can use this strategy to act more appropriately and in a targeted manner (Gawrilow & Gollwitzer, 2008),

and improve their learning behavior (Gawrilow, Gollwitzer, & Oettingen, 2011; Guderjahn et al., 2013)

In combination with mental contrasting, if-then plans are researched as Mental Contrasting with Implementation Intentions (MCII), also called by the acronym WOOP[1] (Oettingen, 2014). WOOP combines the steps of both strategies by having the individual reflect on their *w*ishes, *o*utcomes, and *o*bstacles, and finally formulate an if-then *p*lan (Schweiger Gallo, Bieleke, Alonso, Gollwitzer, & Oettingen, 2018). Using WOOP, participants show more self-discipline (Duckworth, Grant, Loew, Oettingen, & Gollwitzer, 2011) and children with ADHD symptoms have more self-regulating abilities (Gawrilow, Morgenroth, Schultz, Oettingen, & Gollwitzer, 2013). Students improve their performance so that, compared to the control group, which was taught only positive thinking as a strategy on the way to achieving goals, 5th graders who practiced WOOP improved their report card grades, their class attendance, and their behavior (Duckworth, Kirby, Gollwitzer, & Oettingen, 2013).

In summary, there are indications that self-regulation deficits of children can be reduced by means of a WOOP intervention in the school context. For this reason, our study investigated whether WOOP has the potential to compensate for self-regulatory deficits associated with ADHD symptoms in everyday life. The two questions posed by the study were: 1) whether children who pursue their goals using WOOP (Condition 1) improve significantly more in their reported self-regulation from the first (pre) to the second (post) time of measurement than children in Condition 2, who only thought positively and did not mentally contrast (H 1); and 2) whether children who use WOOP (Condition 1) to pursue their goals show fewer fluctuations in their ADHD symptoms as reported daily by their parents than children in Condition 2 (H 2).

Methods

The data collection was carried out by means of an ambulatory assessment design with measurement bursts (Sliwinski, 2008). Ambulatory assessment includes the recording of variables using portable devices directly in the everyday life of the study participants (Fahrenberg, Myrtek, Pawlik, & Perrez, 2007).

Participants

All experimental procedures were considered and approved by the ethics committee of the German Society for Psychology and the Baden-Wuerttemberg Ministry of Culture. The participants (N = 49, 30 female) were children (mean age 11.2, SD ± 8.4 months) who, at the time of the study, were in 5th grade at seven schools in the German state of Baden-Wuerttemberg. Participants were recruited through a multi-step process, beginning with a nationwide call for volunteers via flyers and parent-teacher meetings. Participation in the experiment was incentivized by offering participating families a family excursion to an attraction of their choice (worth 40 euros) and writing materials. The assignment of the schools to the two conditions was randomized with the result that WOOP/ Condition 1 had 31 participants

---

[1]   which will be used below for this purpose. For further information see: *woopmylife.org*.

(M = 10.8 years, SD = 0.72, 18 girls), and Condition 2 had 18 participants (M = 11.2 years, SD = 0.37; 12 girls).

Materials

In order to explain to the children all the necessary steps for creating an if-then plan, posters of the dimension 841 x 1189 mm were used for both the WOOP/ Condition 1 (experimental) and Condition 2 (control group). On the posters, all the steps necessary for creating the plan were listed with graphic support, which represented the pathway to the if-then plan as a hilly bicycle route.

Measures

Paper questionnaires were used in both conditions for the children to assess their own self-regulation both before and after the survey period. The questionnaire contained five items from the German version of the Self-Control Scale (SCS-K-D; Bertrams & Dickhäuser, 2009) to measure self-regulation ability. The items were: "Sometimes I do things I regret later;" "I'm lazy;" "I'm good at pulling myself together;" "I'm good at resisting temptation;" and "I wish I had more self-discipline." The children were to indicate on a five-point-Likert scale to what extent these statements on self-regulation applied to them: "1 = completely inaccurate" to "5 = fits precisely." Inverted items of the scale were not reversed, but all the items that were not actually inverted were, so that consistently high values corresponded to a high degree of self-regulation. The total reliability was .47 (Cronbach's Alpha). The reliability of the individual items was between .28 and .52 (Cronbach's Alpha). A pilot study showed an increased ability to depict symptom fluctuations for the items used.

   In addition, one parent of each participating child rated six items on their child's ADHD symptoms daily, between 8 p.m. and midnight, during the 18-day measurement period. They used items from the Conners 3 scale (mean retest correlation at .79, from .75 - .83; Lidzba, Christiansen, & Drechsler, 2013), which were reformulated for a daily survey; *e.g.,* "*Today* my child had trouble organizing his business." (scale level "1 = not at all correct" to "6 = very accurate").

Procedure

The test procedure was identical for both conditions, except for the use of the respective materials. At the time of first contact at the school (intervention and pre-measurement), each investigator was assigned a group of a maximum of five children. The implementation leaders picked up the participating children in their classes and went with them to separate workrooms, which were provided by the school. The intervention took place there: as an introduction, the experimenter addressed the importance of having personal desires and goals, and of the children learning a strategy that helps them achieve their desires and goals. The information poster was then used to discuss the steps relevant to achieving their goals, and the children were asked at each step to think about how to take the step themselves. The children were then asked to work independently on the workbook they had been given out beforehand. The trainer was still available for answering compre-

hension questions, and the standardized explanations in the manual were used to answer comprehension questions on individual steps.

The children were then given smartphones, which recorded additional data, which were not part of the present study (*e.g.,* affect, media consumption), three times a day during the entire 18-day period, and reminded the children of their goals (*e.g.,* "Learn more Spanish vocabulary for the next test.") on the 9th and 18th day. Afterwards the children were again verbally asked to think about their goal in the next days. During the second contact time at the school (post-measurement), after the 18 days, the participating children were picked up by implementation leaders during class time, and accompanied to a separate classroom where they completed the paper-questionnaire again in small groups (one implementation teacher took a maximum of five children, with a total group size from 3 to 19, depending on the school).

Condition 1 — WOOP

On the poster of the experimental group, Step 1 was to formulate a goal relevant to what the child wanted to accomplish in school. The starting point comprised two questions: 1) "What is my wish for the school?" and 2) "Which goal do I want to reach in the next nine days?" Step 2 dealt with the desired state after the achievement of the goal and included the question: "What is the most beautiful thing when the goal has been achieved?" Step 3, a personal obstacle or difficulty that stands in the way of the child achieving the goal, was identified using two questions: "What prevents me from reaching my goal?" and "What stands in my way?" Step 4 involved formulating an alternative course of action with the question, "What can I do if the obstacle occurs?" This step was shown graphically on the poster as an alternative cycle path. Finally, the poster contained the if-then plan: "If *the obstacle* occurs, then I *make/think behavior Y.*" (see *Figure 1*).
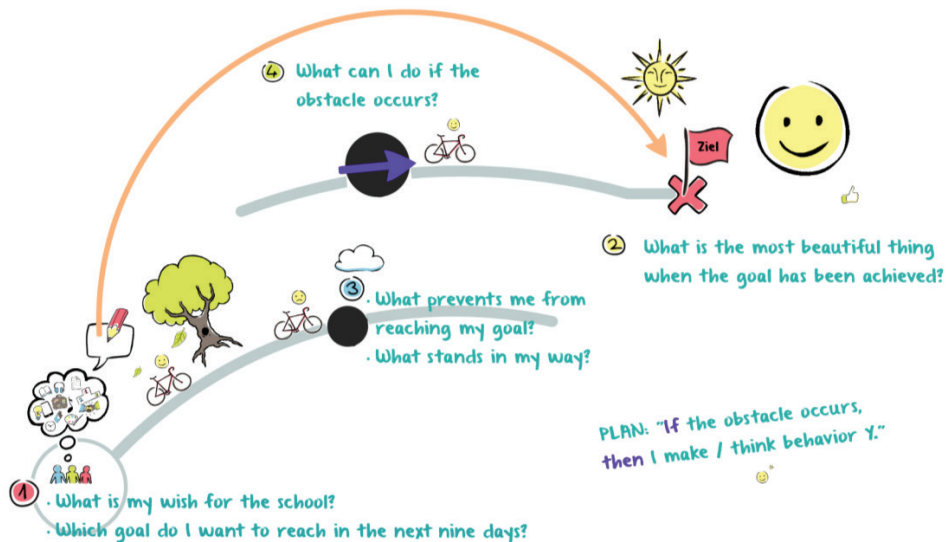

Figure 1. Poster WOOP/ Condition 1 (Used with permission from Prezi Inc.)

Condition 2 — without contrasting

In order to keep the number of work steps the same in both groups, the poster of the control group also included four steps. The first and second steps were identical to that of the WOOP/Condition 1 (experimental group). The third step identified the feeling that arises after the achievement of the goal and included the question, "How do I feel when I have reached my goal?" The fourth step dealt with the condition after the achievement of the goal with the question, "What do I experience when I have achieved my goal?" Finally, the poster included the if-then plan, which is related to the feelings regarding the achievement of the goal: "If *my goal* is achieved, then the *most beautiful thing* happens *and I feel X*" (see *Figure 2*).
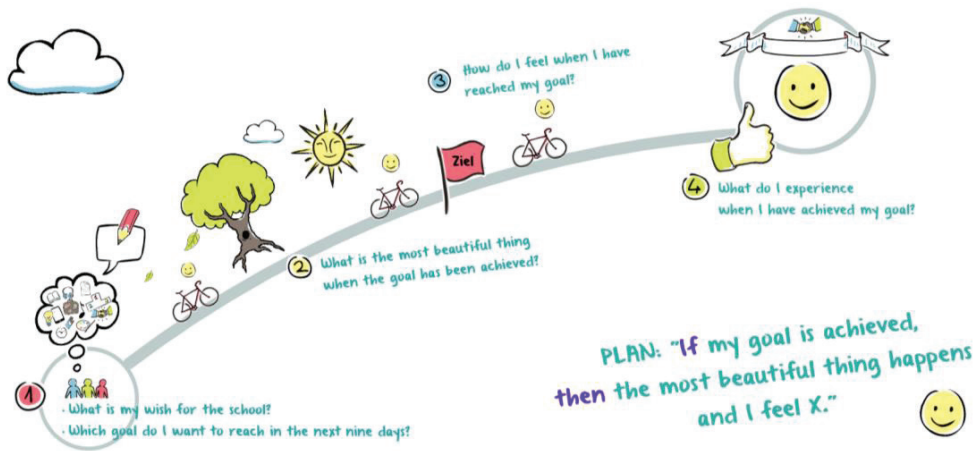
Figure 2. Poster Condition 2, without contrasting (Used with permission from Prezi Inc.)

In order to practice the creation of the if-then plan, workbooks (size of 148 x 210 mm) in which all four steps of the plan shown on the poster were listed again, one after the other, were issued to both groups. Under each step there was space for the independent written processing of the step. On the last pages of the workbooks, the children were asked to create an if-then plan ("Now I'm building my own if-then plan, according to the template below!"): in the workbook of the WOOP/ experimental group, with respect to overcoming an obstacle, and in the control group, with respect to the feelings that arise when they have reached their destination. Thus, the children could fill these in individually, step by step, with their own answers.

Results

The preparation of the data for analysis was carried out using *IBM SPSS Statistics 24* statistical software: If participants did not provide any information, and thus there were no answers to the variables to be evaluated, their data was completely removed from the data set and thus excluded from analysis. In total, there were two exclusions for the parent surveys and 14 exclusions of children's self-reports, due to their not answering any survey questions at one of the two measurement dates, or

because of absence due to illness on the school survey date. The parents' data on the ADHD symptoms of their children were added together so that 36 represented the highest attainable total score. The actual data analysis was then performed with the analysis tool *RStudio* (version 3.3.0, 2016 - 05 - 03); the significance level was set at $p \leq .05$. *Table 1* contains all amounts reported below.

First of all, we should report that no significant interaction between sex and time of measurement was found ($F (1, 32) = 1.29, p = .264$). A significant main effect of the time of measurement was found ($F (1, 32) = 5.83, p = .022$). Both sexes reported significantly higher self-control at the time of the second measurement than at the first time of measurement.

The first hypothesis (H 1) — that self-regulation would be improved by the WOOP/ Condition 1 compared to Condition 2 — was analyzed with an ANOVA, comparing the interaction of condition and point in time. No significant interaction was found between WOOP/Condition 1 ($n = 16$) and Condition 2 ($n = 18$) for the self-regulation reported by the children over time ($F(1, 32) = 1.33, p = .258$). These results indicate that the conditions did not differ in their effect over time. However, a significant effect of the time of measurement was found ($F(1,32) = 5.84, p = .022$), as depicted in *Figure 3* (*Condition 1*: pre $M = 3.36, SD = 0.73$; post $M = 3.50, SD = 0.78$; *Condition 2* : pre $M = 3.44, SD = 0.79$, post $M = 3.84, SD = 0.67$). In both conditions, the children reported significantly higher self-regulation at the second time of measurement than at the first measurement time.
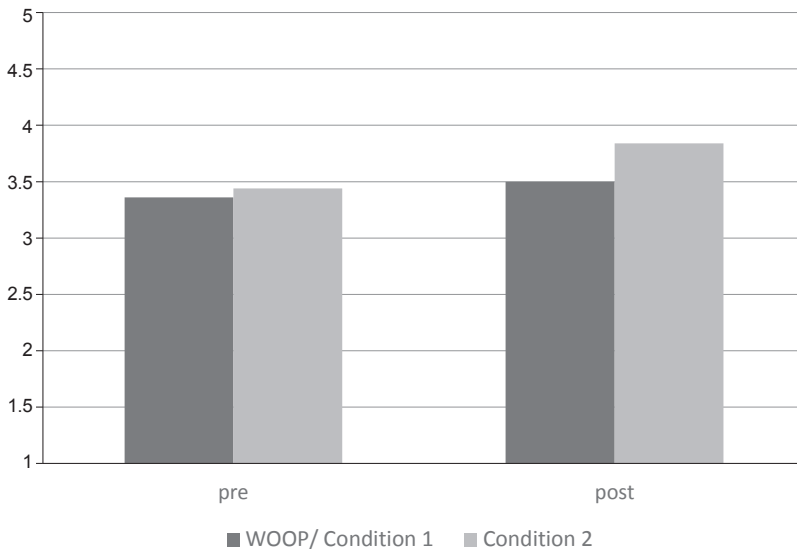
Figure 3. The average self-regulation of children as reported by themselves with the German version of the Self-Control Scale (Bertrams & Dickhäuser, 2009) (y-axis, scale level 1-5), separated for the WOOP/ Condition 1 and Condition 2 at the measurement times pre and post survey (x-axis).

The t-test results on the assumption of hypothesis 2 (H 2) with regard to the ADHD symptoms of the children reported by the parents ($n = 47$), showed no significant difference for the mean values of the symptoms of all persons in both con-

ditions over the 18 survey days, between WOOP/ Condition 1 and Condition 2 ($t = 1.98$, $df = 39$, $p = .054$; *M Condition 1* = 11.59, *M Condition 2* = 13.62). These results indicate that the conditions did not differ in their averages over time. This is shown in *Figure 4*. There was no major effect for the two conditions over time (*Condition 1* $F(1, 27) = .616$, $p = .439$, *Condition 2* $F(1, 16) = .12$, $p = .745$), indicating that the parents reported on average no changes in their children's self-regulation on a daily basis, independent of conditions. However, the parents' reports on the ADHD symptoms of their children differed depending on which group their child belonged to (see also *Figure 4*). Participants in WOOP/ Condition 1 showed a less severe symptoms than participants in Condition 2. After checking the analysis for the standard deviations, we found that the scatter of values of the ADHD symptoms of all rated children of Condition 1 comparing to Condition 2 over the 18 survey days, were not significant ($t = 1.96$, $df = 34$, $p = .057$, *M Condition 1* = 3.25, *M Condition 2* = 4.42). This suggests that on a person-to-person level, the parents' evaluations of the children of WOOP/ Condition 1, compared to Condition 2, did not differ significantly over the 18 survey days.
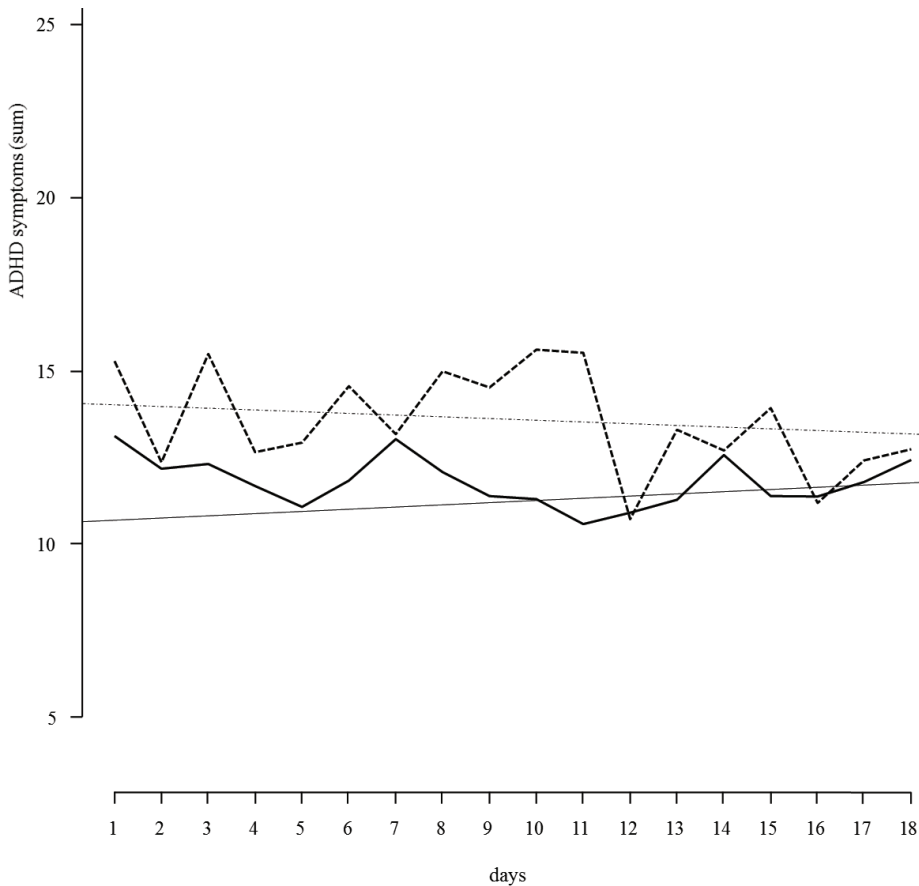

Figure 4. The children's ADHD symptoms reported by the parents with Conners 3 (Lidzba, Christiansen, & Drechsler, 2013) over the 18 survey days, between WOOP/Condition 1 (continuous line) and Condition 2 (dashed line), and their respective mean value changes.

The participating children all showed much joy during the intervention and seemed to enjoy the opportunity to talk about their wishes for achievement in school in the future. We controlled the commitment (meaning the motivation which is light by the goal) with the individually defined goals (*e.g.*, "I would be disappointed not to achieve my goal."), for which there was no difference between the groups ($F_{(1, 32)} = .30$, $p = .588$). This result suggests that the conditions did not differ in their respective motivation; they are comparable, and therefore the commitment could not be an explanation of the measured changes in children's self-regulation.

Table 1

Average self-regulation of children and the associated standard deviations, separated by groups and measurement times

Variable	Condition	*n*	Measurement	
			pre M (SD)	post M (SD)
self regulation (self report)	WOOP/ Condition 1	16	3.36 (0.73)	3.5 (0.78)
	Condition 2	18	3.44 (0.79)	3.84 (0.67)
			Over all 18 days	
ADHD symptoms (parents report)	WOOP/ Condition 1	18	11.59 (3.25)	
	Condition 2	29	13.62 (4.42)	

Discussion

This study aimed to determine whether a WOOP intervention could improve the children's self-regulation. To address this question directly, we trained children and recorded their own reports of their self-regulation, before and after an 18-day survey period, as well as getting daily information from their parents assessing this ability. We found that children benefited from the WOOP intervention over time. Testing hypothesis 1 (H1) did not produce a significant result since WOOP/ Condition 1 did not lead to a significant improvement compared to Condition 2, which included no mental contrasting (one essential WOOP step). However, our study showed that children in both conditions improved significantly over time, as shown in pre-post comparison of their self-reported self-regulation.

This result is not in line with those of Saddawi-Konefka et al. (2017), who measured goal aspiration and learning towards a goal by means of WOOP, in comparison to a pure goal intention, and reported finding advantages for using WOOP. One possible explanation for the discrepancy between our results and those of Saddawi-Konefka et al., relates to the findings by Sevincer, Mehl, and Oettingen (2017) that participants often automatically mentally contrast, regardless of whether they were instructed to or not. This could be an explanation for the insignificant difference between the conditions, because mental contrasting is essential for training self-regulation (Oettingen, 2014).

In the present study we did not examine whether individuals were able to mentally contrast themselves, so it could be that the children in Condition 2 also contrasted mentally and improved their self-regulation, and thus showed no difference compared to the children in Condition 1. We suspect that the child-friendly materials which, in contrast to Saddawi-Konefka et al. (2017), not only differentiated between goal intention and WOOP, but resembled each other in two of the four steps, could have caused this (Condition 2 did not contrast in step 3, and in step 4, the if-then plan didn't link the situation with the goal-oriented action, but only with a positive feeling toward the outcome).

A positive mood is positively related to the performance of an executive function task (which includes self-regulation, *e.g.*, Gagne & Nwadinobi, 2018) if the motivation for the task processing is high (Phillips, Bull, Adams, & Fraser, 2002). So it is also conceivable that Condition 2 had a positive effect on the mood of the participating children, due to the increased positive connotation of the third training step, whereby the children's own abilities were assessed better than they would have been if they had had a neutral mind set.

Another aim of this study was to determine whether the children's daily ADHD symptom scores would be less variable in WOOP/Condition 1 as compared to Condition 2 (H 2). Lower variability in ADHD symptoms might indicate that the WOOP at least engages the processes underlying self-regulation. We found no difference in the mean variability of ADHD symptom severity between the WOOP and non-WOOP conditions. However, the data show that consideration of a change in ADHD symptoms through self-regulation training may still be appropriate, as the curves are similar to the theoretically expected pattern of amplitude attenuation and reduction of daily variations in ADHD symptoms over time. ADHD symptoms vary in adolescents who are asked about them once a day (Schmid, Stadler, Dirk, Fiege, & Gawrilow, 2016). Compensating for these symptoms by training children's underlying self-regulation abilities still seems to be conceivable and corresponds to considerations put forward by Barkley (2005), according to whom "ADHD represents a developmental disorder of behavioral inhibition that interferes with self-regulation and the organization of behavior towards the future." (p. 3).

Our study was limited in several ways which may affect its interpretation. We figured that the daily confrontation with questions about one's own child may have sensitized the parents to the skills in question and distorted their judgments. Furthermore, the small sample size, especially when divided into the two conditions, means that the results shown cannot be generalized, since they lack statistical power.

A second limitation is the number of testing items used, since they were presumably too small, and therefore could not adequately represent the variables, which can also be deduced from the quality criteria. Besides, the construct of self-regulation is best represented by the overall scale (Lindner, Nagy, & Retelsdorf, 2015). The idea behind our choice of test items was guided by the desire to keep the duration of the questioning as short as possible, especially since it was being done on a daily basis. In addition, a pilot study showed an increased ability to depict symptom fluctuations for the items used. For analyzing the results of the first

hypothesis, we used the self-reported values of children on single items of the German version of the Self-Control Scale (Bertrams & Dickhäuser, 2009). This could potentially limit the validity of the results, because the children might overrate their abilities (see Hughes, Turkstra, & Wulfeck, 2009), and for this reason we recommend parents as raters of their children's self regulation.

Conclusion

In summary, the present study aimed to evaluate whether WOOP has the potential to reduce self-regulation deficits on a day-to-day-level. We found improvement in self-reported self-regulation for the children over time, but an decrease of selfregulation deficits measured as reduction in ADHD symptoms reported daily by the parents, was not observed. Although we did not get the expected result showing an advantage of the WOOP condition compared to Condition 2, the study showed that self-regulatory interventions can basically help school children formulate and better achieve their school goals, and improve their self-assessed self-regulation. Although this relationship should be investigated again using bigger samples, the results of the present study do indicate that children can benefit from a WOOP intervention. With regard to the usefulness of measuring variables on a daily basis and of using portable devices, the advantages of ambulatory assessments, as Bugl, Schmid, and Gawrilow (2015) recommend, should be emphasized once again: they offer methodological and practical advantages by directly capturing aspects of the participants' interest in the natural environment and mapping processes.

These results contribute to the idea of applying self-regulation strategies on a daily basis, and thus to school psychological practice dealing with children with self-regulation deficits. For the future, we recommend carrying out specific interventions to promote self-regulation in the school setting. This can be done directly by the teaching staff after a training course, or under guidance, and can be integrated into lessons due to the short duration of the intervention (Gawrilow, Guderjahn, & Gold, 2013).

Acknowledgements

References

Achtziger, A., & Gollwitzer, P.M. (2010). Motivation und Volition im Handlungsverlauf [Motivation and volition in course of action]. In J. Heckhausen & H. Heckhausen (Eds.), *Springer-Lehrbuch. Motivation und Handeln: Mit 45 Tabellen [Springer-Textbook. Motivation and action: With 45 tables]* (4th ed., pp. 309–335). Heidelberg: Springer. https://doi.org/10.1007/978-3-642-12693-2_12

Achtziger, A., Gollwitzer, P.M., & Sheeran, P. (2008). Implementation intentions and shielding goal striving from unwanted thoughts and feelings. *Personality & Social Psychology Bulletin*, *34*(3), 381-393. https://doi.org/10.1177/0146167207311201

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders*: American Psychiatric Association. https://doi.org/10.1176/appi.books.9780890425596

Barkley, R.A. (Ed.). (2005). *ADHD and the nature of self-control*. New York: Guilford Press.

Bertrams, A., & Dickhäuser, O. (2009). Messung dispositioneller Selbstkontroll-Kapazitaet [Measurement of the dispositional capacity of self-control]. *Diagnostica [Diagnostics]*, *55*(1), 2–10. https://doi.org/10.1026/0012-1924.55.1.2

Bugl, P., Schmid, J., & Gawrilow, C. (2015). Ambulantes Assessment in der Schule: Den schulischen Alltag erfahrbar machen. [Ambulatory assessment at school: Making everyday school life a tangible experience] *Lernen und Lernstoerungen*, [Learning and learning disorders] *4*(4), 261–268. https://doi.org/10.1024/2235-0977/a000115

Churchill, S., & Jessop, D. (2010). Spontaneous implementation intentions and impulsivity: Can impulsivity moderate the effectiveness of planning strategies? *British Journal of Health Psychology*, *15*(3), 529–541. https://doi.org/10.1348/135910709X475423

Duckworth, A.L., Grant, H., Loew, B., Oettingen, G., & Gollwitzer, P.M. (2011). Self regulation strategies improve self discipline in adolescents: Benefits of mental contrasting and implementation intentions. *Educational Psychology*, *31*(1), 17–26. https://doi.org/10.1080/01443410.2010.506003

Duckworth, A.L., Kirby, T., Gollwitzer, A., & Oettingen, G. (2013). From fantasy to action: Mental contrasting with implementation intentions (MCII) improves academic performance in children. *Social Psychological and Personality Science*, *4*(6), 745–753. https://doi.org/10.1177/1948550613476307

Fahrenberg, J., Myrtek, M., Pawlik, K., & Perrez, M. (2007). Ambulatory assessment - Monitoring behavior in daily life settings. *European Journal of Psychological Assessment*, *23*(4), 206–213. https://doi.org/10.1027/1015-5759.23.4.206

Gagne, J.R., & Nwadinobi, O.K. (2018). Self-control interventions that benefit executive functioning and academic outcomes in early and middle childhood. *Early Education and Development*, *29*(7), 971–987. https://doi.org/10.1080/10409289.2018.1496721

Gawrilow, C., & Gollwitzer, P.M. (2008). Implementation intentions facilitate response inhibition in children with ADHD. *Cognitive Therapy and Research*, *32*(2), 261–280. https://doi.org/10.1007/s10608-007-9150-1

Gawrilow, C., Gollwitzer, P.M., & Oettingen, G. (2011). If-then plans benefit executive functions in children with ADHD. *Journal of Social and Clinical Psychology*, *30*(6), 616–646. https://doi.org/10.1521/jscp.2011.30.6.616

Gawrilow, C., Guderjahn, L., & Gold, A. (2013). *Stoerungsfreier Unterricht trotz ADHS: Mit Schuelern Selbstregulation trainieren - ein Lehrermanual. [Trouble-free teaching despite ADHD: Training self-regulation with students - a teacher's manual.]* Muenchen, Basel: Ernst Reinhardt Verlag.

Gawrilow, C., Morgenroth, K., Schultz, R., Oettingen, G., & Gollwitzer, P.M. (2013). Mental contrasting with implementation intentions enhances self-regulation of goal pursuit in schoolchildren at risk for ADHD. *Motivation and Emotion*, *37*(1), 134–145. https://doi.org/10.1007/s11031-012-9288-3

Gawrilow, C., Schmitt, K., & Rauch, W. (2011). Kognitive Kontrolle und Selbstregulation bei Kindern mit ADHS [Cognitive control and selfregulation in children with ADHD]. *Kindheit und Entwicklung*, [Childhood and development] *20*(1), 41–48. https://doi.org/10.1026/0942-5403/a000039

Gollwitzer, P.M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist*, *54*(7), 493–503. https://doi.org/10.1037/0003-066X.54.7.493

Gollwitzer, P.M. (2012). Mindset theory of action phases. In P.A.M. van Lange (Ed.), *Handbook of theories of social psychology* (pp. 526–546). Los Angeles, Calif.: Sage. https://doi.org/10.4135/9781446249215.n26

Gollwitzer, P.M., & Brandstätter, V. (1997). Implementation intentions and effective goal pursuit. *Journal of Personality and Social Psychology*, *73*(1), 186–199. https://doi.org/10.1037/0022-3514.73.1.186

Gollwitzer, P.M., & Sheeran, P. (2006). Implementation intentions and goal achievement: A meta-analysis of effects and processes. *Advances in Experimental Social Psychology, 38,* 69–119. https://doi.org/10.1016/S0065-2601(06)38002-1

Guderjahn, L., Gold, A., Stadler, G., & Gawrilow, C. (2013). Self-regulation strategies support children with ADHD to overcome symptom-related behavior in the classroom. *Attention Deficit and Hyperactivity Disorders*, *5*(4), 397–407. https://doi.org/10.1007/s12402-013-0117-7

Hartig, M., & Kanfer, F.H. (1973). The role of verbal self-instructions in children's resistance to temptation. *Journal of Personality and Social Psychology, 25*(2), 259–267. http://dx.doi.org/10.1037/h0033938

Heckhausen, H., & Gollwitzer, P.M. (1987). Thought contents and cognitive functioning in motivational versus volitional states of mind. *Motivation and Emotion*, *11*(2), 101–120. https://doi.org/10.1007/BF00992338

Hughes, D.M., Turkstra, L.S., & Wulfeck, B.B. (2009): Parent and self-ratings of executive function in adolescents with specific language impairment. *International journal of language & communication disorders, 44*, 901–916. https://doi.org/10.1080/13682820802425693

Kanfer, F.H., Reinecker, H., & Schmelzer, D. (2006). *Selbstmanagement-Therapie: Ein Lehrbuch fuer die klinische Praxis [Self management therapy: A textbook for clinical practice]*, 4, durchges. Aufl., Heidelberg: Springer.

Langberg, J.M., Arnold, L.E., Flowers, A.M., Altaye, M., Epstein, J.N., & Molina, B.S.G. (2010). Assessing homework problems in children with ADHD: Validation of a parent-report measure and evaluation of homework performance patterns. *School Mental Health*, *2*(1), 3–12. https://doi.org/10.1007/s12310-009-9021-x

Lindner, C., Nagy, G., & Retelsdorf, J. (2015): The dimensionality of the Brief Self-Control Scale — An evaluation of unidimensional and multidimensional applications. *Personality and Individual Differences, 86,* 465–473. https://doi.org/10.1016/j.paid.2015.07.006

Millenet, S., Hohmann, S., Poustka, L., Petermann, F., & Banaschewski, T. (2013). Risikofaktoren und fruehe Vorlaeufersymptome der Aufmerksamkeitsdefizit-/Hyperaktivitaetsstoerung (ADHS) [Risk factors and early precursor symptoms of attention deficit/hyperactivity disorder (ADHD)]. *Kindheit und Entwicklung [Childhood and development], 22*, 201–208. https://doi.org/10.1026/0942-5403/a000118

Mischel, W. (2014). The Marshmallow Test: Mastering self-control. New York, NY, US: Little, Brown and Co.

Mischel, W., Shoda, Y., & Rodriguez, M. (1989). Delay of gratification in children. *Science*, *244*(4907), 933–938. https://doi.org/10.1126/science.2658056

Oettingen, G. (2012). Future thought and behaviour change. *European Review of Social Psychology*, *23*(1), 1–63. https://doi.org/10.1080/10463283.2011.643698

Oettingen, G. (2014). *Rethinking positive thinking: Inside the new science of motivation*. New York, NY: Current.

Oettingen, G., & Gollwitzer, P.M. (2001). Goal setting and goal striving. In A. Tesser & N. Schwarz (Eds.), *The Blackwell handbook of social psychology* (pp. 329–347). Oxford: Blackwell. https://doi.org/10.1002/9780470998519.ch15

Oettingen, G., & Gollwitzer, P. (Eds.). (2015). *Self-regulation in adolescence*. New York: Cambridge University Press.

Oettingen, G., & Mayer, D. (2002). The motivating function of thinking about the future: Expectations versus fantasies. *Journal of Personality and Social Psychology*, *83*(5), 1198–1212. https://doi.org/10.1037/0022-3514.83.5.1198

Oettingen, G., Mayer, D., Thorpe, J.S., Janetzke, H., & Lorenz, S. (2005). Turning fantasies about positive and negative futures into self-improvement goals. *Motivation and Emotion*, *29*(4), 236–266. https://doi.org/10.1007/s11031-006-9016-y

Parks-Stamm, E.J., Gollwitzer, P.M., & Oettingen, G. (2007). Action control by implementation intentions: Effective cue detection and efficient response initiation. *Social Cognition*, *25*(2), 248–266. https://doi.org/10.1521/soco.2007.25.2.248

Phillips, L.H., Bull, R., Adams, E., & Fraser, L. (2002). Positive mood and executive function: Evidence from Stroop and fluency tasks. *Emotion*, *2*(1), 12–22. https://doi.org/10.1037/1528-3542.2.1.12

Saddawi-Konefka, D., Baker, K., Guarino, A., Burns, S.M., Oettingen, G., Gollwitzer, P., & Charnin, J.E. (2017). Changing resident physician studying behaviors: A randomized, comparative effectiveness trial of goal setting versus use of WOOP. *Journal of graduate medical education*, *9*(4), 451–457. https://doi.org/10.4300/JGME-D-16-00703.1

Schmid, J., Stadler, G., Dirk, J., Fiege, C., & Gawrilow, C. (2016). ADHD symptoms in adolescents' everyday life: Fluctuations and symptom structure within and between individuals. *Journal of Attention Disorders.* https://doi.org/10.1177/1087054716629214

Schweiger Gallo, I., Bieleke, M., Alonso, M.A., Gollwitzer, P.M., & Oettingen, G. (2018). Down-regulation of anger by mental contrasting with implementation intentions (MCII). *Frontiers in Psychology*, *9*, 1838. https://doi.org/10.3389/fpsyg.2018.01838

Schweiger Gallo, I., & Gollwitzer, P.M. (2007). Implementation intentions: A look back at fifteen years of progress. *Psicothema*, *19*(1), 37–42.

Sevincer, A.T., Mehl, P.J., & Oettingen, G. (2017). Well self-regulated people use mental contrasting. *Social Psychology*, *48*(6), 348-364. https://doi.org/10.1027/1864-9335/a000322

Sheeran, P., & Webb, T.L. (2016). The intention-behavior gap. *Social and Personality Psychology Compass*, *10*(9), 503–518. https://doi.org/10.1111/spc3.12265

Sitzmann, T., & Ely, K. (2011). A meta-analysis of self-regulated learning in work-related training and educational attainment: What we know and where we need to go. *Psychological Bulletin, 137*(3), 421–42. http://dx.doi.org/10.1037/a0022777

Sliwinski, M.J. (2008). Measurement-burst designs for social health research. *Social and Personality Psychology Compass*, *2*(1), 245–261. https://doi.org/10.1111/j.1751-9004.2007.00043.x

Tangney, J.P., Baumeister, R.F., & Boone, A.L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, *72*(2), 271–324. https://doi.org/10.1111/j.0022-3506.2004.00263.x

Willcutt, E.G., Nigg, J.T., Pennington, B.F., Solanto, M.V., Rohde, L.A., Tannock, R., … & Lahey, B.B. (2012). Validity of DSM-IV attention deficit/hyperactivity disorder symptom dimensions and subtypes. *Journal of Abnormal Psychology*, *121*(4), 991–1010. https://doi.org/10.1037/a0027347

Wirth, A., Reinelt, T., Gawrilow, C., & Rauch, W.A. (2015). Selbstkontrolle in der Schule: Der Zusammenhang von geringer Selbstkontrolle und schlechten Schulleistungen bei Kindern mit ADHS. [Self-regulation at school: The link between low self-regulation and poor school performance among children with ADHD.] *Lernen und Lernstoerungen [Learning and learning disorders], 4*(4), 245–259. https://doi.org/10.1024/2235-0977/a000114

Zimmerman, B.J. (1990). Self-regulated learning and academic achievement: An overview. *Educational Psychologist*, *25*(1), 3-17. https://doi.org/10.1207/s15326985ep2501_2

Well-Being and Working Conditions of Teachers in Sweden

Elinor Schad*, Per Johnsson

Department of Psychology, Lund University, Sweden

Corresponding author. E-mail: elinor.schad@psy.lu.se

Background. In Sweden, teachers are subject to high turnover, unfavorable working conditions, and high incidence of stress-related disorders. The aim of the present study was to (a) assess teachers' perceptions of work-related health and working conditions, (b) examine the relationship among several key characteristics in teachers' work environment, and (c) examine the importance for well-being of *job satisfaction, separation between work and spare time,* and *recovery from work.*

Design. Primary and lower secondary school teachers in Sweden were invited to participate in a questionnaire study assessing five central aspects of health (subjective well-being, physical activity, self-rated health, sleep quality, and health complaints). Building on previous research, the effect of job satisfaction on well-being as well as on health complaints was tested using a mediation model with separation between work and spare time, and recovery from work, as mediators.

Results. Of the respondents, 40.2% scored below the cut-off recommended in the screening for depression, 43.8% qualified as leading a sedentary lifestyle, and 33.7% reported insufficient recovery from work. Sixty-one percent reported one or more sleep problems indicative of insomnia. Well-being correlated highly with self-rated health, health complaints, and separation between work and spare time. There is moderate support for the two models used to analyze the associations between job satisfaction and the outcome variables — well-being and health complaints — as both separation between work and spare time, and recovery from work, partially mediate the associations.

Conclusion. The results confirm recent research pointing to the teaching profession as a vulnerable occupational group. Especially disconcerting and relevant for teachers in Sweden are results indicative of problems with recovery from work and insufficient separation between work and spare time.

Introduction

Teachers in Sweden have experienced cutbacks and reforms in recent years, altering teaching conditions in substantial ways (Lundström, 2015). Notwithstanding that many teachers like their job, there are a number of reports indicating a problematic work situation (Arbetsmiljöverket, 2014b, 2016; Försäkringskassan, 2014). This negative trend is in line with international data (Travers, 2017). Compared to ten years ago, teachers experience a higher workload and increased demands (Fromm & Hagström, 2011). Sleeping problems, sick leave, and intention to quit their job are also issues that have been reported (Arbetsmiljöverket, 2014b). To this can be added that the teaching profession is increasingly scrutinized by society at large, which puts collective pressure on teachers as a group. Although recent national studies have investigated the occurrence of problems with teachers' health by studying burnout (Arvidsson, Håkansson, Karlson, Björk, & Persson, 2016), work-life conflict (Richter, Näswall, Lindfors, & Sverke, 2015), and workplace communication (Schad, 2019a; Schad 2019b), there is a need to further assess the associations between the work environment of teachers and teachers' well-being and health.

Work-Related Health

In light of recent reports about health and sick leave among teachers in Sweden, there is an apparent need for a comprehensive assessment of teachers' health. To this end, indicators for well-being, physical activity, self-rated health, sleep quality, and health complaints were used as five central aspects to assess teachers' perception of their own health. Separation between work and spare time, possibilities for recovery from work, estimation of work ability, and sick leave were further investigated, in order to get a full picture.

Subjective Well-Being

People's well-being is associated with their physiology (Ryff & Singer, 1998), ability to cope with stress (Salovey, Rothman, Detweiler, & Steward, 2000), and longevity (Chida & Steptoe, 2008). Satisfying social relationships, being productive at work, and being active in society are some of the behavioral consequences reported for people with high subjective well-being (for a review, see Diener, Tay, & and Oishi, 2017). Furthermore, work-related well-being was shown, in a longitudinal study by Hakanen and Schaufeli (2012), to predict general well-being.

Well-being can be measured and quantified in several areas of life (e.g., physical, emotional, social, and spiritual) (McDowell, 2010). Subjective well-being (SWB) refers to psychological functioning in three areas (life satisfaction, positive mood, and absence of negative mood) (Diener, Oishi, & Lucas, 2003). Subjective well-being is frequently measured using the World Health Organization Well-Being Index (WHO-5) (Topp, Østergaard, Søndergaard, & Bech, 2015). The scale is a positively worded five-item questionnaire assessing well-being during the past two weeks (Bech, 1999).

The WHO-5 has, in terms of clinimetric validity and as a distinctly generic scale, proven, in comparison with other well-being measures, to be free of overlap

with other specific disease-related aspects (Hall, Krahn, Horner-Johnson, & Lamb, 2011). In addition, the WHO-5 has proven to have high sensitivity for the screening of depression, and is therefore often recommended as a screening tool, whether for clinical diagnostic use or for research purposes (Topp et al., 2015).

Physical Activity

The many benefits of physical activity are well established (Warburton, Nicol, & Bredin, 2006); yet, life today is increasingly sedentary. The WHO definition of physical activity specifies *being active* as: ">150 minutes/week of physical activity such as for example gardening or brisk walks" (WHO, 2010). Recent national surveys in Sweden indicate that physical activity on the population level has remained steady during the past ten years (Folkhälsomyndigheten, 2016). It is worth noting that for both men and women, educational level correlates with physical activity, as those with higher educational levels also report higher levels of physical activity (Loyen et al., 2016). Teachers can be presumed to have a fairly active work days compared to many other professionals.

Self-Rated Health

The WHO defines health as a "state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1948). In order to assess health in epidemiological research, various measures with self-ratings are commonly used (Eriksson, Undén, & Elofsson, 2001). Although the use of such self-ratings has been criticized, a recent comparative study has shown that differently worded measures function well as parallel assessments of subjective health (Eriksson et al., 2001). Worth noting is that population studies often show that women experience their health as worse than men do (e.g., Taloyan, Leineweber, Hyde, & Westerlund, 2015). Contrary to international findings, self-rated health (SRH) among the working population in Sweden was found to be worse for men than for women (Taloyan et al., 2015).

Sleep Quality

Around one-third of the general population in industrialized countries is reported to experience sleeping problems, while 6–10% fulfil the DSM-IV criteria for insomnia (LeBlanc et al., 2009; Ohayon & Bader, 2010; Walsh et al., 2011). Although it has been established that psychosocial factors at work impact sleep, much remains to be understood about the development of sleep disturbances in the working population (Linton et al., 2015). In a recent study, for example, higher work demands were shown to predict disturbed sleep (Åkerstedt et al., 2015). In addition, a reciprocal relationship has been shown between work characteristics and sleep disturbances (Törnroos et al., 2017; Åkerstedt et al., 2015). For Sweden, recent national statistics show that 5.3% of men and 10.4% of women report having had work-related sleep disorders during the past 12 months (Arbetsmiljöverket, 2016). For teachers in Sweden, gender differences are supported in a recent study by Arvidsson et al. (2016).

Health Complaints

Although it is common in the adult working population to experience some degree of health complaints, self-report measures assessing such complaints may be fruitfully used to detect early signs of stress-related symptoms. In Sweden, a frequent reason for sick leave is currently *Exhaustion Disorder* (ED) (ICD-10 code: F43.8A). Exhaustion Disorder was classified by the Swedish National Board of Health and Welfare (NBHW) in 2003. It is characterized by physical and mental health symptoms (such as lack of energy, concentration problems, or minor aches and pains) experienced during two weeks prior to assessment (Socialstyrelsen, 2003). Furthermore, an overrepresentation of people on sick leave due to subjective health complaints, as represented by Exhaustion Disorder, has been found in female-dominated professions, such as education and health care (SBU, 2014).

Working Conditions

In Sweden, teachers represent a sector of the work force with unusual working conditions, as they have a 45-hour work week during the school terms, of which ten hours are allocated to be done at home. This way of organizing work has consequences for the separation between work and spare time, as well as for the possibilities to recover from work. Recent research on teachers in Sweden has indicated lack of recovery from work to be associated with higher incidence of burnout (Arvidsson et al., 2016). Besides the difficulty of separating work and spare time, due to the specific regulations controlling the working hours, the possibility of relaxing from work is also connected to the type of intellectual work teachers do, the intense work days they experience, as well as their emotional engagement with their students (Schad, 2019).

Work Environment Indicators

Work-environment-related constructs act as a strong predictor for job satisfaction among teachers (Schad, 2019a). In addition, employees' appraisals of work experiences, such as collegial interactions, their psychological evaluation of the content and processes of work, as well as their role in the organization, overall, are important for job satisfaction, well-being, and organizational outcomes (Judge, Thoresen, Bono, & Patton, 2001). Skaalvik and Skaalvik (2009) have reported on job satisfaction being negatively associated with burnout. In this study, the relationship between well-being and several key characteristics in the work environment was assessed, which, in line with previous research, would influence teacher well-being (Dollard & Bakker, 2010). Quantitative demands, a form of work overload, refers to high demands and few opportunities to take breaks (Byrne, 1999; Day et al., 2006) and have been shown to be of relevance for burnout and work engagement (Schaufeli, Bakker, & Van Rhenen, 2009). Physical working conditions have been shown to be important predictors for teacher turnover (Loeb, Darling-Hammond, & Luczak, 2005) and job satisfaction (Kloep & Tarifa, 1994). Moreover, teachers' perception of role clarity was measured; it is defined in the literature as the degree to which an individual understands their job information and the performance

expectations of their position (Rizzo, House, & Lirtzman, 1970). This has been shown to be an especially important aspect of teaching (Miller, 2002). A deficient workplace communication climate and unsatisfactory communicative interactions with colleagues may be viewed as interpersonal stressors, unnecessarily depleting emotional and cognitive resources, most likely affecting teachers' job satisfaction, work performance, and engagement.

Aim and Research Questions

The aim of the present study was to build on previous research in our group by investigating teachers' perceptions of their health and working conditions. Specifically, the objectives of the present study were to:

1) assess teachers' perceptions of work-related health and working conditions;
2) examine the relationship among several key characteristics in teachers' work environment; and
3) examine the importance for well-being of job satisfaction, separation between work and spare time, and recovery from work.

Method

We assessed teachers' work-related health and working conditions with a comprehensive battery of health and work-related questions, and also the relationship between several key characteristics in teachers' work environment that would likely influence well-being. Due to the specific working conditions teachers experience in Sweden today, attention was also directed to separation between work and spare time, and recovery from work, and the relation of these two constructs to well-being and health complaints.

Study Design

In order to establish research collaboration, a broad call for interest was distributed through the development section of the Skåne Association of Local Authorities (Kommunförbundet Skåne), and the sampling method is therefore of a voluntary nature. In the interest of generalizability, a stratification was achieved as the sample was drawn from two municipalities different in socio-economic character. A cross-sectional survey was administered to all primary and lower secondary school teachers working in public schools in these municipalities in southern Sweden. The survey data was collected during October and November 2015 using an online survey tool (Webbenkater.com). Three reminders were distributed within a two-week period after the initial survey distribution.

The two municipalities consisted of a city with a population of around 50,000 and a suburban municipality with a population of around 35,000. Participation was voluntary and the participants were presented with an electronic informed consent document, which stated the purpose of the study and that individual responses would be kept confidential.

Participants

All teachers ($N=744$) working with pupils aged 6–16 in public schools in the two municipalities were invited to participate in the study. The response rate was 61% ($N=455$). In total, 401 teachers (216 from municipality 1 and 185 from municipality 2) were included in the study, as they met the inclusion criteria of working at least 50% of full time and having responded to at least 60% of the questions in the survey. The age of the participants ranged from 23 to 65 years, with a mean age of 46.2 years ($SD=10.0$ years); 13.0% of the teachers were below 35 years of age, 49.9% were in the age span 35 to 49, and 37.2% were older than 50. The mean years of teaching experience was 17.3 years ($SD=11.1$ years); 9.5% had 1–3 years; 6.5% 4–6 years; 46.1% 7–18 years; 21.7% 19–30 years; and 16.2% had 31 or more years of teaching experience. The average number of years employed at the present school was 8.9 ($SD=8.4$ years), with 80% having worked at the present school two years or more. See Table 1 for further information on sociodemographic, lifestyle, and occupational factors.

Table 1

Sociodemographic and lifestyle factors and occupational factors in the total study population ($N=401$), stratified by gender

Dimensions		All teachers	Females	Males	
Sociodemographic and lifestyle factors	Scale	$N=401$	$N=305$	$N=91$	P^*
Age, years; mean (*SD*)		401 46.2 (10.0)	46 (10)	46 (11)	.340[a]
Country of birth		401			.345[b]
Born in Sweden, *n* (%)		369 (92)	279 (91)	86 (95)	
Outside Sweden, *n* (%)		32 (8)	26 (9)	5 (5)	
Marital status		401			
Married or living together, *n* (%)		340 (85)	261 (86)	74 (81)	.324[b]
Single, *n* (%)		61 (15)	44 (14)	17 (19)	
Children residing at home		401			.984[b]
Yes, *n* (%)		234 (58)	178 (58)	53 (58)	
No, *n* (%)		167 (42)	127 (42)	38 (42)	
Well-being; mean (*SD*)	0–100 396	55.0 (21.5)	54.7 (21.6)	56.6 (21.1)	.462[a]
Physical activity (< 3.5 hour/week), *n* (%)	401	174 (44)	133 (44)	39 (43)	.609[a]
Self-rated health, mean (*SD*) (0, 25, 50, 75, 100)	0–100 397	58.5 (21.1)	58.1 (21.4)	59.6 (20.3)	.659[a]
Sleep quality, mean (*SD*)	1–4[c] 398	2.2 (0.9)	2.2 (0.9)	2.2 (.8)	.871[a]
Health complaints, during the last month (³ 3), *n* (%)	1–4[c] 397				
Heart palpitations and discomfort (e.g., chest pressure)		50 (12)	37 (12)	12 (13)	.646[a]
Sensitivity to light and noise		163 (41)	133 (44)	29 (32)	.013[a]

Impaired short-term memory			148 (37)	119 (40)	27 (30)	.011[a]
Impaired concentration or confusion			124 (31)	102 (34)	21 (23)	.054[a]
Dizziness, anxiety, or worry			79 (20)	59 (20)	18 (29)	.392[a]
Severe fatigue/lack of energy, even after resting			116 (29)	90 (30)	22 (24)	.238[a]
Impatience			103 (26)	78 (26)	22 (24)	.227[a]
Losing your temper (becoming irritated) over small things			88 (22)	67 (22)	20 (22)	.472[a]
Easily offended (e.g., close to tears)			66 (17)	61 (20)	5 (6)	<.001[a]
Feelings of hopelessness or powerlessness			86 (22)	67 (22)	17 (19)	.219[a]
Not able to take initiative			62 (16)	47 (19)	15 (16)	.648[a]
Separation between work and spare time, mean (*SD*)	1-4		2.4(0.8)	2.4 (0.8)	2.4 (0.8)	.614[a]
Recovery from work [3) 3)], n (%)		398	134 (34)	108 (34)	25 (28)	.216[a]
Estimation of work ability, mean (*SD*)	1–3	397	2.8(0.5)	2.8(0.5)	2.7(0.5)	.254[a]

Occupational factors

Seniority, years; mean (*SD*)		401	17.3 (11.1)	17.5 (11.1)	17.0 (11.4)	.585[a]
Present employer, years; mean (*SD*)		401	8.9 (8.5)	8.7 (8.3)	9.6 (9.2)	.403[a]
Type of employment, n (%)		401				.137[b]
Permanent			374 (93.3)	281 (92.1)	88 (96.7)	
Temporary			16 (4.0)	15 (4.9)	1 (1.1)	
Substitute			2 (0.5)	2 (0.7)	-	
Other			9 (2.2)	7 (2.3)	2 (2.2)	
School years taught, n (%)		401				.057[b]
F-6 (6–12-year-olds)			215 (53.6)	172 (56.4)	41 (45.1)	
7–9 (13–15-year-olds)			186 (46.4)	133 (43.6)	50 (54.9)	
Hours worked, n (%)		401				.005[b]
51 to 80%			48 (12.0)	41 (13.4)	6 (6.6)	
81 to 99%			29 (7.2)	27 (8.9)	2 (2.2)	
Full-time			324 (80.8)	237 (77.7)	83 (91.2)	
Team leader, n (%)		401	49 (12.2)	39 (12.8)	10 (11.0)	.648[b]
Coordinator, n (%)		401	23 (5.7)	17 (5.6)	6 (6.6)	.715[b]
Head teacher, n (%)		401	44 (11.0)	36 (11.8)	8 (8.8)	.423[b]
Does your position correspond to your training? n (%)		401				.020[b]
Yes, completely			277 (69.1)	213 (69.8)	60 (65.9)	
Yes, partly			110 (27.4)	83 (27.2)	26 (28.6)	
No			14 (3.5)	9 (3.0)	5 (5.5)	
Quantitative demands; mean (*SD*)	(0-5)[c]	401	3.41 (0.67)	3.45 (0.68)	3.31(0.64)	.025[a]

Note: [a]Mann-Whitney U test, [b]Chi-square [c]Higher scores indicate a less favorable situation. *n = 396

Ethical Considerations

The study protocol was approved by the Regional Ethical Review Board in Lund, Sweden (reg. nr 2014/654). Participation was voluntary and the participants were first presented with an electronic informed consent document, which stated the purpose of the study and that individual response on the measures would be kept confidential.

Measures

Information was collected on personal demographic variables including gender, age, marital status, whether there are children residing at home, and whether the respondent was born in Sweden. Questions regarding the participants' occupational situation covered employment status, working hours, years of work experience, years employed at current school, and grade levels taught. In addition, a question was asked regarding the match between teaching duties and teaching qualifications. The respondents were also asked if they held a position as team leader, coordinator, or head teacher (Förstelärare) (Table 1).

Subjective Well-Being

Subjective well-being was assessed with the 5-item World Health Organization Well-Being Index (WHO-5), which measures recently experienced mood (e.g., *Over the last two weeks, I have felt cheerful and in good spirits*) (Bech, Olsen, Kjoller, & Rasmussen, 2003). The items were rated on a 6-point scale (response alternatives: 0 = *never* to 5 = *all the time*) and the total sum was multiplied by 4 to gain a score between 0 and 100. Regarding internal consistency, an alpha value of .82 has previously been reported, and the scale has shown strong associations with comprehensive well-being scales (Topp et al., 2015).

Physical Activity

Physical activity (moderately strenuous activities) was assessed with one question from the Swedish National Public Health study on health, lifestyle, and living conditions. The purpose the survey is to monitor changes in health over time in the Swedish population, and it constitutes part of the public health policy (Folkhälsomyndigheten, 2016). It has been conducted annually since 2004 and comprises a random sample of ca. 20,000 individuals aged 16–84, reporting on the state of their health. (*How much time, during an ordinary week, do you spend on moderately effortful activities that make you warm, such as brisk walks, gardening, heavy housework, biking, swimming? This could vary over the year, but try to estimate an average:* 1 = *none at all*, 2 = *at most one hour per week*, 3 = *between one and three hours per week*, 4 = *more than three, but less than five hours per week*, 5 = *five hours per week or more*.) The objective was to assess how large a proportion of the sample achieved at least 3 hours/week of physical activity.

Self-Rated Health

Self-rated health was assessed with one item from the Copenhagen Psychosocial Questionnaire II (COPSOQ-II) (Kristensen, Hannerz, Høgh, & Borg, 2005). (*In*

general, would you say your health is: 0 = *poor,* 25 = *fair,* 50 = *good,* 75 = *very good,* 100 = *excellent.*)

Sleep Quality, Health Complaints, and Separation Between Work and Spare Time

Sleep quality (3 items), health complaints (11 symptoms), and separation between work and spare time (4 items) were assessed using the Lund University Checklist for Incipient Exhaustion (LUCIE) (Karlson et al., 2010). This self-report measure was developed to detect early signs of stress-related symptoms. Answers on sleep quality and health complaints were given on a 4-point scale, ranging from 1 = *not at all* to 4 = *very often* (e.g., *I have had trouble falling asleep*). Answers on separation between work and spare time were given on a 4-point scale, ranging from 4 = *not at all* to 1 = *very often* (e.g., *Problems at work make me irritable at home.*)

Recovery from Work

Recovery from work was assessed with one question (Arbetsmiljöverket, 2014a). (*Besides sleep, do you get enough recovery between work days?*) Answers were given on a 5-point scale, ranging from 1 = *far from enough* to 5 = *yes, definitely.*

Estimation of Work Ability and Sick Leave

Estimation of work ability was assessed with one question from the Work Ability Index (WAI) (Toumi, Illmarinen, Jahkola, Katajarinne, & Tulkki, 1998). The question was slightly modified to better reflect the teaching profession. (*Do you believe, according to your present state of health, that you will be able to work as a <u>teacher</u> two years from now?* 1 = *no, I don't think so,* 2 = *I am uncertain*, and 3 = *yes, probably*.) Sick leave was assessed with one item from the same index. (*How many days have you been away from work due to illness or injury (care, treatment, or examination) during the last year (12 months)?* 5 = *none,* 4 = *1–7 days,* 3 = *8–24 days,* 2 = *25–99 days*, and 1 = *100–365 days.*)

Work Environment Indicators

Job satisfaction was assessed with a modified and expanded 5-item scale, building on items from the Copenhagen Psychosocial Questionnaire II (COPSOQ-II) (Kristensen et al., 2005). The items were adjusted to fit the teaching profession (e.g., *Regarding your work in general, how pleased are you with your work prospects as a <u>teacher</u>?*). Answers were given on a 4-point scale: 1 = *very dissatisfied* to 4 = *very satisfied.*

Quantitative work demands were assessed with a 4-item subscale from COP-SOQ-II (Kristensen et al., 2005) (e.g., *Do you fall behind in your work?*). Answers were given on a 6-point scale ranging from 0 = *never* to 5 = *almost always.*

Physical work environment was assessed with a subscale from the school version of a Swedish questionnaire developed by Andersson (1998). The scale contains 4 items (e.g., *How do you perceive the school environment at large, regarding work environment as far as access to computers goes?*). Answers were given on a 5-point scale, ranging from 1 = *very poor* to 5 = *very good.*

Role clarity was assessed with a Swedish version (Schad, 2019a) of a 6-item scale originally developed by Rizzo et al. (1970) (e.g., *Clear, planned goals exist for my job*). Answers were given on a 4-point scale ranging from 1 = *does not fit at all* to 4 = *fits perfectly*.

Collegial communication was assessed with 6 items drawn from a scale originally developed by Cortina, Magley, Williams, and Langhout (2001) (e.g., *I am treated with respect*). Answers were given on a 5-point scale: 0 = *never*, to 4 = *for the most part*.

Workplace communication climate was assessed with 6 items (Schad, 2019a) (e.g., *People are keen on expressing their ideas*). Answers were given on a 4-point scale: 1 = *does not fit at all*, to 4 = *fits perfectly*.

Statistical Analysis

Means, standard deviations, and Cronbach's alpha coefficients were used to describe the study variables. Teachers working in the two municipalities reported similar mean scores on sociodemographic and lifestyle factors and were therefore treated as one sample (data not reported). The statistical computations were performed with IBM SPSS Statistics 24.0 and SPSS AMOS 24 for Windows (IBM Corp. Released 2016). Cronbach's alpha coefficients (α) were used to assess the internal consistency of the variables. As recommended by Hoaglin and Iglewicz (1987), all variables were inspected for outliers and data recoding was used in the case of the variable "job satisfaction", where a few extreme outliers were found.

Two-tailed actual *p*-values are reported where appropriate. Spearman correlations were used to explore associations between continuous study variables. Point biserial correlations were used to estimate the association between binary variables and continuous variables. Group comparisons were done with Pearson's Chi-square test, Mann-Whitney *U* tests, and independent-samples *t*-test.

In addition, a theoretically driven regression using PROCESS, model 4 (Hayes, 2013), was performed to assess whether separation between work and spare time, and recovery from work, mediate the association between, respectively, job satisfaction, well-being, and health complaints. The PROCESS macro allows for calculation of direct, indirect and total effects, utilizing bootstrapping (5,000 samples) to calculate standard errors (SE) and confidence intervals (CI).

The WHO-5 was dichotomized into good and poor subjective health following recommendations by Topp et al. (2015). The WHO-5 variable was also used as a continuous outcome in correlation and regression analysis.

Results

Characteristics of the Study Population

The study population comprised 76.1% women. There was no significant difference between men and women regarding the mean scores for sociodemographic factors (see *Table 1*). There was also no significant difference between women and men regarding physical activity, self-rated health, sleep quality, separation between work and spare time, recovery from work, and estimation of work ability. Women,

Table 2
Correlations between study variables

	M	SD	α	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Subjective well-being (0–100)	55.0	21.5	0.89	.124[b]	.550[a]	-.481[a]	-.707[a]	.700[a]	.598[a]	.397[a]	.178[a]	.497[a]	-.374[a]	.313[a]	.409[a]	.427[a]	.348[a]
2. Physical activity (1–5)	2.64	1.04		–	.293[a]	-.066	-.154[b]	.199[a]	.178[a]	-.026	.033	.026	-.073	-.061	.104[b]	-.089	-.023
3. Self-rated health (0–100)	58.5	21.1			–	-.353[a]	-.499[a]	.446[a]	.435[a]	.296[a]	.125[b]	.316[a]	-.235[a]	.162[a]	.259[a]	.247[a]	.177[a]
4. Sleep quality (1–4)[d]	2.22	0.89				–	.513[a]	.632[a]	-.386[a]	-.253[a]	-.095	-.252[a]	.213[a]	-.163[a]	-.213[a]	-.245[a]	-.136[b]
5. Health complaints (1–4)[d]	1.92	0.60					–	.732[a]	-.548[a]	-.451[a]	-.191[a]	-.459[a]	.387[a]	-.282[a]	-.360[a]	-.399[a]	-.282[a]
6. Separation between work and spare time (1–4)	2.42	0.76	0.85					–	.651[a]	.407[a]	.135[b]	.446[a]	-.452[a]	.282[a]	.356[a]	.343[a]	.259[a]
7. Recovery from work (0–4)	2.95	1.05							–	.291[a]	.115[b]	.345[a]	-.475[a]	.270[a]	.272[a]	.246[a]	.209[a]
8. Work Ability Index (1–3)	2.75	0.51								–	.192[a]	.409[a]	-.290[a]	.164[a]	.346[a]	.262[a]	.177[a]
9. Sick leave (1–5)	4.12	0.74									–	.160[a]	-.066	.006	.127[c]	.048	.063
10. Job satisfaction (1–5)	2.78	0.48	0.79									–	-.400[a]	.442[a]	.531[a]	.495[a]	.404[a]
11. Quantitative demands (0–5)[d]	3.41	0.67	0.56										–	-.261[a]	-.329[a]	-.205[a]	-.242[a]
12. Physical work environment (1–5)	3.41	0.77	0.64											–	.298[a]	.384[a]	.290[a]
13. Role clarity (1–4)	3.02	0.50	0.86												–	.416[a]	.399[a]
14. Collegial communication (0–4)	3.12	0.69	0.92													–	.597[a]
15. Workplace communication climate (1–4)	2.77	0.52	0.87														–

Note: [a]*correlations are significant at the 0.001 level,* [b]*correlations are significant at the 0.01 level,* [c]*correlations are significant at the 0.05 level.* [d]*Higher scores indicate a less favorable situation.*

however, reported significantly more problems on 3 of 11 health complaints (sensitivity to light and noise, impaired short-term memory, and being easily offended).

Regarding the occupational factors, women to a larger extent teach younger children, work part-time, and have a position corresponding to their training. Women also reported higher scores on quantitative demands.

Descriptive Statistics

Subjective Well-Being

The mean score for the well-being scale was 55.0 ($SD = 21.5$), mean (women) = 54.8, $SD = 21.6$, mean (men) = 56.4, $SD = 21.2$. In this sample of 401 teachers, 40.2% scored below or equal to the cut-off of 50 recommended in the screening for depression (Topp et al., 2015); 19.9% had a score below or equal to 32, the cut-off for minor depression; and 6.6% had a score below or equal to 20, the cut-off for major depression (Topp et al., 2015).

Physical Activity

Physical activity was reported to have the following distribution: *not at all*, 2.0%, *at most 1 hour/week*, 11.8%, *between 1 and 3 hours/week*, 30.0%, *more than 3 hours but less than 5 hours/week*, 32.0%, and *5 hours/week or more*, 24.2%. Dichotomizing the results, 43.8% qualify as leading a sedentary lifestyle (> 3 hours/week) (Folkhälsomyndigheten, 2016).

Self-Rated Health

Self-rated health was assessed with one question generating the following distribution: *excellent* (7.8%), *very good* (33.2%), *good* (45.6%), *less good* (11.8%), and *poor* (1.5%); for mean value and standard deviation, see *Table 1*.

Sleep Quality and Health Complaints

Sleep quality during the last month was assessed with three questions combined into a single variable. On an item level, almost half of the respondents (48.8%) reported being in agreement or strong agreement with *waking up several times or having disturbed sleep* and 44.5% reported being in agreement that they *woke up early in the morning and had trouble falling back asleep*, while over one third (32.1%) reported that they had *trouble falling asleep*. An average of 1.25 symptoms with disturbed sleep were reported/person ($SD = 1.22$). One or more symptoms of sleeping problems were reported by 61.0% (1 symptom 16.1%, 2 symptoms 19.6%, and 3 symptoms 23.4%). Although no gender or age differences were found on the full scale level, a trend was found indicating that for men problems with maintaining sleep and/or feeling restored when awakening increased somewhat with age ($T_{JT} = 1,832.50$, $z = 2.151$, $p = -.032$).

In this study, 70.1% reported health complaints during the last month on at least one item. An average of 2.7 health complaints ($SD = 2.9$) per person were reported, with sensitivity to noise (41%), impaired short-term memory (37%), and impaired concentration or confusion (31%) being the most prevalent health complaints (see *Table 2*).

Separation Between Work and Spare Time

Separation between work and spare time was assessed with four questions combined into a single variable (see *Table 2*). On an item level, 65.1% reported being in agreement or strong agreement that *work consumes so much energy that I lose the strength to take care of things I have to do at home*; 53.2% that *I have trouble relaxing during my spare time due to constant thoughts about work,* while 45.0% reported that *problems at work make me irritable at home*, and 38.7% that *I have trouble sleeping due to constant worries about work.*

Recovery from Work

Regarding whether the participants felt that they had the possibility to recover from work, the distribution of responses was: *yes, definitely* (5.3%), *yes, mostly* (27.1%), *no, somewhat unsatisfactory* (33.9%), *no, quite unsatisfactory* (24.4%), and *no, far from satisfactory* (9.3%).

Estimation of Work Ability and Sick Leave

Regarding estimation of work ability, 78.1% reported that they, taking their health into account, would still be able to work as teachers two years from now, 18.6% were unsure, and 3.3% thought they could not.

Absenteeism due to sickness or injury during the last 12 months was also assessed, and generated the following distribution: *no absence* (30.0%); *1–7 days* (55.2%); *8–24 days* (11.8%); *25–99 days* (2.5%); and *100–365 days* (0.5%).

Well-Being in Relation to Sociodemographic, Lifestyle, and Occupational Factors

Sociodemographic factors (gender, age, country of birth, marital status, and children residing at home) and lifestyle factors (physical exercise) showed no relation to well-being. Neither did most occupational factors (type of employment, hours worked, position corresponding with training, position as team leader, coordinator, or head teacher). Health-related factors such as self-rated health, sleep quality, and health complaints (*Table 3*) all proved to be related to well-being.

Spearman rank order correlation of the study variables (*Table 2*) showed high correlations of well-being with self-rated health ($r_s = .550$), health complaints ($r_s = -.707$), separation between work and spare time ($r_s = .700$), and recovery from work ($r_s = .589$). Increasing levels of well-being were positively associated with increasing levels of physical work environment, role clarity, collegial communication, and workplace communication climate (ranging from $r_s = .313$ to $r_s = .427$), while increasing levels of well-being were negatively associated with quantitative demands ($r_s = -.374$).

Multivariate Analysis

In order to further elucidate the relationship among the work-related health variables, a series of multivariate analyses were performed, centered on relevant health variables (well-being and health complaints) and job satisfaction, using the macro

PROCESS, model 4 (Hayes, 2013). First, it was tested whether *separation between work and spare time* and *recovery from work* would mediate the relationship between job satisfaction and well-being. The results show (*Figure 1*) that the indirect paths from job satisfaction to separation between work and spare time (*b* = .72, *SE* = .07, *p* < .001) and recovery from work (*b* = .77, *SE* = .10, *p* < .001) were both significant. Also, the indirect paths from separation between work and spare time (*b* = .59, *SE* = .07, *p* < .001) and recovery from work (*b* = .26, *SE* = .045, *p* < .001) to well-being were significant. Both independent paths between job satisfaction and well-being are thus significant, indicating mediation. The direct path from job satisfaction to well-being remained significant, indicating only partial mediation (*b* = .53, *SE* = .09, *p* < .001).

The bootstrapping for indirect effects showed that the total indirect effect (.622 *CI* [.491, .767]) as well as the indirect effect through separation between work and spare time (.426 *CI* [.311, .557]) and recovery from work (.197 *CI* [.123, .291]) were significant. The overall model explained 55.8% of the variance in well-being, while supporting partial mediation of job satisfaction by separation between work and spare time, and by recovery from work.

Secondly, it was tested whether *separation between work and spare time* and *recovery from work* would mediate the relationship between job satisfaction and health complaints. The direct path from job satisfaction to health complaints remained significant (*b* = -0.22, *SE* = .07, *p* < .001), indicating only partial mediation. Also, the paths from separation between work and spare time, and recovery from work (*b* = -0.07, *SE* = .02, *p* = .006), to health complaints were significant (*Figure 2*).

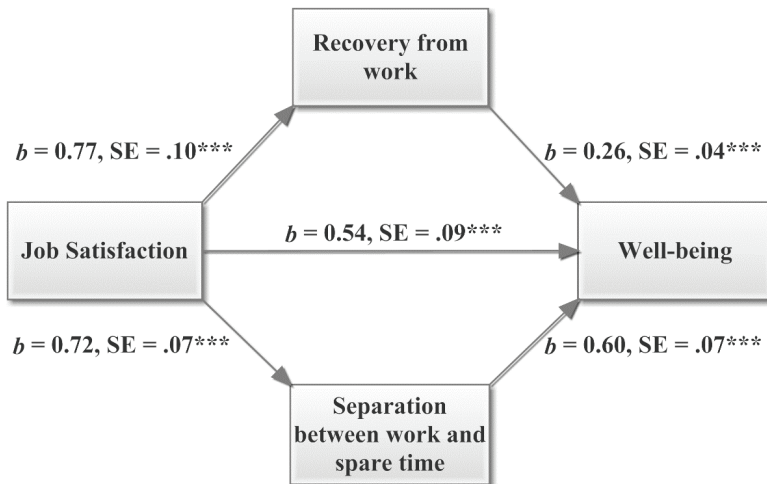*Figure 1.* Coefficients for the indirect and direct paths of the mediation analysis with well-being as outcome variable (****p* < .001).

The bootstrapping for indirect effects showed that the total indirect effect (−.369 *CI* [−.452, −.296]) as well as the indirect effect through separation between work and spare time (−.316 *CI* [−.397, −.257]) and recovery from work (−.054 *CI*

Table 3

Subjective well-being (WHO-5) dichotomized into: poor (0–50) and good (51–100) (N = 396)

Dimensions	Scale	Poor N=157	Good N=239	P*
Sociodemographic and lifestyle factors				
Physical activity, mean (*SD*)	1–5	2.53(1.03)	2.72(1.04)	.069[b]
Self-rated health, mean (*SD*)	0–100	46.8 (19.8)	66.4 (18.1)	<.001[b]
Sleep quality, mean (*SD*)	1–4[a]	2.6 (0.9)	1.9 (0.8)	<.001[b]
Health complaints, during the last month (³ 3)	1–4[a]			
Heart palpitations and discomfort (e.g., chest pressure), n (%)		32 (20.1)	18 (7.6)	<.001[b]
Sensitivity to light and noise, n (%)		84 (52.8)	78 (32.9)	<.001[b]
Impaired short-term memory, n (%)		92 (57.9)	55 (23.2)	<.001[b]
Impaired concentration or confusion, n (%)		85 (53.5)	38 (16.0)	<.001[b]
Dizziness, anxiety, or worry; n (%)		60 (37.5)	19 (8.0)	<.001[b]
Severe fatigue/lack of energy, even after resting, n (%)		91 (57.2)	25 (10.5)	<.001[b]
Impatience, n (%)		73 (45.9)	29 (12.2)	<.001[b]
Losing your temper (becoming irritated) over small things, n (%)		64 (40.3)	24 (10.1)	<.001[b]
Easily offended (e.g., close to tears), n (%)		51 (32.1)	15 (6.3)	<.001[b]
Feelings of hopelessness or powerlessness, n (%)		69 (43.4)	16 (6.8)	<.001[b]
Not able to take initiative, n (%)		50 (31.4	12 (5.1)	<.001[b]
Separation between work and spare time, mean (*SD*)	1–4	2.9 (0.53)	2.1 (0.7)	<.001[b]
Recovery from work (³ 3), *n* (%)	0–4	93 (58.5)	40 (16.9)	<.001[b]
Estimation of work ability, mean (*SD*)	1–3	2.57(0.57)	2.87(0.42)	<.001[b]
Sick leave, mean (*SD*)	1–5	3.96(0.75)	4.22(0.72)	.001[b]
Occupational factors				
Seniority, years worked; mean (*SD*)		15.5 (9.7)	18.5 (11.9)	.051[b]
Present employer, years; mean (*SD*)		7.8 (7.8)	9.6 (8.8)	.049[b]
School years taught				.180[c]
F-6 (6–12 year-olds), *n* (%)		76 (50.7)	130 (59.6)	
7–9 (13–15 year-olds), *n* (%)		74 (49.3)	88 (40.4)	
Job satisfaction, mean (*SD*)	1–4	2.5 (0.5)	2.9 (0.4)	<.001[b]
Quantitative demands, mean (*SD*)	0–5[a]	3.7 (0.6)	3.2 (0.7)	<.001[b]
Physical work environment, mean (*SD*)	1–5	2.8 (0.7)	2.4 (0.8)	<.001[b]
Role clarity, mean (*SD*)	1–4	2.8 (0.5)	3.1 (0.5)	<.001[b]
Collegial communication, mean (*SD*)	0–4	2.8 (0.7)	3.3 (0.6)	<.001[b]
Workplace communication climate, mean (*SD*)	1–4	2.6 (0.5)	2.9 (0.5)	<.001[b]

Note: [a]*Higher scores indicate a less favorable situation.* [b]*Mann-Whitney U test,* [c]*Chi-Square test of independence (2-tailed).*

[−.103, −.015]) were significant. The overall model explained 55.7% of the variance in health complaints, while supporting mediation of job satisfaction, by separation between work and spare time, and recovery from work.
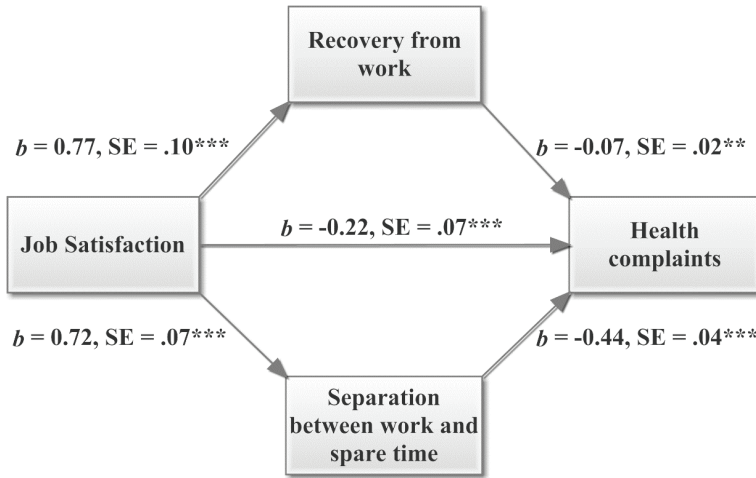
Figure 2. Coefficients for the indirect and direct paths of the mediation analysis with health complaints as outcome variable (***p < .001, **p < .01).

Discussion

This study reports on teachers' work-related health and working conditions, as well as the relationship between well-being and several key characteristics in teachers' work environment. The results give evidence of a moderate relationship between well-being and quantitative demands, role clarity, physical work environment, as well as collegial and workplace communication. There is moderate support for the two models used to analyze the importance of separation between work and spare time, as well as recovery from work, respectively, for the association between job satisfaction and the outcome variables — well-being and health complaints.

Subjective Well-Being

In this study, 40.2% of the teachers reported below the cut-off score of 50 recommended in the screening for depression (6.6% had a score below or equal to 20, which is used as a cut-off for major depression; 19.9% had a score below or equal to 32, which is used as a cut-off for minor depression) (Topp et al., 2015). Compared to results from the Eurofond Quality of Life survey, teachers in our study scored well below the mean for the Swedish working population (64.1) (Eurofond, 2013). Sisask et al. (2014), however, have reported on teachers' well-being in a large study sampling 158 randomly selected schools throughout Europe, using WHO-5, to be on average 51.2, thus slightly lower but in line with our results.

Physical Activity

An alarming 44% of the teachers in this study qualify as leading a sedentary life-style, as they indicated that they spend three hours or less per week exercising or performing fairly strenuous physical activities. Compared to national statistics regarding those with a post-secondary degree, this figure is almost twice as high (Folkhälsomyndigheten, 2016). Yet, from a European perspective, Sweden is among those countries where physical activity is comparatively low, as shown in a recent review by Loyen et al. (2016).

Self-Rated Health

The teachers in this study rated their general health well below the reference value for the working population (COPSOQ reference value for self-rated health = 66.0). In addition, no gender differences or declining self-rated health with age were observed in our study, contrary to results from the European ETUCE study (N = 5461) (Nübling, Vomstein, Haug, Nübling, & Adiwidjaja, 2011) and in a national health survey assessing 9,340 persons in Sweden (Folkhälsomyndigheten, 2016). Of interest are, in addition, results from two recent studies in Sweden assessing social workers (N = 723) and dental nurses (N = 616) (Nyqvist, Arnrup, & Berthelsen, 2016). Both studies report that the self-rated health is below the COPSOQ reference value, with an average value of 61.0 for dental nurses and 57.4 for social workers.

The absence of gender and age differences in this study are surprising and should be viewed in light of the fact that Sweden has high gender equality, while still having a gender-segregated labor market. University educated workers have been found to have a more equal division of tasks in the home, such as child-care and domestic work. For example, in a Swedish study by Molarius et al. (Molarius, Granström, Lindén-Boström, & Elo, 2014), domestic work was found to be a risk factor comparable to other major risk factors that correlate with self-rated ill-health in the population. Molarius found the PAR value (Population attributable risk) (Kleinbaum, Kupper, & Morgenstern, 1982) to be 21% for women and 12% for men. This could possibly explain the lack of gender differences in self-rated health for teachers as a group.

Sleep Quality

Core nocturnal diagnostic criteria for insomnia include problems with initiating sleep, maintaining sleep, and/or feeling restored when awakening. Given that around 30% of the adult population suffers one or more of these criteria of insomnia (Roth, 2007), the results showing a rate of insomnia symptoms (one or more symptoms of sleeping problems) of 61% is indeed troublesome. In the research literature, it is often reported that women have higher incidence rates of insomnia than men, and that insomnia increases with age for women (Johnson, 2006). It is worth noting that no gender or age differences were found in this study regarding the prevalence of insomnia symptoms. The results in this study, therefore, support a trend observed by Nordin et al. (2013) indicating that younger women have higher incident rates of insomnia than previously found, thus leveling out any generational differences. For men, an increase with age of problems with maintaining sleep and/or feeling restored when awakening is found.

Health Complaints

Sensitivity to noise, impaired short-term memory, impaired concentration or confusion were common health complaints among the teachers in this study. These symptoms were also reported as more problematic among women than among men. Regarding sensitivity to noise, the results are in line with national statistics reporting on noise-related occupational problems as common in the educational sector (Lärarnas Riksförbund, 2013). While this is an under-researched area, a recent study by Fredriksson et al. (2016) reported that women working as pre-school teachers have an increased risk of hearing-related disorders.

Taken together, the results are in line with previous research indicating teachers in Sweden to be highly affected by exhaustion, as measured in the Maslach Burnout inventory (Arvidsson et al., 2016). As pointed out by Persson et al. (Persson, Österberg, Viborg, Jönsson, & Tenenbaum, 2016), there is currently a lack of knowledge regarding symptomatology of Exhaustion Disorder, influencing the possibility for early detection. The development of diagnostic tools (e.g., LUCIE) (Persson et al., 2016) could aid in early detection and prevention of long periods of sick-leave and rehabilitation.

Separation Between Work and Spare Time, and Recovery from Work

The boundaries between work and spare time are particularly significant for teachers in Sweden, considering the work/time distribution previously mentioned. Separation between work and spare time had mostly to do with having enough energy to take care of private matters and being able to relax at home.

The way teachers' work is organized could potentially lead to difficulties for teachers to detach psychologically from work and consequently to experience diminished possibilities for recovery from work. Indeed, over one third of the teachers in this study reported that they did not feel that they got enough rest between work days. Although, there were no significant gender or age differences in the data, there was, as could be expected, evidence that women who had children residing at home reported less rest between work days, compared to women who did not have children residing at home. Furthermore, a national government work environment survey with over 10,000 people of the employed population aged 16–64 showed an overall 11% incidence rate of respondents who reported that they didn't feel that they got enough rest between work days. Stratified according to level of education, the corresponding incidence rate was 15%. The teachers in this study consequently reported the prevalence of not enough rest between work days to be more than twice as high as than the national statistic. The results are hence in line with results from a previous study on primary and lower secondary school teachers in Sweden, in which the lack of possibilities for recuperation from work was found to be associated with burnout (Arvidsson et al., 2016). The results may also be viewed in light of research on new ways of working (Demerouti, Derks, Lieke, & Bakker, 2014), which indicates that blurred boundaries between work and spare time may make it harder for employees to switch off from work and find the necessary time for recovery.

Estimation of Work Ability and Sick Leave

The majority (78%) of the teachers in this study estimated that they would still be able to work as teachers two years from now. Again, there were no observed gender or age differences. This can be compared with the study on dental nurses mentioned above, showing a prevalence of 83%. Like dental nurses, teachers showed high levels of stress-related symptoms (Nyqvist et al., 2016).

In this study, 30% of the respondents reported that they had no sick-days at all during the past 12 months, compared to 41% in a national population sample. Worth noting is that "Sick presence" (being present at work in spite of being sick) among teachers has previously been reported to be higher than in other professions (Aronsson & Gustafsson, 2002).

Health Variables in Relation to Work Environment Variables

In the multivariate analysis, separation between work and spare time was, together with recovery from work, found to partially mediate the relationship between, respectively, job satisfaction and well-being and health complaints. This suggests that separation between work and spare time, and possibilities for recovery from work, are important links between teachers' job satisfaction and their individual health and well-being. The boundary between work and spare time is, as mentioned previously, particularly significant for Swedish teachers, as during school terms they have a 45-hour work week, of which a substantial component is expected to be done at home. In detail, separation between work and spare time has, for the teachers in the study, to do mostly with having the energy to take care of private matters and being able to relax at home. Presumably, having to work from home will have these consequences. These results are in line with previous research on work-life balance pointing to the importance of recovery from work, but nevertheless signify an important aspect of teachers' working life in Sweden.

Conclusions

Teachers' perceptions of well-being were assessed with a comprehensive battery of health and work-related questions. The results give evidence of a moderate relationship between (a) well-being and (b) quantitative demands, role clarity, physical work environment, and collegial and workplace communication. There is also moderate support for the two models used to analyze the relative importance of separation between work and spare time, as well as recovery from work, for the association between job satisfaction and the outcome variables — well-being and health complaints. Especially disconcerting are results indicative of problems with teachers' lack of recovery between work days, and insufficient separation between work and spare time. The results confirm previous research pointing to teachers in Sweden as being a vulnerable occupational group.

Radically altering the demands of teaching may prove difficult. In light of this, teachers need to find strategies for setting boundaries between work and spare time, as well as finding time to recover from work. In addition, decision-makers should prioritize the development of school-anchored resources to counteract demands experienced by teachers today.

Limitations

A limitation of this study is that the research partnership with two municipalities was established through a broad call for interest and is therefore a volunteer sampling. This introduced potential bias, in that the researchers cannot be aware of why the research partner volunteers to participate. Another limitation is that only public schools were sampled. As an increasingly large proportion of teachers in Sweden work in independent schools, it is important that future studies direct their attention to work-related health and working conditions in these schools.

Research designs based on self-report measures are often criticized for introducing common method variance (Podsakoff, MacKenzie, & Podsakoff, 2012). This is an appropriate concern; on the other hand, self-report methods have shown to adequately assess people's perceptions of work and health, and are therefore valuable despite their limitations (Ashforth, 1985).

Taking into account the cross-sectional design of the study and that an appropriate temporal separation among the predictor, the mediators, and the outcomes can be difficult to achieve in a school setting due to fluctuations in workload over the school year and high turnover, it would, however, be beneficial to collect longitudinal data (Cole & Maxwell, 2003). As we only tested the mediating effect of two factors, future studies might also include other relevant factors.

Abbreviations

DSM, Diagnostic and Statistical Manual of Mental Disorders; ICD-10-SE, International Statistical Classification of Diseases and Related Health Problems — Tenth Revision, Swedish edition; WHO, World Health Organization.

Acknowledgements

References

Andersson, K. (1998). Epidemiological approach to indoor air problems. *Indoor Air, 8*(S4), 32–39. https://doi.org/10.1111/j.1600-0668.1998.tb00005.xAndersson, K. (1998). Epidemiological approach to indoor air problem

Arbetsmiljöverket. (2014a). *Arbetsmiljön 2013, The Work Environment 2013* (2014:3). Retrieved from https://www.av.se/globalassets/filer/statistik/arbetsmiljostatistik-arbetsmiljon-2013-rapport-2014-03.pdf

Arbetsmiljöverket. (2014b). *Arbetsorsakade besvär 2014. Work-related disorders 2014* (2014:4). Retrieved from https://www.av.se/globalassets/filer/statistik/arbetsmiljostatistik-arbetsorsakade-besvar-rapport-2014.pdf

Arbetsmiljöverket. (2016). *Arbetsorsakade besvär 2016. Work-related disorders 2016* (2016:3). Retrieved from https://www.av.se/globalassets/filer/statistik/arbetsorsakade-besvar-2016/arbetsmiljostatistik-arbetsorsakade-besvar-2016-rapport-2016-3.pdf

Aronsson, G., & Gustafsson, K. (2002). *Sjuknärvaro — förekomst och utvecklingstendenser.* (Arbete och Hälsa 2002:8). Retrieved from Stockholm: http://hdl.handle.net/2077/4285

Arvidsson, I., Håkansson, C., Karlson, B., Björk, J., & Persson, R. (2016). Burnout among Swedish school teachers — A cross-sectional analysis. *BMC Public Health, 16*(823), 1–11. https://doi.org/10.1186/s12889-016-3498-7

Ashforth, B. E. (1985). Climate formation: Issues and extensions. *Academy of Management Review, 10*(4), 837–847. https://doi.org/10.5465/amr.1985.4279106

Bech, P. (1999). Health-related quality of life measurements in the assessment of pain clinic results. *Acta Anaesthesiologica Scandinavica, 43*(9), 893–896. https://doi.org/10.1034/j.1399-6576.1999.430906.x

Bech, P., Olsen, L. R., Kjoller, M., & Rasmussen, N. K. (2003). Measuring well-being rather than the absence of distress symptoms: A comparison of the SF-36 Mental Health subscale and the WHO-Five well-being scale. *International Journal of Methods in Psychiatric Research, 12*(2), 85–91. https://doi.org/10.1002/mpr.145

Byrne, B.M. (1999). The nomological network of teacher burnout: A literature review and empirically validated model. In R. Vandenberghe & A. M. Huberman (Eds.), *Understanding and preventing teacher burnout* (pp. 15–37). Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511527784.003

Chida, Y., & Steptoe, A. (2008). Positive psychological well-being and mortality: A quantitative review of prospective observational studies. *Psychosomatic Medicine, 70*(7), 741–756. https://doi.org/10.1097/PSY.0b013e31818105ba

Cole, D.A., & Maxwell, S.E. (2003). Testing mediational models with longitudinal data: Questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology, 112*(4), 558–577. https://doi.org/10.1037/0021-843X.112.4.558

Cortina, L.M., Magley, V.J., Williams, J.H., & Langhout, R.D. (2001). Incivility in the workplace: incidence and impact. *Journal of Occupational Health Psychology, 6*(1), 64–80. https://doi.org/10.1037//1076-8998.6.1.64

Day, C., Stobart, G., Sammons, P., Kington, A., Gu, Q., Smees, R., & Mujtaba, T. (2006). *Variations in teachers' work, lives and effectiveness* (743). https://doi.org/10.1037/e615332007-001

Demerouti, E., Derks, D., Lieke, L., & Bakker, A.B. (2014). New ways of working: Impact on working conditions, work–family balance, and well-being. In C. Korunka & P. Hoonakker (Eds.), *The impact of ICT on quality of working life* (pp. 123–141). Dordrecht: Springer. https://doi.org/10.1007/978-94-017-8854-0_8

Diener, E., Heintzelman, S.J., Kushlev, K., Tay, L., Wirtz, D., Lutes, L.D., & Oishi, S. (2017). Findings all psychologists should know from the new science on subjective well-being. *Canadian Psychology/psychologie canadienne, 58*(2), 87–104. https://doi.org/10.1037/cap0000063

Diener, E., Oishi, S., & Lucas, R.E. (2003). Personality, culture, and subjective well-being: Emotional and cognitive evaluations of life. *Annual Review of Psychology, 54*, 403–425. https://doi.org/10.1146/annurev.psych.54.101601.145056

Dollard, M.F., & Bakker, A.B. (2010). Psychosocial safety climate as a precursor to conducive work environments, psychological health problems, and employee engagement. *Journal of Occupational and Organizational Psychology, 83*(3), 579–599. https://doi.org/10.1348/096317909X470690

Eriksson, I., Undén, A.-L., & Elofsson, S. (2001). Self-rated health. Comparisons between three different measures. Results from a population study. *International Journal of Epidemiology, 30*(2), 326–333. https://doi.org/10.1093/ije/30.2.326

Eurofond. (2013). *Third European Quality of Life Survey — Quality of life in Europe: Subjective well-being*. Retrieved from Luxembourg: https://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?referer=http://www.google.se/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=0ahUKEwiJncDB5-nZAhXDfiwKHUtaAyoQFgg0MAM&url=http%3A%2F%2Fdigitalcommons.ilr.cornell.edu%2Fcgi%2Fviewcontent.cgi%3Farticle%3D1318%26context%3Dintl&usg=AOvVaw33n5-CpKFUrKBHa74AhoxA&httpsredir=1&article=1318&context=intl

Folkhälsomyndigheten. (2016). *Folkhälsan i sverige 2016, årlig rapportering*. Retrieved from https://www.folkhalsomyndigheten.se/contentassets/cc89748e004743c39ff4c03fec24c570/folkhalsan-i-sverige-2016-16005.pdf

Fredriksson, S., Kim, J.-L., Torén, K., Kähäri, K., Magnusson, L., & Waye, K.P. (2016). Preschool teachers have an increased risk of hearing-related symptoms and report more occupational noise exposure compared to randomly selected women. *Occupational and Environmental Medicine, 73*, A191. https://doi.org/10.1136/oemed-2016-103951.525

Fromm, J., & Hagström, U. (2011). *Att sova med jobbet: tjänstemännens arbetsvillkor*. Retrieved from https://www.tco.se/globalassets/sovamedjobbet.pdf

Försäkringskassan. (2014). *Sjukfrånvaro i psykiska diagnoser. En studie av Sveriges befolkning 16-64 år*. Retrieved from http://www.forskasverige.se/wp-content/uploads/Sjukfranvaro-Psykiska-Diagnoser-2014.pdf

Hakanen, J.J., & Schaufeli, W.B. (2012). Do burnout and work engagement predict depressive symptoms and life satisfaction? A three-wave seven-year prospective study. *Journal of Affective Disorders, 141*(2), 415–424. https://doi.org/10.1016/j.jad.2012.02.043

Hall, T., Krahn, G. L., Horner-Johnson, W., & Lamb, G. (2011). Examining functional content in widely used Health-Related Quality of Life scales. *Rehabilitation Psychology, 56*(2), 94–99. https://doi.org/10.1037/a0023054

Hayes, A.F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: The Guilford Press.

Hoaglin, D.C., & Iglewicz, B. (1987). Fine-tuning some resistant rules for outlier labeling. *Journal of the American Statistical Association, 82*(400), 1147–1149. https://doi.org/10.1080/01621459.1987.10478551

Johnson, E.O. (2006). Epidemiology of insomnia: From adolescence to old age. *Sleep Medicine Clinics, 1*(3), 305–317. https://doi.org/10.1016/j.jsmc.2006.06.006

Judge, T.A., Thoresen, C.J., Bono, J.E., & Patton, G.K. (2001). The job satisfaction–job performance relationship: A qualitative and quantitative review. *Psychological Bulletin, 127*(3), 376–407. https://doi.org/10.1037/0033-2909.127.3.376

Karlson, B., Jönsson, P., Pålsson, B., Åbjörnsson, G., Malmberg, B., Larsson, B., & Österberg, K. (2010). Return to work after a workplace-oriented intervention for patients on sick-leave for burnout — a prospective controlled study. *BMC Public Health, 10*(301), 1–10. https://doi.org/10.1186/1471-2458-10-301

Kleinbaum, D.G., Kupper, L.L., & Morgenstern, H. (1982). *Epidemiologic research: principles and quantitative methods*. New York, NY: John Wiley & Sons.

Kloep, M., & Tarifa, F. (1994). Working conditions, work style, and job satisfaction among Albanian teachers. *International Review of Education, 40*(2), 159–172. https://doi.org/10.1007/BF01103691

Kristensen, T.S., Hannerz, H., Høgh, A., & Borg, V. (2005). The Copenhagen Psychosocial Questionnaire — a tool for the assessment and improvement of the psychosocial work environment. *Scandinavian Journal of Work, Environment and Health, 31*(6), 438–449. https://doi.org/10.5271/sjweh.948

Lärarnas Riksförbund, L. (2013). *Lärarnas Riksförbunds arbetsmiljörapport*. Retrieved from https://www.lr.se/download/18.1171153f1407143378d5a64/1378450760421/Arbetsmilj%C3%B6rapport_sept2013.pdf

LeBlanc, M., Mérette, C., Savard, J., Ivers, H., Baillargeon, L., & Morin, C.M. (2009). Incidence and risk factors of insomnia in a population-based sample. *Sleep, 32*(8), 1027–1037. https://doi.org/10.1093/sleep/32.8.1027

Linton, S. J., Kecklund, G., Franklin, K.A., Leissner, L. C., Sivertsen, B., Lindberg, E., … Hall, C. (2015). The effect of the work environment on future sleep disturbances: A systematic review. *Sleep Medicine Reviews, 23*, 10–19. https://doi.org/10.1016/j.smrv.2014.10.010

Loeb, S., Darling-Hammond, L., & Luczak, J. (2005). How teaching conditions predict teacher turnover in California schools. *Peabody Journal of Education, 80*(3), 44–70. https://doi.org/10.1207/s15327930pje8003_4

Loyen, A., Van Hecke, L., Verloigne, M., Hendriksen, I., Lakerveld, J., Steene-Johannessen, J., … Ekelund, U. (2016). Variation in population levels of physical activity in European adults according to cross-European studies: A systematic literature review within DEDIPAC. *International Journal of Behavioral Nutrition and Physical Activity, 13*(72), 1–18. https://doi.org/10.1186/s12966-016-0398-2

Lundström, U. (2015). Teacher autonomy in the era of New Public Management. *Nordic Journal of Studies in Educational Policy, 2015*(2), 73–85. https://doi.org/10.3402/nstep.v1.28144

McDowell, I. (2010). Measures of self-perceived well-being. *Journal of Psychosomatic Research, 69*(1), 69–79. https://doi.org/10.1016/j.jpsychores.2009.07.002

Miller, N. (2002). Insider change leadership in schools. *International Journal of Leadership in Education, 5*(4), 343–360. https://doi.org/10.1080/13603120210141951

Molarius, A., Granström, F., Lindén-Boström, M., & Elo, S. (2014). Domestic work and self-rated health among women and men aged 25–64 years: Results from a population-based survey in Sweden. *Scandinavian Journal of Social Medicine, 42*(1), 52–59. https://doi.org/10.1177/1403494813503056

Nordin, M., Åkerstedt, T., & Nordin, S. (2013). Psychometric evaluation and normative data for the Karolinska Sleep Questionnaire. *Sleep and Biological Rhythms, 11*(4), 216–226. https://doi.org/10.1111/sbr.12024

Nübling, M., Vomstein, M., Haug, A., Nübling, T., & Adiwidjaja, A. (2011). *European-wide survey on teachers work related stress-assessment, comparison and evaluation of the impact of psychosocial hazards on teachers at their workplace*. Retrieved from https://csee-etuce.org/images/attachments/WRS_europe_191211_final2.pdf

Nyqvist, E., Arnrup, K., & Berthelsen, H. (2016). Belastningssymtom och sviktande arbetsförmåga. *Tandläkartidningen, 14*, 54–61.

Ohayon, M. M., & Bader, G. (2010). Prevalence and correlates of insomnia in the Swedish population aged 19–75 years. *Sleep Medicine, 11*(10), 980–986. https://doi.org/10.1016/j.sleep.2010.07.012

Persson, R., Österberg, K., Viborg, N., Jönsson, P., & Tenenbaum, A. (2016). The Lund University Checklist for Incipient Exhaustion — a cross–sectional comparison of a new instrument with similar contemporary tools. *BMC Public Health, 16*(350), 1–12. https://doi.org/10.1186/s12889-016-3001-5

Podsakoff, P.M., MacKenzie, S.B., & Podsakoff, N.P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology, 63*, 539–569. https://doi.org/10.1146/annurev-psych-120710-100452

Richter, A., Näswall, K., Lindfors, P., & Sverke, M. (2015). Job insecurity and work–family conflict in teachers in Sweden: Examining their relations with longitudinal cross-lagged modeling. *PsyCh Journal, 4*(2), 98–111. https://doi.org/10.1002/pchj.88

Rizzo, J.R., House, R.J., & Lirtzman, S.I. (1970). Role conflict and ambiguity in complex organizations. *Administrative Science Quarterly, 15*(2), 150–163. https://doi.org/10.2307/2391486

Roth, T. (2007). Insomnia: definition, prevalence, etiology, and consequences. *Journal of Clinical Sleep Medicine, 3*(5 Suppl), S7–10. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/17824495 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1978319/pdf/jcsm.3.5.s7.pdf

Ryff, C.D., & Singer, B. (1998). The contours of positive human health. *Psychological Inquiry, 9*(1), 1–28. https://doi.org/10.1207/s15327965pli0901_1

Salovey, P., Rothman, A. J., Detweiler, J. B., & Steward, W. T. (2000). Emotional states and physical health. *American Psychologist, 55*(1), 110–121. https://doi.org/10.1037//0003-066X.55.1.110

SBU. (2014). *Arbetsmiljöns betydelse för symtom på depression och utmattningssyndrom. En systematisk litteraturöversikt* (223). Retrieved from Stockholm: http://www.sbu.se/contentassets/800ad7aecf9146c795d3a89c7a957048/arbetsmiljo_depression_2014.pdf

Schad, E. (2019a). No time to talk! Teachers' perceptions of organizational communication: Context and climate. *Educational Management Administration & Leadership, 47*(3), 421–442. https://doi.org/10.1177/1741143217739358

Schad, E. (2019b). Lacking structures of communication for teachers in Sweden, a focus group study. *Lund Psychological Reports, 9*(2), 1–20.

Schaufeli, W. B., Bakker, A. B., & Van Rhenen, W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior, 30*(7), 893–917. https://doi.org/10.1002/job.595

Sisask, M., Värnik, P., Värnik, A., Apter, A., Balazs, J., Balint, M., … Cosman, D. (2014). Teacher satisfaction with school and psychological well-being affects their readiness to help children with mental health problems. *Health Education Journal, 73*(4), 382–393. https://doi.org/10.1177/0017896913485742

Skaalvik, E.M., & Skaalvik, S. (2009). Does school context matter? Relations with teacher burnout and job satisfaction. *Teaching and Teacher Education, 25*(3), 518–524. https://doi.org/10.1016/j.tate.2008.12.006

Socialstyrelsen. (2003). *Utmattningssyndrom. Stressrelaterad psykisk ohälsa*. Retrieved from Stockholm https://www.socialstyrelsen.se/Lists/Artikelkatalog/Attachments/10723/2003-123-18_200312319.pdf

Taloyan, M., Leineweber, C., Hyde, M., & Westerlund, H. (2015). Self-rated health amongst male and female employees in Sweden: A nationally representative study. *International Archives of Occupational and Environmental Health, 88*(7), 849–859. https://doi.org/10.1007/s00420-014-1014-x

Topp, C.W., Østergaard, S.D., Søndergaard, S., & Bech, P. (2015). The WHO-5 Well-Being Index: A systematic review of the literature. *Psychotherapy and Psychosomatics, 84*(3), 167–176. https://doi.org/10.1159/000376585

Toumi, K., Illmarinen, J., Jahkola, A., Katajarinne, L., & Tulkki, A. (1998). *Work Ability Index. Swedish version* (2nd ed.). Helsinki: Finnish Institute of Occupational Health.

Travers, C. (2017). Current knowledge on the nature, prevalence, sources and potential impact of teacher stress. In T. McIntyre, S. McIntyre, & D. Francis (Eds.), *Educator stress. aligning perspectives on health, safety and well-being* (pp. 23–54). Cham: Springer. https://doi.org/10.1007/978-3-319-53053-6_2

Törnroos, M., Hakulinen, C., Hintsanen, M., Puttonen, S., Hintsa, T., Pulkki-Råback, L., … Keltikangas-Järvinen, L. (2017). Reciprocal relationships between psychosocial work characteristics and sleep problems: A two-wave study. *Work and Stress, 31*(1), 63–81. https://doi.org/10.1080/02678373.2017.1297968

Walsh, J.K., Coulouvrat, C., Hajak, G., Lakoma, M. D., Petukhova, M., Roth, T., … Stephenson, J. J. (2011). Nighttime insomnia symptoms and perceived health in the America Insomnia Survey (AIS). *Sleep, 34*(8), 997–1011. https://doi.org/10.5665/SLEEP.1150

Warburton, D. E., Nicol, C. W., & Bredin, S. S. (2006). Health benefits of physical activity: The evidence. *Canadian Medical Association Journal, 174*(6), 801–809. https://doi.org/10.1503/cmaj.051351

WHO. (1948). *Constitution of the World Health Organization*. Geneva: World Health Organization.

WHO. (2010). *Global recommendations on physical activity for health*. Retrieved from http://apps.who.int/iris/bitstream/10665/44399/1/9789241599979_eng.pdf

Åkerstedt, T., Garefelt, J., Richter, A., Westerlund, H., Magnusson Hanson, L. L., Sverke, M., & Kecklund, G. (2015). Work and sleep — A prospective study of psychosocial work factors, physical work factors, and work scheduling. *Sleep, 38*(7), 1129–1136. https://doi.org/10.5665/sleep.4828

Perception of Teacher Support by Students in Vocational Education and Its Associations with Career Adaptability and Other Variables

Bohumíra Lazarová*, Petr Hlaďo, Lenka Hloušková

Department of Educational Sciences, Faculty of Arts, Masaryk University, Brno, Czech Republic

*Corresponding author. E-mail: lazarova@phil.muni.cz

Background. Children and adolescents currently spend a great deal of time at school and teachers are viewed as a source of social support in different areas of their personal development, such as their career adaptability.

Objective. To provide insight into the way students in secondary vocational education perceive teacher support and to explore the association between perceived teacher support, career adaptability, and other demographic and academic variables.

Design. A questionnaire battery with two main tools, the Teacher Support Scale and the Career Adapt-Abilities Scale, was the data collection method. Subjects were students in the last year of full-time study at public secondary vocational schools and vocational upper-secondary schools. The sample comprised 3,028 participants aged 18–26.

Result. Students perceived the support of their teachers quite positively, with the difference between boys and girls not being statistically significant. The satisfaction of the student with the field of study, academic performance, and satisfaction with the academic success rate predict the perception of teacher support. The level of perceived teacher support positively correlates with students' overall career adaptability, as well as with all the dimensions of career adaptability, and is also a significant predictor.

Conclusion. Both key concepts, teacher support and career adaptability, have the potential to attract the attention of psychologists working in the educational system.

Keywords: teacher support; career adaptability; adolescents; vocational schools; school psychology

Introduction

Children and adolescents currently spend a great deal of time at school and therefore there is no doubt that teachers are viewed as a source of social support, attracting the attention of a number of researchers across scientific disciplines. Respecting teacher support, it is useful to distinguish among provided, perceived, offered, and sought social support (Malecki & Demaray, 2002). We have focused in this study on perceived teacher support.

While research on teacher support remains of rather marginal interest in the Czech Republic, the phenomenon of teacher support abroad has become a relatively frequent research topic, especially in quantitative research (Brewster & Bowen, 2004; Caleon et al., 2017; Cox & Williams, 2008; Dietrich, Dicke, Kracke, & Noack, 2015; Filak & Sheldon, 2008; Guess & McCane-Bowling, 2016; Klem & Connell, 2004; Mantzicopoulos & Neuharth-Pritchett, 2003; McNeely & Falci, 2004; Perry, Liu, & Pabian, 2010; Reddy, Rhodes, & Mulhall, 2003; Sakiz, Pape, & Hoy, 2012; Suldo et al., 2009; Torsheim, Wold, & Samdal, 2000; Zhang, Yuen, & Chen, 2018, and others).

In this study, we introduce the findings of more comprehensively conceived quantitative research primarily focused on the exploration of career adaptability of adolescents, in particular students at vocational upper-secondary schools. We select and offer data related to the relationships between career adaptability and support that students perceive in connection with teachers. First of all, we frame the concept of teacher support in a broader theoretical and definition context, introduce the methodology of our research and the nature of the research tools used. In the following section, we describe, using the specific data, how specific groups of students perceive support from teachers and what relationship this perceived support has to some school-related variables and the career adaptability of the students.

Definition of Teacher Support

The definition of teacher support is not entirely uniform and this concept is understood differently in (not only) psychological theories. Teacher support, specified as the interaction between teachers and students, has long been examined in relation to the results of students' study, and thus completes the picture of effective and quality teaching. Teachers are no longer merely teaching experts, however, who provide academic support to students. They are seen as "natural mentors" (Allee-Smith, Im, Hughes, & Clemens, 2018), "first line" career counsellors (Schiersmann et al., 2012), and are often associated with the role of the "caring person" (Caen, 2011). In this context, it is not surprising that the teacher's ability or skill in providing support to students and creating positive relationships with them is included in the lists of teacher competences and becomes a topic of professional development.

The definition of teacher support may be associated with Tardy's model of social support (Tardy, 1985), which defines the support of teachers as a series of strategies utilized by those teachers. Support may be observed in the emotional, instrumental (physical assistance), information and valuation, and appraisal areas (cf. Malecki & Demaray, 2003). Zhang and Chen Yuen (2018) conclude that teacher support may also be seen in relation to career development from the perspective of

social support, which is based on social relations and close interpersonal interactions between students and teachers. This kind of support may not only lead to the fulfilment of specific goals, but may also contribute to solving individual problems, strengthening overall well-being, feeling safe, and good mental health.

Teacher support may also be seen as a natural part of the school environment, or rather as one of the key dimensions of the class and school climate (Cox & Williams, 2008; Ryan & Patrick, 2001). In connection with this approach, ecological systems theories pointing out the importance of the school as an eco-system (Bronfenbrenner, 1979) are emphasized, as well as the social setting theory that follows from Bronfenbrenner's theory (Tsen & Seidman, 2007). Both theories accentuate the creation of supportive relationships between the actors of the school environment as part of the social processes that take place in schools "naturally". The social setting theory implies that if we want to achieve educational change in the broad sense of the word, relationships among people at school, including the relationships between teachers and students, have to be changed as well.

Ryan and Deci's self-determination theory, which is mentioned quite often in relation to schoolwork and career choice, may be stated as another theoretical basis of teacher support (Deci & Ryan, 2000). According to this theory, the purpose of teacher support is to develop the students' intrinsic motivation by promoting their autonomy, respecting their interests, and promoting their creativity and effort to succeed (cf. Filak & Sheldon, 2008; Ryan & Patrick, 2001, and others). Such support is related to developing students' abilities to take a leading role (to develop self-regulation), to develop self-confidence and self-esteem, and to a sense of self-efficacy, responsibility, and persistence (Klem & Connell, 2004; Metheny, McWhirter, & O'Neil, 2008; Mitchell & DellaMattera, 2010; Zhang, Yuen, & Chen, 2018).

Rogers' humanistic approach to person-centered counselling/therapy teaching, which emphasizes the helping relationship in all areas of work with people and stimulates the individual potential for self-development (Rogers, 1958), is also worth mentioning. In this context, the relationship between the teacher and student is considered a key pillar of any support, regardless of its objectives.

Measurement of Teacher Support and Its Behavioural Image

Teacher support is usually examined through subjective assessment by students using a variety of quantitative tools. Unlike instruments measuring the perceived level of parent support, the tools assessing the perceived level of teacher support have one disadvantage: While the subject providing the support is clearly defined in the case of parents (e.g., Hlaďo & Ježek, 2018), it is not always clear which of the teachers is involved on the basis of the questionnaires aimed at evaluating teacher support. In fact, there are usually several teachers taking turns in the class, and the respondent may respond or may even have to respond in relation either to one particular teacher (items like "this teacher of mine…", "my teacher…"), or to all the teachers (items like "my teachers…", "most teachers …", "our teachers…", "the majority of teachers…"). In the first case, it is an "evaluation" of the work of a particular teacher and research may then be applied to, for example, teachers of different subjects, comparing their support (Dietrich et al., 2015), while in the second case, the supportive character of the overall climate in a class or school is assessed.

Researchers use complex tools either to measure (a) the climate of a class or school where teacher support plays an important role, or (b) perceived social support where the teacher is only one of the potential people providing support to individuals in different life situations or phases. Metheny, McWhirter, and O'Neil (2008) report that they found 16 tools focused on the perception of teacher support, of which only 4 were stand-alone tools and 12 were subscales or factors of more complex tools. They consequently often contained a small number of items, which may be seen as a limiting factor in terms of validity.

The following tools may be mentioned as examples of comprehensively conceived tools focused on social climate: the Classroom Environment Scale (CES) (Moos & Trickett, 1974), The School Environment Measure (cf. Wang & Eccles, 2013), the Research Assessment Package for Schools (RAPS) (1998), and the Learning Climate Questionnaire (LCQ) (Williams & Deci, 1996). Tools focused on social support include: the Social Support Questionnaire (Sarason, Levine, Basham, & Sarason, 1983), the Social Support Scale for Children and Adolescents (SSSCA) (Harter, 1985), the Child and Adolescent Social Support Scale (CASSS) (Malecki & Demaray, 2003), the Classroom Life Measure (Johnson & Johnson, 1983), and the Teacher and Classmate Support Scale (TCMS) (cf. Wold, Aarø, & Smith, 1994).

Scales directly designed to measure teacher support either have a general purpose or identify a specific type of support (learning, motivation, autonomy, career development, relationship to the teacher, etc.). It is worth mentioning, for example, Young Children's Appraisals of Teacher Support (Y-CATS) (Mantzicopoulos & Neuharth-Pritchett, 2003), Teacher Treatment Inventory (Weinstein, Marshall, Sharp, & Botkin, 1987), Teacher Support (Lapan, Tucker, Se-Kang, & Kosiulek, 2003), Teacher Support Measurement (Farmer, 1985), and the like.

According to Zhang, Yuen, and Chen (2018, p. 127), the Teacher Support Scale (TSS) by McWhirter in the modification of Metheny, McWhirter, and O'Neil (2008) – which has been used in our research — is the most frequently used tool in career decision support studies (more about this tool is provided in the next section).

The definitions of teacher support, as well as the dimensions of the tools for its measurement, reflect teacher behavior that is perceived as supportive. It is almost impossible, however, to answer the question as to what kind of behavior or targeted practices the teacher actually uses to support the students. It seems that the factors associated with supportive behavior of teachers may be classified as, for example, concrete help in problems or achieving goals, help in planning for the future (Harter, 1985); care (involvement with the student), which includes the interest or concern of the teacher about the student, including the anticipation of potential problems (Harter, 1985; Klem & Connell, 2004); fairness; providing some structure or rules, including the formulation of clear expectations (fair, positive expectation) (Harter, 1985; Klem & Connell, 2004; Metheny, McWhirter, & O'Neil, 2008; RAPS, 1998); direct negotiation, engagement, or accessibility — teacher activity and availability are expected here (treats, investment, accessible) (Harter, 1985; RAPS 1998; Metheny, McWhirter, & O'Neil, 2008), positive perception of the student (positive regard), which expresses optimism, confidence and relationship (Metheny, McWhirter, & O'Neil, 2008), and warmth and listening (Mantzicopoulos & Neuharth-Pritchett, 2003).

Similarly, Ryan and Patrick (2001), based on delimitation chosen by various authors, summarize that the definitions of teacher support operate with concepts such as caring, friendliness, understanding, dedication, and dependability.

It is clear that the behavioral image of the provided support reflects the personal characteristics of the teachers. Although teachers often try to provide support through targeted action, the relationship between the teacher and student, which is difficult to capture using the tools designed to measure teacher support, is the key determinant of effectiveness.

Effects of Teacher Support

Although teacher support is defined in various ways, researchers agree that it is a crucial factor that affects emotional development; that it is related to the experience and behavior of students (Brewster & Bowen, 2004; Cox & Williams, 2008; Dietrich et al., 2015; Filak & Sheldon, 2008; Guess & McCane-Bowling, 2016; Reddy, Rhodes, & Mulhall, 2003; Suldo et al., 2009); and that it influences student motivation and academic performance (Klem & Connell, 2004; Perry, Liu, & Pabian, 2010) as well as career decisions and career development of students (Metheny, McWhirter, & O'Neil, 2008).

With respect to the above-mentioned efforts to differentiate the types of teacher support, Zhang, Yuen & Chen (2018) agree that it may be difficult to distinguish specifically focused support (e.g., on career) and generally focused support. Research has shown that any effective teacher support may have a direct or indirect impact on class or school climate, increases encouragement of students, school engagement, connectedness to school, affinity for school, sense of belonging to the school, interest in education, as well as well-being and mental health (Allee-Smith et al., 2018; Brewster & Bowen, 2004; Filak & Sheldon, 2008; Guess & McCane-Bowling, 2016; Klem & Connell, 2004; McNeely & Falci, 2004; Perry, Liu, & Pabian, 2010; Ryan & Patrick, 2001; Sakiz, Pape, & Hoy, 2018; Suldo et al., 2009; Wang, & Eccles, 2013).

Perceived teacher support has a demonstrable relationship to motivation of student performance and academic engagement (Cooper, 2014; Ruzek et al., 2016). If students in a class perceive the support of their teacher, they show more interest and enjoyment of their schoolwork, more self-esteem, and higher expectations of school success (Ryan & Patrik, 2001). There is no research consensus, however, about the impact of teacher support on the students' academic results (Caleon et al., 2017; Klem & Connell, 2004; Ryan & Patrick, 2001). While there is no doubt about the positive impact of teacher support, it is impossible to unequivocally prove specific benefits from a certain type of supportive teacher behavior. There are always many intervening variables that play a role. It is clear, however, that teacher support based on a good relationship has synergistic effects and is beneficial in many ways.

The effects of support are in some cases monitored for selected groups of students. The authors of such research (e.g., Brewster & Bowen, 2004; Caleon et al., 2017; McNeely & Falci, 2004; Perry, Liu, & Pabian, 2010) intentionally focus on providing support to at-risk or disadvantaged groups of students (ethnic differences, school failure, learning disabilities, problematic behavior or emotions, maladaptation, etc.). The importance of the relationship between teachers and students

and the supportive effect of teachers increases especially in cases where good parental support is lacking (Perry, Liu, & Pabian, 2010; Sakiz et al., 2012). At the same time, however, some cognitive and behavioral stereotypes of teachers work against certain groups of students who are actually given less support, and students may also perceive it in such a way. Students whose teachers expect more from them are believed to benefit from more teacher support (Caleon et al., 2017). Adolescent students who are at risk of losing motivation and leaving school early are considered one of the risk groups. Non-parental adults (among them teachers) are important for adolescents as role models and sources of support, for example, in the area of career decision-making (Metheny, McWhirter, & O'Neil, 2008; Perry, Liu, & Pabian, 2010).

Career Adaptability

Current research in the field of vocational psychology emphasizes the need to explore more deeply the quality of relationships between people in connection with career development (Metheny, McWhirter, & O'Neil, 2008). Some studies have examined the impact of teacher support on career planning (Perry, Liu, & Pabian, 2010) and self-efficacy in career decision-making (Di Fabio & Kenny, 2015). It has become a challenge for us to explore the relationship between perceived teacher support and career adaptability, which is a concept that reflects the resources of a person for career management and suggests the ability of an individual to cope with current and anticipated tasks, transitions, and traumas in vocational roles (Savickas & Porfeli, 2012).

The concept of career adaptability is based on the career construction theory (Savickas, 2005) and includes four dimensions: the *concern* of individuals about their future, including planning; *control* over their own lives, the ability to be active in such matters and make decisions; *curiosity* about career possibilities and alternatives; *confidence* in achieving career goals, dealing with obstacles and challenges in their careers. From this perspective, career adaptability is a meta-competence which may make it easier for individuals to move from education to the labor market and deal with unexpected or planned career changes.

Kenny and Bledsoe (2005) examined teacher support along with parental support and support of close friends in relation to upper-secondary-school students' career adaptability and concluded that the emotional support of family, teachers, and close friends, when assessed together, makes a significant contribution to all four dimensions of career adaptability. Students who perceived greater support manifested higher levels of career adaptability. The authors of the study also indicated that different sources of social support contributed differently to individual dimensions of career adaptability. It is therefore apparent that targeted support from different sources is related to career adaptability.

Research Methodology

Study Objectives

The theoretical overview shows that a great deal of attention is paid abroad to research on teacher support. It is primarily studied, however, in relation to students

of lower-secondary education. In the Czech environment, social support by teachers is a neglected topic. Therefore, the first objective of the present study is to describe how teacher support is perceived by students of vocational upper-secondary schools and whether and how perceived teacher support is related to the selected characteristics of students.

As can be seen from the research findings, teacher support may have a positive impact on entire school classes as well as various aspects of the life of adolescents (not only at school): mental health, school performance, self-esteem, or career decision. In our broadly conceived research, we focused not only on the relationship between career adaptability and teacher support, but we also sought to identify other potential impacts of perceived teacher support that have not hitherto been at the center of research attention. We thought that there could also be a relationship between perceived teacher support, the method of completing secondary school education, satisfaction with the field of study, etc. Due to the absence of current knowledge about the specific impact of teacher support on the career development of students, the second objective of this study was to identify the relationship between teacher support and career adaptability of students in the last years of upper-secondary schools, students who are currently facing choices about further education and a career path.

Participants and Procedures

The study presents partial findings from the first wave of data collection within the framework of longitudinal research (2018–2020). Students in the last year of full-time study at public vocational upper-secondary schools in the South Moravian and Moravian-Silesian Regions in the school year 2017–2018 were the investigated subpopulation. Based on the *Statistical Yearbook of Education* (MEYS, 2018), the basic set comprised 15,750 students. In both regions, head teachers of all vocational upper-secondary schools were asked by the Education Department of the respective region to participate in the research.

A questionnaire battery distributed to students through the school where they were studying was the main method of data collection. Administration took place either in an electronic or a printed form, according to the technical possibilities available and preferences of the head teachers of the individual schools. Data collection took place in March and April 2018 at 44 schools (21 from the South Moravian Region and 23 from the Moravian-Silesian Region). After signing the informed consent, students filled out questionnaires voluntarily during their lessons in the presence of a trained teacher, who provided them with the necessary assistance, if needed, while filling out the questionnaires.

A total of 3,126 students filled out the questionnaires, and 98 measurements were removed from the data file (e.g., answers to all items were the same, repeating answers of the type 123454321, etc.). As a result, the sample was reduced to 3,028 respondents: 46.5% girls and 53.5% boys, aged 18–26 ($M = 18.97; SD = 1.09$); 63.2% of them were in a field of study ending in a school-leaving examination (usually four-year study) and 36.8% in a field of study ending in an apprenticeship certificate (usually three years of practically oriented study). The participants studied in a wide range of fields, including business economics, hospitality and tourism, nurs-

ing, sport management, cosmetics, construction, gastronomy, and training to be a hairdresser, salesclerk, electrician, plumber, tinsmith, carpenter, joiner, auto mechanic, agricultural machinery technician, or agricultural producer/farmer, among others. Although we do not pay attention primarily to the family features and its support, in order to better describe our sample we add that 55.1% lived with their father and mother, 16.1% lived only with their mother, 4.1% lived only with their father, and 24.7% in other family structures; 14.3% of mothers and 15.3% of fathers had completed tertiary education; 78.8% of mothers were employed, 7.9% had a business, 1.4% were unemployed, and 12.0% had a different status (e.g., on maternity leave, housewives, had an disability pension); 69.1% of fathers were employed, 21.3% had a business, 1.2% were unemployed, and 8.4% had a different status. According to the last Population and Housing Census (Czech Statistical Office, 2019) in 2011, national and ethnic minorities in the Czech Republic accounted for only about 3% of the population. For this reason, neither the nationality nor the ethnic origin of participants needed to be assessed.

Measures

The Teacher Support Scale (TSS; Metheny, McWhirter, & O'Neil, 2008) was included in the questionnaire battery, in which the respondents commented on 21 statements using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The items do not refer to individual teachers, but to the teaching staff in general. The chosen tool reflects teacher support as a social phenomenon. The original version of the tool is composed of four subscales: *interested* (example item: "Teachers are interested in my future"), *positive regard* (example item: "Teachers would tell other people good things about me"), *expectation* (example item: "Teachers expect me to work hard in school"), and *accessible* (example item: "Teachers are easy to talk to about school things"). Various authors using the scale report an internal consistency ranging from .91 to .97 (Perry, Liu, & Pabian, 2010).

The English version of the tool was first translated into the Czech language by a professional translator and later back-translated by a bilingual translator. The above-mentioned four factors were not confirmed for the Czech version by confirmatory factor analysis (CFA) of the tool. Two models were tested — correlated factors (M1) and a hierarchical model (M2). Both models were specified and estimated in lavaan (version 0.6-2, Rosseel, 2012) using the WLSMV estimator with ordinal items. M1's fit with the data is barely acceptable, $\chi^2(183) = 4707$, $p < .001$, CFI = .93, RMSEA = .098, SRMR = .050. Correlations between factors are very high, ranging from .71 to .99. In fact, the estimated latent variable variance-covariance matrix psi is not positive-definite, suggesting estimation problems of a model with poorly differentiated factors. The same problems show up in the hierarchical model (M2), the estimation of which results in an inadmissible solution with negative variance (disturbance) of one of the factors and one standardized loading over 1. The fit of M2 is similar to that of M1, $\chi^2(185) = 4653$, $p < .001$, CFI = .93, RMSEA = .097, SRMR = .051). Overall, the structure reported by Metheny, McWhirter, and O'Neil (2008) does not seem to be well supported by our data. The dimensionality of our data appears to be lower, so we decided to use exploratory factor analysis (EFA) to

evaluate it. The analysis resulted in a bifactor model with one central factor and items from the original factor of positive perception that make up the so-called facet. Items of positive perception reflect the specific form of indirect teacher support, which is manifested in the student's belief that teachers view him/her positively, which means the emotional support in Tardy's social support model (Metheny, McWhirter, & O'Neil, 2008). The bifactor model corresponds well to the data, $\chi^2(172) = 3035$, $p < .001$, CFI = .955, RMSEA = .079, SRMR = .041. Although the overall TSS scale has a high internal consistency (McDonald's $w = .90$), the facet does not have it (McDonald's $w = .26$). For this reason, we worked predominantly in our study with teacher support expressed by the total TSS score from all the tool items.

The Czech version of the internationally established Career Adapt-Abilities Scale — International Form 2.0 (CAAS; Savickas & Porfeli, 2012) was used to determine career adaptability (Hlaďo, Kvasková, Ježek, Hirschi, & Macek, 2019). The tool has 24 statements that illustrate different skills that are important for career decision-making; the respondents comment using a 5-point Likert scale from 1 (not strong) to 5 (strongest). The tool measures four dimensions of career adaptability: concern, control, curiosity, and confidence. Confirmation factor analysis (CFA) confirmed the same factor structure as in the original version, $\chi^2(248) = 3584$, $p < .001$, CFI = .93, RMSEA = .069, SRMR = .045. Cronbach's α for total career adaptability was .93 and with respect to the individual subscales, it ranged from .80 to .88.

The questionnaire battery also included items related to the students' family background (parental education, employment of parents, family structure, etc.) and other selected academic variables (academic performance, satisfaction with the academic success rate, educational aspirations, etc.).

Statistical Analyses

A latent regression analysis was used to examine links between variables. The tests compare the means of the latent TSS variable, and individual covariates as TSS predictors are gradually added to the TSS measurement model. For these statistical analyses, the software environment R with the Lavaan package (v. 0.6-3) was used. Statistical differences in the responses of different respondent groups to individual TSS items were determined by the t-test for two independent selections using the program IBM SPSS (v. 23).

Results

It should be stated first that each student perceives his/her teachers differently and thus perceives teacher support differently as well. At the same time, teacher support may be perceived as social *classroom phenomena* shared in the individual classes. These results are therefore to be understood as a general trend going "across" the classes and teachers of individual subjects (Dietrich et al., 2015).

As we could not rely on the individual factors of teacher support (because they were not confirmed by the factor analysis), we used the analytical approach to compare the individual item averages to see in which specific areas students perceive

teacher support the most strongly and in which areas they perceive it less strongly, while comparing certain groups of students according to the set variables. The average values are shown in Table 1.

Table 1

Teacher Support Scale — item means and descriptive statistics

Item number	Item *"Most teachers in my high school…"*	*M*	*SD*
1	Expect me to work hard in school	4.02	.96
2	Try to answer my questions	3.67	1.04
3	Are interested in my future	2.82	1.19
4	Take the time to help me get better grades	3.28	1.15
5	Think I am a hard worker	3.27	1.11
6	Are helpful when I have questions about career issues	3.55	1.06
7	Are helpful when I have questions about school issues	3.73	1.01
8	Would tell other people good things about me	3.28	1.05
9	Push me to succeed	3.27	1.08
10	Challenge me to think about my future goals	3.04	1.14
11	Believe I am smart	3.32	1.02
12	Help me understand my strengths	2.95	1.05
13	Want me to do well in school	3.49	1.05
14	Enjoy having me in their classes	3.22	1.06
15	Care about what happens to me	3.01	1.04
16	Encourage me to learn	3.33	1.08
17	Think I should continue my education after high school	3.39	1.16
18	Support my goals for the future	3.05	1.07
19	Will listen if I want to talk about a problem	3.32	1.08
20	Are easy to talk to about school things	3.53	1.02
21	Are easy to talk to about things besides school	3.27	1.09

Note: 1 (strongly disagree) — 5 (strongly agree)

The overall score of perceived teacher support (the total average value from the 5-point scale) is 3.33 ($SD = .71$), which means that students perceive teacher support quite positively. If we focus on the items with the highest averages (1, 2, 6, 7, 13, and 20) and the lowest averages (3, 10, 12, 15, and 18), then it may be stated that students perceive teacher support primarily in relation to success in school and other educational and career path issues that include both expectation (1, 13) and specific help (2, 6, 7, 20). They perceive their teachers somewhat less as people who are interested in them as "individuals" and support them in self-knowledge

and thinking about their future — i.e., they perceive teacher support poorly when considering their teachers in the role of "career counsellors" (Schiersmann et al., 2012).

The standard deviations indicate the highest correspondence in responses to items 1, 7, 11, 20 (SD = .97 to 1.02) and the lowest correspondence in responses to items 3, 4, 10, and 17 (SD = 1.14 to 1.19). Students agree the most that teachers expect them to work hard, but at the same time are available and helpful in school matters. This would mean that students in vocational education perceive teacher support primarily in relation to school matters, whereas teacher support as individualized assistance linked to the student's future is perceived by each of them in a different way.

We also focused our attention on assessing gender difference in the perception of teacher support. Girls perceive greater teacher support by .03 SD on average than boys (z = .81, p = .420, 95% CI [−.05, .11], Cohen's d = .03); however, the difference between boys and girls is not statistically significant. Statistically significant differences between boys and girls were recorded in relation to items no. 1, 5, 7, 13, 17, and 20 (in favor of girls, p < .05) and only in the case of item 10, did boys experience greater support (thinking about future goals, p < .01). The greatest difference was recorded with respect to item 5: Girls think that teachers encourage them to be diligent more than boys do (p < .001). The above-mentioned differences could indicate that students perceive teacher support in the spirit of certain gender stereotypes, such as that "girls are diligent, so as a teacher I can expect them to work hard at school and therefore they deserve to be successful at school and have a 'better' educational future. In contrast, boys need to be encouraged to plan their future".

Relationship of Teacher Support to School and Academic Variables

We will now focus on the relationship between teacher support and the method of completing secondary school education, satisfaction with the field of study, academic performance, satisfaction with the academic success rate, willingness to work or continue studying in the given field, , and educational aspirations. In our sample, 63% of the students studied in fields ending with the school-leaving examination and 37% studied in fields ending with the apprenticeship certificate. Students in vocational education ending with the school-leaving examination perceived less teacher support on average by .09 SD than students ending with the apprenticeship certificate (z = −2.06, p < .05, 95% CI [−.17, −.01], Cohen's d = .09). There is, however, a statistically significantly higher level of support perceived by students in fields of study ending with the school-leaving examination in relation to items 1, 17, and 20 (p < .05) — i.e., they feel that teachers expect them to work hard, think they should continue in their studies, and in this spirit probably also discuss school matters.

We were also interested in how satisfaction with the field of study is related to perceived teacher support. More than 77% of students in our sample expressed satisfaction with their field of study (21.8% were very satisfied, 54.7% were rather satisfied). It turned out that greater satisfaction with the field of study posi-

tively predicts the perception of teacher support (B = .48, 95% CI [−.53, −.42], $z = −18.00$, $p < .001$, $r = −.35$). Students who are satisfied with their field of study perceive greater teacher support in relation to all the questionnaire items ($p < .01$). It may be assumed that students who are more satisfied with their field of study may be more motivated and more successful at school, which is also positively reflected in terms of support from teachers. Similarly, it can be assumed that students with higher academic performance[1] or at least expressing satisfaction with their study results are more likely to receive greater support from their teachers. In our sample, 53% of students showed excellent or good results of study (excellent 6.4%, very good 5.5%, good 41.0%) and 68% of students were satisfied with their study results (19.1% satisfied, 49.0% rather satisfied). The analysis of the data showed that the results of study (B = −.19, 95% CI [−.23, −.14], $z = −8.29$, $p < .001$, $r = −.16$) and satisfaction of the student with the academic success rate (B = −.29, 95% CI [−.34, −.24], $z = −11.63$, $p < .001$, r = −.23) positively predict the perception of teacher support.

With respect to subjective assessment by the respondents, it seems that the assumptions that teachers seem to communicate more and take more care of students who have better academic performance, and that students with better results of study seem to use the support more, proves to be valid.

Relationship Between Teacher Support and Career Adaptability

Career adaptability of students is at the heart of our research project (e.g., Hlaďo, Lazarová, & Hloušková, 2019) and we were interested in whether and how perceived teacher support is related to career adaptability. The level of perceived teacher support positively correlates not only with overall career adaptability, but also with all its dimensions: concern, control, curiosity, and confidence (Table 2).

Table 2

Correlation matrix of the TSS and career adaptability

Variable	1	2	3	4	5
1. Concern	–	–	–	–	–
2. Control	.64	–	–	–	–
3. Curiosity	.62	.78	–	–	–
4. Confidence	.67	.80	.78	–	–
5. Career adaptability (total score)	.83	.90	.90	.92	–
6. Teacher Support Scale (TSS)	.30	.27	.29	.31	.33

Note. All correlations are p < .001.

[1]   Academic performance was assessed by item: "How would you describe your learning outcomes in this school year?" Respondents may choose one of five options: excellent very good, good, sufficient, insufficient.

With regard to the correlations found, we wanted to assess the predictive power of perceived teacher support for career adaptability and its dimensions. The first model ($\chi^2(929) = 5597$, $p < .001$, CFI = .986, RMSEA = .046, SRMR = .043) confirmed the significant effect of perceived teacher support on overall career adaptability ($\beta = .23$, $p < .001$). In the second model, ($\chi^2(921) = 5152$, $p < .001$, CFI = .987, RMSEA = .044, SRMR = .040), teacher support was found to be a significant predictor of dimensions of career concern ($\beta = .23$, $p < .001$), control ($\beta = .13$, $p < .001$), curiosity ($\beta = .19$, $p < .001$), and confidence ($\beta = .21$, $p < .001$).

Discussion

The research results demonstrate that statistically significant relationships among perceived teacher support, certain school-related variables, and the career adaptability of adolescents may be taken into consideration. No association was found, however, between perceived support of teachers and the gender of students.

Some relationships between perceived teacher support and the academic variables of adolescents suggest various interpretations. There are different possible explanations if there is a lower level of perceived teacher support in the case of students in fields of study ending with the school-leaving examination than for their peers from fields of study ending with the apprenticeship certificate. We may take into account the assumption that students ending their study with the school-leaving examination are more independent and seek less support from teachers. There also exists an explanation that students in the fields ending with the apprenticeship certificate have a closer relationship with their teachers, as there are practical lessons in smaller groups that provide more opportunities for close cooperation, and this is bound to intensify communication between teacher and student. There is also the question as to whether student apprentices tend to have more worries in the course of their study, and therefore attract the attention of teachers more often. This assumption is excluded, however, by several findings. Students in the fields of study ending with the apprenticeship certificate were slightly more satisfied with the results of their study at school than students in fields of study ending with the school-leaving examination. In addition, the students in fields ending with the apprenticeship certificate had on average worse academic performance than students in fields ending with the school-leaving examination (although the differences between the two groups were not statistically significant), and, as presented in the Results section, students with worse academic performance perceive less teacher support. The question is whether students with worse results of their study are less interested in learning or in the field of study and therefore have less motivation to study. Such students would then logically not seek support at school. There may therefore be a joint "resignation on the part of students and teachers". If the teacher sees that the student is not interested and support has no motivational or other effects, the teacher prefers to pay attention to other students. In line with this idea, the findings of authors of another research project suggest that the students from whom teachers expect more may benefit from greater teacher support (Caleon et al., 2017; Faitar & Faitar, 2013).

Positive relationships between the concepts closely related to career adaptability (e.g., self-efficacy in career decision-making, career planning, career prepa-

ration) and perceived teacher support are documented by other research (e.g., Metheny, McWhirter, & O'Neil, 2008, 2008; Perry, Liu, & Pabian, 2010; Ryan & Patrick, 2001). Our knowledge of the positive relationship between career adaptability and perceived teacher support corresponds to those findings. It appears that perceived teacher support, especially at a time when students have to cope with the transition from secondary school to tertiary education or the labor market, may significantly influence students' career adaptability and thus their future career prospects. Since we have conducted a cross-sectional study without longitudinal exploration, the expected direction of action of the variables may be reversed or even bidirectional. There consequently exists an interpretation that students with greater concern and confidence are the ones who themselves more often ask for the support of teachers.

These results then evoke a number of questions related to teacher training. Teacher competences and their readiness to provide effective and versatile support to students, without being solely career counsellors, may attract increased attention. Even support targeted in a broad way seems to provide adolescents with a wide range of benefits when it comes to planning or deciding on their further career.

With regard to the wording of the items, it is clear that we have measured how students perceive the support of teachers "as a team", which may be closely linked to the way students perceive the school social climate. If we conceive of perceived teacher support as part of the climate of classes or schools, then our findings are only partially consistent with Kaur's (2012) research, which confirms the relationship between the school climate and career maturity in the dimension of self-appraisal. Our research does not confirm, however, the relationship between the school climate and career planning. On the contrary, our results indicate a significant relationship between career adaptability in the dimension of *concern,* which also includes the ability to plan the future, and perceived support of teachers.

Conclusion

Both key concepts that have been our focus, teacher support and career adaptability, attract or at least have the potential to attract the attention of psychologists working in the educational system. In our research, we used two foreign tools (the Teacher Support Scale and the Career Adapt-Abilities Scale), which are not commonly used in the Czech Republic. We presented their partial properties and "diagnostic" potential using the data from a specific group of adolescents. The large set of respondents provides a relative guarantee of relevant findings, although we are aware the results and conclusions need to be considered in the light of limitations.

Limitations

The questionnaires were administered to groups of participants with different levels of motivation to respond in classrooms during school hours. Thus, the context in which the data we collected could cause reluctance in some adolescents and

not all individuals approached a task with equal responsibility. We tried to prevent these risks by selecting a reasonable length for the questionnaire, "acceptable language", motivational elements, etc. The Czech version of the Teacher Support Scale unfortunately did not show the same or similar psychometric parameters as the original scale. For this reason, we had to continue working on the analyses only with an overall score that limited the possibility of deeper analysis. An adjustment to the Czech version of this tool is therefore worth considering, especially in the formulation of items, as well as an attempt to confirm the factor analysis again, for example, with another sample of respondents.

In our research, teacher support has been examined as a general "feeling" related to all teachers in school, so we cannot assess the individual teacher characteristics in relation to perceived support. We also did not analyze teacher support considering individual schools as the units of analysis. It is clear, however, that such a question could be a challenge for future analyses.

Acknowledgements

References

Allee-Smith, P. J., Im, M. H., Hughes, J. N., & Clemens, N. H. (2018). Mentor Support Provisions Scale: Measure dimensionality, measurement invariance, and associations with adolescent school functioning. *Journal of School Psychology, 67*, 69–87. https://doi.org/10.1016/j.jsp.2017.09.006

Brewster, A. B., & Bowen, G. L. (2004). Teacher support and the school engagement of Latino middle and high school students at risk of school failure. *Child and Adolescent Social Work Journal, 21*(1), 47–67. https://doi.org/10.1023/B:CASW.0000012348.83939.6b

Bronfenbrenner, U. (1979). *The Ecology of Human Development*. London: Harvard University Press.

Caena, F. (2011). *Literature review: Teachers' core competences: requirements and development*. Data from: European Commission. Accessed January 19, 2019. https://ec.europa.eu/dgs/education…/teacher-competences_en.pdf

Caleon, I. S., Wui, G. L., Chiam, C. L., King, R. B., Tan, J. P., & Tan, C. S. (2017). Personal strengths and perceived teacher support as predictors of Singapore students' academic risk status. *Educational Psychology, 37*(8), 983–1000. https://doi.org/10.1080/01443410.2016.1259460

Cooper, K. S. (2014). Eliciting engagement in the high school classroom: A mixed methods evaluation of teaching practices. *American Educational Research Journal, 51*(2), 363–402. https://doi.org/10.3102/0002831213507973

Cox, A., & Williams, L. (2008). The role of perceived teacher support, motivational climate, and psychological need satisfaction in students' physical education motivation. *Journal of Sport and Exercise Psychology, 30*(2), 222–239. https://doi.org/10.1123/jsep.30.2.222

Czech Statistical Office. (2019). *Population and Housing Census*. Retrieved from https://www.czso.cz/csu/czso/population-and-housing-census

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Dietrich, J., Dicke, A. L., Kracke, B., & Noack, P. (2015). Teacher support and its influence on students' intrinsic value and effort: Dimensional comparison effects across subjects. *Learning and Instruction*, *39,* 45–54. https://doi.org/10.1016/j.learninstruc.2015.05.007

Di Fabio, A., & Kenny, M. E. (2015). The contributions of emotional intelligence and social support for adaptive career progress among Italian youth. *Journal of Career Development, 42*(1), 48–59. https://doi.org/10.1177/0894845314533420

Faitar, G. M., & Faitar, S. L. (2013). Teachers' influence on students' science career choices. *American International Journal of Social Science*, *2*(5), 10–16.

Farmer, H. (1985). Model of career and achievement motivation for women and men. *Journal of Counseling Psychology, 32*(3), 363–390. https://doi.org/10.1037/0012-1649.14.3.268

Filak, V. F., & Sheldon, K. M. (2008). Teacher support, student motivation, student need satisfaction, and college teacher course evaluations: Testing a sequential path model. *Educational Psychology, 28*(6), 711–724. https://doi.org/10.1080/01443410802337794

Guess, P. E., & McCane–Bowling, S. J. (2016). Teacher support and life satisfaction: An investigation with urban, middle school students. *Education and Urban Society, 48*(1), 30–47. https://doi.org/10.1177/0013124513514604

Harter, S. (1985). *Manual for the social support scale for children*. Denver: University of Denver.

Hlaďo, P., & Ježek, S. (2018). Measurement of career-specific parental behaviors perceived by Czech adolescents. *Studia Paedagogica*, *24*(2), 101–135. https://doi.org/10.5817/SP2018-2-7

Hlaďo, P., Kvasková, L., Ježek, S., Hirshi, A., & Macek, P. (2019). Career adaptability and social support of vocational students leaving upper secondary school. *Journal of Career Assessment*. https://doi.org/10.1177/1069072719884299

Hlaďo, P., Lazarová, B., & Hloušková, L. (2019). Career adaptability of vocational education and training graduates in the period of prospective school-to-work transition. *Studia paedagogica*, *24*(2), 59–83. https://doi.org/10.5817/SP2019-2-3

Johnson, D. W., & Johnson, D. W. (1983). Social interdependence and perceived academic and personal support in the classroom. *Journal of Social Psychology, 120*(1), 77–82. https://doi.org/10.1080/00224545.1983.9712012

Kaur, P. (2012). Career maturity among adolescents in relation to their school climate. *International Journal of Research in Education Methodology*, *1*(1), 10–13. https://doi.org/10.24297/ijrem.v1i1.4140

Kenny, M. E., & *Bledsoe,* M. (*2005)*. Contributions of the relational context to career adaptability among urban adolescents. *Journal of Vocational Behavior 66*(2), 257–272. https://doi.org/10.1016/j.jvb.2004.10.002

Klem, S. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health*, *74*(7), 262–273. https://doi.org/10.1111/j.1746-1561.2004.tb08283.x

Lapan, R. T., Tucker, B., Se-Kang, B. K., & Kosiulek, J. F. (2003). Preparing rural adolescents for post-high school transitions. *Journal of Counseling and Development, 81*(3), 329–342. https://doi.org/10.1002/j.1556-6678.2003.tb00260.x

Malecki, C. K., & Demaray, M. K. (2002). Measuring perceived social support: Development of the Child and Adolescent Social Support Scale (CASSS). *Psychology in the Schools, 39*(1), 1–18. https://doi.org/10.1002/pits.10004

Malecki, C. K., & Demaray, M. K. (2003). What type of support do they need? Investigating student adjustment as related to emotional, informational, appraisal, and instrumental support. *School Psychology Quarterly, 18*(3), 231–252. http://dx.doi.org/10.1521/scpq.18.3.231.22576

Mantzicopoulos, P. Z., & Neuharth-Pritchett, S. (2003). Development and validation of a measure to assess Head Start children's appraisals of teacher support. *Journal of School Psychology, 41*(6), 431–451. https://doi.org/10.1016/j.jsp.2003.08.002

McNeely, C., & Falci, C. (2004). School connectedness and the transition into and out of health- risk behavior among adolescents: A comparison of social belonging and teacher support. *Journal of School Health*, *74*(7), 284–292. https://doi.org/10.1111/j.1746-1561.2004.tb08285.x

Metheny, J., McWhirter, E. H., & O'Neil, E. (2008). Measuring perceived teacher support and its influence on adolescent career development. *Journal of Career Assessment, 16*(2), 218–237. https://doi.org/10.1177/1069072707313198

MEYS. (2018). *Statistická ročenka školství — výkonové ukazatele* [Statistical yearbook of education, the Ministry of Education, Youth and Sports]. Accessed January 20, 2018. http://toiler.uiv.cz/rocenka/rocenka.asp

Mitchell, S. N., & DellaMattera. J. N. (2010). Teacher support and student's self-efficacy beliefs. *Journal of Contemporary Issues in Education, 5*(2), 24–35. https://doi.org/10.20355/C5X30Q

Moos, R. H., & Trickett. E. J. (1974). *Classroom environment scale manual.* Palo Alto, California: Consulting Psychologists Press. https://doi.org/10.1037/t06449-000

Perry, J. C., Liu, X., & Pabian. Y. (2010). School engagement as a mediator of academic performance among urban youth: The role of career preparation, parental career support, and teacher support. *The Counseling Psychologist 38*(2)*,* 269–295. https://doi.org/ 10.1177/0011000009349272

Research Assessment Package for Schools (RAPS) (1998). Institute for Research and Reform in Education. Rochester: University of Rochester. Accessed January 19, 2019. https://morandissertation.files.wordpress.com/2013/01/raps_manual_entire_19981.pdf

Reddy, R., Rhodes, J. E., & Mulhall, P. (2003). The influence of teacher support on student adjustment in the middle school years: A latent growth curve study. *Development and Psychopathology*, *15*(1), 119–138. https://doi.org/10.1017.S0954579403000075

Rogers, C. R. (1958). The characteristics of a helping relationship. *The Personnel and Guidance Journal 37*(1), 6–16. https://doi.org/10.1002/j.2164-4918.1958.tb01147.x

Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, *48*(2), 1–36. https://doi.org/10.18637/jss.v048.i02

Ruzek, E. A., Hafen, C. A., Allen, J. P., Gregory, A., Mikami, A. Y., & Pianta. R. C. (2016). How teacher emotional support motivates students: The mediating roles of perceived peer relatedness, autonomy support, and competence. *Learning and Instruction 42*, 95–103. https://doi.org/10.1016/j.learninstruc.2016.01.004

Ryan, A. M., & Patrick, H. (2001). The classroom social environment and changes in adolescents' motivation and engagement during middle school. *American Educational Research Journal*, *38*(2), 437–460. https://doi.org/10.3102/00028312038002437

Sakiz, G., Pape, S. J., & Hoy, A.W. (2012). Does perceived teacher affective support matter for middle school students in mathematics classrooms? *Journal of School Psychology*, *50*(2), 235–255. https://doi.org/10.1016/j.jsp.2011.10.005

Sarason, I. G., Levine, H. M., Basham, R., & Sarason, B. (1983). Assessing social support: The social support questionnaire. *Journal of Personality and Social Psychology, 44*(1)*,* 127–139. http://dx.doi.org/10.1037/0022-3514.44.1.127

Savickas, M. L. (2005). The theory and practice of career construction. In D. Brown & R. W. Lent (Eds.), *Career development and counseling: Putting theory and research to work* (pp. 42–70). Hoboken: Wiley.

Savickas, M. L., & Porfeli, E. J. (2012). Career Adapt-Abilities Scale: Construction, reliability, and measurement equivalence across 13 countries. *Journal of Vocational Behavior*, *80*(3), 661–673. https://doi.org/10.1016/j.jvb.2012.01.011

Schiersmann, Ch., Ertelt, B.-J., Katsarov, J., Mulvey, R., Hazel, R., & Weber, P. (2016). *European competence standards for the academic training of career practitioners.* Opladen, Berlin, and Toronto: Barbara Budrich Publishers. https://doi.org/10.2307/j.ctvd7w8vf

Suldo, S. M., Friedrich, A. A., White, T., Farmer, J., Minch, D., & Michalowski, J. (2009). Teacher support and adolescents' subjective well-being: A mixed-methods investigation. *School Psychology Review, 38*(1), 67–85.

Tardy, C. H. (1985). Social support measurement. *American Journal of Community Psychology*, *13*(2), 187–202. https://doi.org/10.1007/BF00905728

Torsheim, T., Wold, B., & Samdal, O. (2000). The Teacher and Classmate Support scale. Factor structure, test-retest reliability and validity in samples of 13- and 15-year-old adolescents. *School Psychology International*, *21*(2), 195–212. https://doi.org/10.1177/0143034300212006

Tsen, V., & Seidman, E. (2007). A systems framework for understanding social settings. *American Journal of Community Psychology*, *39*(3–4), 217–228. https:// doi: 10.1007/s10464-007-9101-8

Wang, M. T., & Eccles, J. S. (2013). School context, achievement motivation, and academic engagement: A longitudinal study of school engagement using a multidimensional perspective. *Learning and Instruction 28*, 12–23. https://doi.org/10.1016/j.learninstruc.2013.04.002

Weinstein, R. S., Marshall, H. H., Sharp, L., & Botkin, M. (1987). Pygmalion and the student: Age and classroom differences in children's awareness of teacher expectations. *Child Development, 58*(4), 1079–1093. http://dx.doi.org/10.2307/1130548

Williams, G. C., & Deci, E. L. (1996). Internalization of biopsychosocial values by medical students: A test of self-determination theory. *Journal of Personality and Social Psychology, 70*(4), 767–779. http://dx.doi.org/10.1037/0022-3514.70.4.767

Wold, B., Aarø, L. E., & Smith, C. (1994). *Health Behaviour in School Age Children. A WHO cross-national survey. Research protocol for the 1993–1994 study*. Bergen: University of Bergen, Research Center for Health Promotion.

Zhang, J., Yuen, M., & Chen, G. (2018). Teacher support for career development: An integrative review and research agenda. *Career Development International 23*(2), 122–144. https://doi.org/10.1108/CDI-09-2016-0155

Supporting Vulnerable Groups of Students in Educational Settings: University Initiatives and Partnerships

Chryse Hatzichristou*, Panayiotis Lianos, Aikaterini Lampropoulou

National and Kapodistrian University of Athens, Athens, Greece

*Corresponding author. E-mail: hatzichr@psych.uoa.gr

Background. During the last decades, the need for supporting vulnerable groups of the population facing crisis situations and adversities has grown dramatically. School communities have been particularly affected, increasing the need for interventions promoting individual and system's resilience and well-being.

Objective. This paper presents an integrated approach to linking theory, training, research, and interventions in the Greek educational system in an alternative model for providing school psychological services. This approach puts particular emphasis on the development, implementation, and evaluation of evidence-based prevention and intervention programs for enhancing resilience and supporting school communities during unsettling times.

Results. In particular, the programs that have been developed and implemented by the Laboratory of School Psychology (LSP), National and Kapodistrian University of Athens are reviewed and presented. For the evaluation of the evidence-based intervention programs, a multilevel assessment model has been applied. Overall, results showed the effectiveness of SEL-based intervention programs aiming at a) enhancing individual resilience and psychological adjustment; and b) supporting school communities during adversities, such as economic recession, refugee influx, and natural disasters.

Conclusion. The evaluation process and the positive outcomes of the programs highlight the critical importance of implementing intervention programs to support all members of school communities. The description of the various actions developed and implemented by the LSP stresses the important role that universities can play in bridging the gap between theory, research, training, and practice in the field of school psychology.

Introduction

Despite the advances in mental health service delivery in the Greek educational system during the last decades, the provision of school psychological services in mainstream public schools is still limited (Hatzichristou, Polychroni, & Georgouleas, 2007; Hatzichristou & Polychroni, 2014). In addition, the need for support of vulnerable groups of the population due to crisis situations, such as the economic recession, refugee influx, and natural disasters, has grown. Vulnerability is defined by the World Health Organization (WHO, 2002) as "the degree to which a population, individual or organization is unable to anticipate, cope with, resist and recover from the impacts of disasters (p. 5)." Furthermore, vulnerability is linked with the risk for developing psychopathology and susceptibility to undesirable outcomes (Wright, et al., 2013). Resilience, on the other hand — also defined as invulnerability — refers to the ability of individuals and systems to overcome life's adversities (Masten, 2016; Satici, 2016).

During recent years, an on-going period of economic recession has occurred that had had significant impact for the greater part of the population in Greece, leading to high unemployment rates and to the departure of a large number of educated people to other countries (Hatzichristou, Lianos, & Lampropoulou, 2017). This situation has escalated with the unprecedented inflow of refugees. According to UNHCR's Greek annex (www.unhcr.org/gr), over the last five years (2014 — June 2019) there have been almost 1,200,000 arrivals by land and sea in Greece alone. Furthermore, in the summer of 2018, a wildfire burned extensive populated regions in the coastal areas of Eastern Attica, claiming the lives of 102 people, some of them children and adolescents. This situation made a large impact on the school community as well (Hatzichristou, 2019a).

These events can be considered stressful or even traumatic, being potentially capable of causing physical or emotional pain, depending on how a person experiences or responds to such an event (Rossen & Cowan, 2013). The internal and external effects of the individual's experience can be impacted by the values and cultural beliefs of a group, available social support, and individual predispositions (Chafouleas, Johnson, Overstreet, & Santos, 2015). In addition, the characteristics of the event can influence the experience, including prediction, duration, consequences, and intensity (Brock & Jimerson, 2013). The occurrence of such events within school communities can affect a large number of people. Supporting the members of affected school communities, especially the vulnerable and at-risk groups, is an important part of a school psychologist's role and requires special training, knowledge, and skills (Hatzichristou, 2019a).

Throughout the past two decades, the Laboratory of School Psychology (LSP) (former Center for Research and Practice of School Psychology) of the Department of Psychology at the National and Kapodistrian University of Athens, has developed, implemented, and evaluated several programs for supporting school communities and promoting resilience, well-being, and psychosocial adjustment of vulnerable students in multiple educational settings. These interventions also included training and consultation of teachers, school administrators, parents, and psychologists (Hatzichristou & Lianos, 2016). The Laboratory's scientific team consists of the Scientific Director, experienced school psychologists, and PhD can-

didates who coordinate and supervise the intervention teams (school psychologists, PhD candidates, graduate and undergraduate students, teachers, and other volunteers). In this paper we discuss the conceptual framework guiding the LSP's approach to linking theory, training, research, and interventions in the Greek educational system in an alternative model of providing school psychological services for vulnerable groups of students. Subsequently, the interventions and programs implemented at both school and system levels are presented.

Provision of Alternative School Psychological Services

The limited provision of school psychological services in Greek mainstream public schools has led to the development of an alternative model for providing school psychological services, which connects theory, research, training, and practice over four interrelated phases. The first three phases provide the empirical data which set the basis for the fourth phase, which is the development and implementation of several activities by the LSP scientific team. The first three phases are evolving and constantly enriched by several new research domains that provide new areas of intervention (Hatzichristou, 2011).

Conceptual Framework

One of the basic activities of the LSP is the development and application of intervention programs which are assessed through an evidence-based approach (Hatzichristou, 2014; Hatzichristou, Adamopoulou, & Lampropoulou, 2014; Hatzichristou, Lykitsakou, Lampropoulou, & Dimitropoulou, 2010). These programs have followed the guidelines of a constantly evolving conceptual framework that combines current trends, new theoretical concepts, empirical studies, and data at a national and international level. The result of this multi-year effort is a proposed synthetic model for developing interventions for promoting resilience and well-being (see Hatzichristou, Lampropoulou, & Lianos, accepted for publication, for description).

This synthetic model includes an approach to school community well-being within the framework of the basic principles of social justice and children's rights. The model, apart from the systemic approach, and the emphasis on positive psychology, also incorporates current trends, the latest theoretical approaches, and practice models from the literature on resilience, effective schools, schools as caring communities, and social-emotional learning (Hatzichristou, 2014; Hatzichristou et al., accepted for publication). By integrating these theoretical components into system-level interventions, schools can enhance resilience and promote a positive school climate (see *Figure 1*).

This synthetic model was further enriched by the development of a multi-level model for crisis preparedness and intervention that includes multi-layered, multi-dimensional, and multi-faceted approaches which take into consideration contextual factors and cross-cultural and cross-national perspectives (Hatzichristou, Issari, Lampropoulou, Lykitsakou, & Dimitropoulou, 2011). In relation to crisis prevention and intervention, special emphasis is placed on multi-level resilience promotion (at the individual, classroom and school level). Resilience has always

been a core concept of the intervention's conceptual framework and one of the main outcome targets. However, it was further stressed in the face of the adversities in Greece. Consequently, a common foundation for all the interventions implemented over the last decade was the enhancement of individual and system resilience at either a primary level (enhancing the skills for all children and supporting teachers for future challenges), or a secondary level (helping children and the teachers deal with the existing adversities in Greece).

These efforts comprise a resilience approach consisting of four basic domains: *Building, Empowering, Supporting,* and *Training* (Hatzichristou, 2019a). *Building* resilience includes interventions that primarily aim to help individuals and systems develop resilience and resilient characteristics that will be of use in their everyday lives and in times of future adversities. The second domain (*Empowering*) includes interventions that empower and support individuals and systems when an adverse event has already occurred. *Supporting* resilience is a supplementary domain for the above interventions, and requires the cooperation and the involvement of all
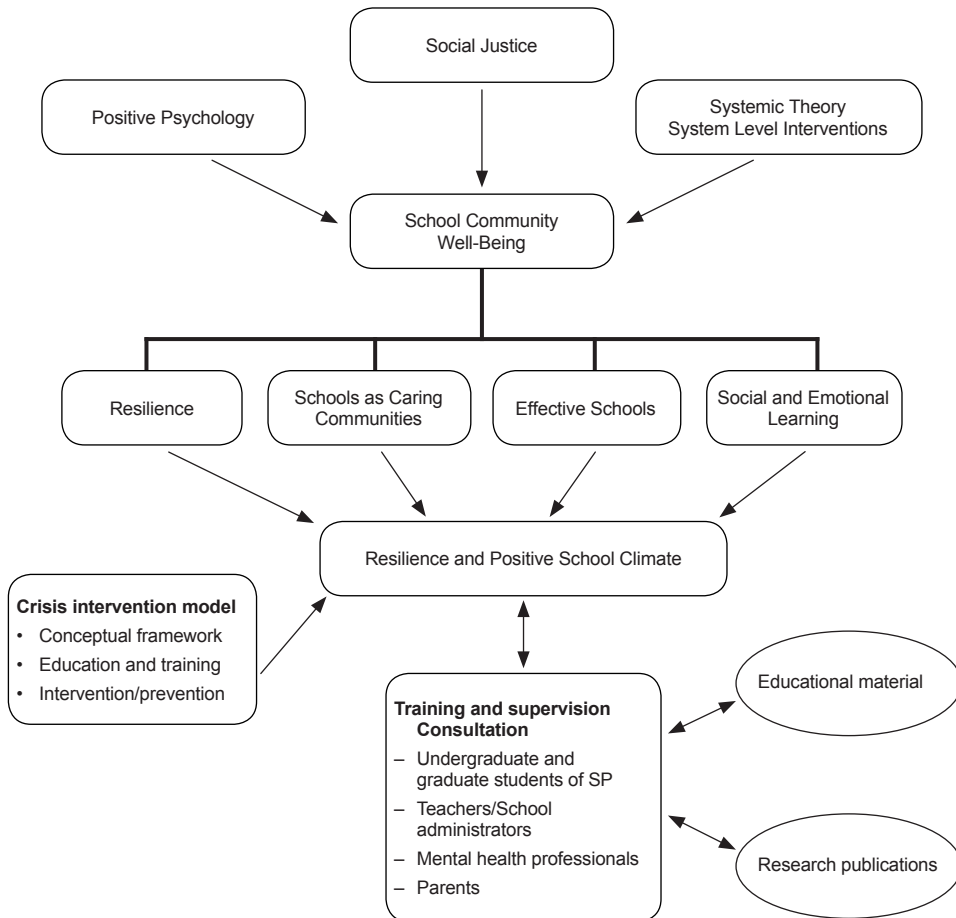

Figure 1. Multi-level conceptual framework for promoting resilience and positive climate in school communities, through SEL-based interventions for vulnerable groups of students

members of the school community via consultation and support whenever it is needed. Finally, *training* in resilience is a constantly required domain that should aim to prepare all members of a school community to efficiently promote resilience before, during, and after a crisis.

Programs for Supporting Vulnerable Groups of Students in School Communities

Programs for social-emotional learning (SEL) are considered an important dimension of mental health intervention in the school setting. They promote acquisition and effective application of emotional understanding and management, the setting of positive goals, empathy expression, developing positive relationships, and responsible decision-making (CASEL, 2013). Social and emotional skills are the basis for enhancing resilience at both an individual and system level. SEL-based programs focused on promoting resilience are especially beneficial for supporting schools after crisis situations.

Recently, emphasis has been placed on developing trauma-informed practices (Mendelson, Tandon, O'Brennan, Leaf, & Ialongo, 2015). A key element of an effective trauma-informed school is the provision of clear guidelines to all school community members regarding how to identify behaviors that may be reactions to traumatic events, and to whom to refer children and families when additional services are essential. Trauma-informed schools can contribute to improved academic achievement and school climate, a reduction in students' behavioral out-bursts, a reduction of stress for staff and students, lower levels of bullying behavior, and a reduction in dropouts (Walkley & Cox, 2013).

Supporting School Communities during Economic Recession

Responding to the needs of the school communities following the economic recession, a multilevel prevention, awareness-building, education, and intervention project aimed at creating a national and international school network of resilient schools, was developed (Hatzichristou et al., 2014). The project consisted of three school-based intervention programs: a) the Supporting in Crisis program; b) the Ε.Μ.Ε.Ι.Σ (**Ε**νδιαφερόμαστε (Care) — **Μ**οιραζόμαστε (Share) — **Ε**νθαρρύνουμε (Encourage) — **Ι**σχυροποιούμαστε (Empower) — **Σ**υμμετέχουμε (Participate) program; and c) the International Program WeC.A.R.E: Teachers' training and intervention for the promotion of a positive school climate and resilience in the school community.

The Supporting in Crisis program was implemented during the peak of the economic crisis in Greece, and aimed to support and strengthen students' and teachers' resilience and well-being at an individual, group, and school community level. In total, 138 teachers, 29 schools, and almost 3,000 students benefitted from the intervention. The structure of the program included specialized training seminars for teachers, classroom activities, and development of educational material. The multilevel evaluation model consisted of two phases: a) needs assessment, conducted at an individual and system level for teachers and students, focused upon the effects of the economic crisis as well as the school climate; and b) a pre- and post-assessment

procedure with both qualitative and quantitative data from teachers and students, focused upon the program implementation, school climate, and psychological adjustment. Findings before and after implementation highlighted the program's beneficial effects on students' self-esteem and relationships (t [77] = −2.27; $p < .05$), initiative-taking, and school bonding (t [54] = −2.51; $p < .05$) (Hatzichristou et al., 2014).

The E.M.E.I.Σ. teachers' training and intervention program for the promotion of resilience and a positive school climate in the school community was implemented the following school year, in order to address the intense needs for psychological support that emerged from the economic crisis. One hundred twenty-five teachers, 39 schools, and almost 3,200 students were involved in the program. Its goals included: a) the development of a positive climate in the school environment; b) reinforcement of individual and group resilience; c) promotion of internal strengths, motivation, and skills for students and teachers; and d) enhancement of teachers' professional skills. The program included teacher training seminars, classroom activities, supervision, and a closing ceremony. The multilevel evaluation model entailed: a) needs assessment, in terms of the effects of the economic crisis, and the classroom and school climate, conducted at an individual and system level for teachers and students; b) pre- and post-assessment by teachers and students, focusing upon the program implementation, and psychological adjustment at an individual and system level; and c) control group comparison. Analyses showed that higher levels of psychosocial adaptation (*e.g.*, resilience, promotion of social skills, expression and management of stress and emotions, enhancement of self-esteem, improvement in learning, and goal setting), and positive school climate (*i.e.,* team spirit promotion, relationship improvement, increase in motivation levels, and reduction of conflict levels) were reported after the implementation of the program for both students and teachers. Vulnerable children (*i.e.*, those experiencing intense economic difficulties and low achievers) were the ones who especially benefitted from the program (for a detailed description regarding assessment design and results, see Hatzichristou et al., 2014; Hatzichristou et al., 2017).

The International Program WeC.A.R.E. (We Connect, Accept, Respect, Empower) was implemented for five consecutive academic years (four phases) in schools from 13 countries (Australia, Belgium, Canada, Cyprus, Ethiopia, Germany, Greece, Ireland, the Netherlands, Sweden, Switzerland, United Kingdom, and the USA). It is a long-distance, web-based program for training teachers on classroom interventions that promote a positive climate and resilience in the school community. Through the use of distance learning, the program offered the opportunity for communication and exchange of experiences and knowledge among schools of different countries. Four hundred thirty-nine teachers, 287 schools, and 6,932 students participated in total. Teachers and their students cooperated online with other schools from Greece and abroad, via the "Sailing-4Caring" online interactive educational platform that hosted the program's modules and activities.

The evaluation of the program entailed a needs assessment phase, initial evaluation, process evaluation (at the end of each module), and post-assessment. A significant improvement in the dimensions concerning class climate and school rela-

tionships was indicated throughout the four phases. Teachers consistently reported higher levels in all dimensions of a positive school climate, such as co-operation among students and increased frequencies of students showing respect and support. Likewise, students reported improvement in their ability to identify and express their feelings, in their social skills, and in their interpersonal relationships (for a detailed description, see Hatzichristou et al., 2014; Hatzichristou & Lianos, 2016).

Multilevel Approach for the Psychosocial Support of Vulnerable Groups of Students

There is growing international scientific interest in approaches and intervention programs that focus on the ability of school communities to cope with the learning and psychosocial needs of students exposed to traumatic experiences (Tyrer & Fazel, 2014; Wille, 2016). The following terms have been adopted to describe the approaches by schools to raise awareness of, information on, and intervention on student needs: "trauma-informed schools," "trauma-sensitive schools," and "trauma-responsive education." (Cowan, Vaillancourt, Rossen, & Pollitt., 2013; Walkley & Cox, 2013; Wille, 2016).

Based on the above, the multilevel prevention and intervention model for crisis intervention has evolved to respond to the specific needs of vulnerable students, especially refugee children residing in refugee facilities. Over the past two decades, the LSP has developed, implemented, and evaluated several programs for the promotion of resilience, well-being, and psychosocial adjustment of students with migrant and refugee backgrounds in both general and multicultural schools, including teacher and parent training and consultation (Hatzichristou & Lianos, 2016). The principal goals of the model are: a) raising awareness concerning multicultural diversity; b) providing training, in order to empower all members of the community; c) implementing interventions; d) developing and allocating educational material and booklets; and e) building partnerships between University and school communities, institutions (*i.e.*, schools, community centers, educational support centers, etc.), and networks of schools. Specific actions have ranged from sensitization of undergraduate and graduate students, and training graduate students in School Psychology in school interventions, to specialized training, consultation, supervision, and program implementation of teachers and mental health professionals at national and international levels.

Supporting Refugee Children and Adolescents in Educational Settings

 A one-day workshop entitled "Psychosocial support for refugee children" was conducted for school professionals working with refugee children (*i.e., teachers, administrators, psychologists, social workers, NGO personnel, etc.) and undergraduate/graduate students, at the School of Philosophy of the National and Kapodistrian University of Athens by members of the Laboratory of School Psychology team. Several invited speakers addressed refugee students' psychosocial adjustment, trauma-informed practices, and practitioners' self-care. Furthermore, a booklet with helpful suggestions concerning the psychosocial adjustment of ref-

ugee children and adolescents was uploaded on the LSP's website, as a resource for parents, educators, and mental health specialists working with refugees (Hatzichristou et al., 2018).

Based on the multilevel prevention and intervention model, a project on supporting adolescent students in an atypical Learning Center (LC) inside a refugee facility in the greater Athens area was developed by the LSP's team in collaboration with the British Council and UNICEF. It aimed at facilitating creative learning, psychosocial adjustment, and a sense of safety among refugee adolescents. The LSP team's input focused on the following key elements: a) development of the conceptual framework and the incorporation of key components based on psychological needs into the daily LC curriculum; b) the basic training of key stakeholders; c) design and implementation of an SEL-based trauma-specific intervention program; and d) evaluation of the LC's operation and exploration of factors that could provide feedback for the adjustment of refugee adolescent students in the school context. The following factors related to difficulties concerning the promotion and achievement of resilience, were taken into consideration: a) students' and stakeholders' needs for a common means of communication during the educational process; b) adolescents' past educational experience, both prior to their trauma (war, relocation) and in their current accommodation centers (with limited essentials); c) exposure to multiple traumatic experiences; d) basic developmental needs (identity shaping and psychosocial adjustment); and e) the uncertain reality deriving from the children's current living conditions.

The conceptual framework of the project incorporated the current international trends in school psychology and was based on a multi-tiered holistic approach to promoting positive development, adjustment, and support for refugee children and adolescents in the school community in the context of trauma-informed practices. This program intended to foster social engagement/re-engagement and well-being in new learning environments by linking theory, research, and practice. The key components focused on social justice, children's rights, and multicultural/acculturation guidelines, and were further enriched by basic school psychology approaches.

Furthermore, training workshops for the preparation of the LC members were carried out throughout the school year by the LSP team, focusing on the principal components of the program's design — education about trauma and self-care, goals and values, crisis management, resilience and trauma-informed practices, and de-escalation techniques. Notably, the training context was adjusted according to the educators' feedback, and was rendered more appropriate for the emerging psycho-emotional needs of the students and the participants. A major objective of the training sessions was the infusion of the key conceptual framework elements into the teaching practice of the LC staff.

Six staff members participated in training workshops. The six participants were asked to assess the training workshops by answering a survey consisting of closed (Likert scale, 1 = Strongly Disagree, to 4 = Strongly Agree) and open-ended questions. The trainees reported that during the seminars participation and interaction were encouraged ($M = 3.33$), the topics presented were applicable in educational practice ($M = 3$), and that the cooperation of the coordinators was satisfactory ($M = 3.17$). Aspects of the training that they liked included: a) the

activities and the examples; b) the positive attitude of the trainers; c) the information provided; and d) the flexibility and adaptability of the trainers in terms of the agenda and the needs of the group. Furthermore, the importance of the delivery of resources and ideas for implementation in the classroom was highlighted, as well as the understanding of the needs of students in this fragile context, especially through case study analysis and the provision of strategies and guidance for educators. Finally, the participants indicated that the seminars provided a space for reflection on the psychological needs of the students, and helped create a better understanding of the meaning of resilience through the implementation of relevant activities.

One of the project's elements was the design, development, and implementation of a psychosocial support program entitled *Building Our Horizons,* which aimed to foster adolescents' positive skills and abilities; promote resilience and a sense of well-being among refugee youth; prevent escalation of trauma impact; respect and foster multicultural diversity; and promote community integration (embrace of effective acculturation strategies). The four basic modules of the program were designed for vulnerable children (especially refugees) who have experienced multiple adverse situations: a) goals, values, and relationships; b) self-regulation; c) problem-solving in difficult situations; and d) identifying evolution and future goals. Activity modules included in-class activities and broader goals to be disseminated in the educational curriculum. The set of activities was proposed and demonstrated to the LC facilitators and teachers during the training workshops, in order to enrich their lesson plans and teaching methodology.

Overall, the project was considered a challenging opportunity for all participants involved, in order to enhance all those protective factors that set the fundamental prerequisites for resilience at a system level (students, staff, etc.). Prioritizing safety, communication, cultural, and relational issues — along with flexibility in re-designing and decision-making in difficult/crisis situations — served as essential materials to build an educational setting that fosters children's learning engagement and psychosocial adjustment. However, regarding the LC experience and the operation of reception facilities for refugee education in general, further systematic research is needed due to the complex and emerging psychological and learning needs of refugee students. The main focus should be their integration into national public education systems with the aid of information and communication technologies (Joynes & James, 2018; World Bank, 2016).

University — schools — community centers interconnection model: supporting school communities with migrant and refugee students.

During recent years, the LSP has collaborated with a community-based educational support center in the central region of Athens, in order to provide psychosocial support for two elementary schools with high percentages of migrant and refugee students. This initiative was based on a University — schools — community center interconnection model for supporting schools with migrant and refugee students. The goals of the program were: a) the promotion of resilience, psychosocial support, and multicultural understanding for all students (school-based services);

b) the development of a trauma-informed school network that can support vulnerable and at-risk students; and c) the development of cooperation among the University, school settings and community-based educational support center.

The program was implemented with the collaboration of the Graduate Program of School Psychology and the LSP of the Department of Psychology, NKUoA, and was linked with several courses on prevention and intervention in the school community, psychoeducational interventions in school, and supervision. Graduate school psychology students cooperated with teachers at multiple levels during their internship in multicultural schools. University-based supervision was provided to graduate students by academic supervisors/experienced school psychologists aiming to empower them as novice school psychologists, and to ensure the best possible provision of school psychological services to participating schools in general, and to refugee children in particular.

In particular, graduate school psychology students were trained in the implementation of the *Building Our Horizons* program (see above for details) in multicultural classrooms, which had been designated by the two schools' administrators as most in need of support. School-based supervision was provided both by the teaching staff responsible for the students' practice and by the supervising school psychologist in the support center. Teachers and students reported positive effects of the program's implementation in several aspects of school life, such as peer relations, emotional expression, conflict resolution, and respect for diversity; likewise, the graduate students appreciated the unique opportunity in the course of their internship to work in a system-level school-wide program.

This model can set the basis for the development of intervention programs and support networks among schools with large numbers of immigrant/refugee students, with an emphasis on exchange of resources and best practices (Hatzichristou, 2019a).

Supporting the school community after a natural disaster. During the current school year, after the disastrous wildfire occurred in the Eastern Attica, the LSP team supported the affected schools by a) providing supervision of, and consultation with, the psychologists appointed to these schools by the Ministry of Education, and b) implementing a SEL-based prevention program, designed for the special needs of the community, based on the principles of trauma-sensitive schools.

This endeavor was the result of a synergy among the LSP, the Ministry of Education, the schools of Eastern Attica (eight preschool and eight elementary schools), the appointed psychologists, and several community agencies that were active in the area after the wildfires. This partnership was designed and implemented on multiple levels, such as in-service training; consultation/supervision; development of tools, resources, educational material, and booklets; collaboration with school administrators and community agencies; and evaluation. Moreover, a SEL-based trauma-specific program (*Mazi+ENA* ["*Together + 1*" Program of psychosocial support and promotion of resilience in the school community: Focusing on psycho-emotional needs of students after a natural disaster]) was designed by the LSP and implemented in the schools of Eastern Attica by the psychologists. The basic objectives entailed strengthening resilience and supporting all students in a period of recovery and adaptation after the fires in eastern Attica. Emphasis was placed on

the students' psychological needs following the experience of the natural disaster. Furthermore, the development of a collaboration and support network between the LSP and school communities in need for interventions on the psychosocial adaptation of pupils who had been exposed to traumatic experiences was promoted (Hatzichristou, 2019a).

Universities as Change Agents
for School Communities

The outcome of the various actions developed and implemented by the LSP highlights the important role that universities can play in bridging the gap between theory, training, research, and practice in the field of school psychology regardless of cultural or contextual factors. In addition, they underline the basic role that university-based centers/laboratories can undertake in addressing the limitations in the provision of school psychological services. Provision of services can be further promoted by universities, schools, community agencies, and professional associations partnering and collaborating at local, national, and international levels.

First and foremost, universities are the main institutions with the responsibility for preparing future professionals in psychology and school psychology. Young professionals should gain the knowledge, skills, and competencies that will help them provide services and respond to the existing and emerging needs of communities. In their graduate courses in school psychology, universities should provide the appropriate modules and opportunities for bridging the gap between academic and practical domains through promotion of partnerships with all school community stakeholders. In addition, the focus on multicultural and cross-cultural issues, the enrichment of the academic context with current theoretical approaches and international literature, the collaboration among universities through exchange of resources, and the provision of lectures or seminars can contribute to providing profound professional development of novice school psychologists. The collaboration of university trainers, professionals, and students at national and cross-national levels is of critical importance to this end (Hatzichristou, 2019b).

The collaboration of faculty members can also promote cross-national approaches with the aim of meeting the needs of children, schools, and families. Exchanging ideas and practices among colleagues within university contexts, and providing consultation in fields of professional expertise, can contribute to the development of university networks which enrich best practices and develop the most effective interventions and action plans. The development of international partnerships and networks for sharing experiences and learning are imperative within a global social justice perspective. Learning from each other at a broader level, and enriching one's knowledge of other cultural and educational settings, ensure that multicultural perspectives are included in practice and promote professional and personal growth. The LSP is actively involved in developing such partnerships (*i.e.,* collaboration with colleagues from other countries, collaboration within international associations, etc.) and is committed to promoting international collaboration based on social justice principles of equality, fairness, respect, and acceptance.

The multidimensional role of universities, in relation to both training and providing school psychology services, is especially important when they are serving vulnerable and at-risk groups. Universities should focus on: a) providing knowledge and skills to identify and support the vulnerable members of school communities; b) enhancing school psychologists' competencies in supporting schools and communities and acting as advocates; c) developing and implementing best practices and trauma-informed interventions when dealing with traumatic events or crisis situations; d) taking initiatives to provide alternative ways of school psychological services in school communities facing adversities, and to respond to the emerging needs according to social, political, or contextual factors; e) developing resources and educational material for professionals and parents; and f) fostering community outreach through activities aiming at building awareness and collaboration among all members of the school community, especially in times of recession.

Conclusion

Training, research, and practice initiated by universities in order to provide services to vulnerable and at-risk groups should be a priority and a main goal of university institutions. Universities are in a key position to meet the mental health needs of school communities and provide school psychological services, especially in settings where no such services are available. Initiatives in developing collaboration and networks among stakeholders and institutions at a national and international level, along with ensuring the provision of a globalized approach in training, can contribute to the development of best practices at a transnational level.

References

Brock, S.E., & Jimerson, S.R. (Eds.). (2013). *Best practices in school crisis prevention and intervention* (2nd ed.). Bethesda, MD: National Association of School Psychologists.

Chafouleas, S.M., Johnson, A.H., Overstreet, S., & Santos, N.M. (2015). Toward a blueprint for trauma-informed service delivery in schools. *School Mental Health*. https://doi.org/10.1007/s12310-015-9166-8

Collaborative for Academic, Social, and Emotional Learning. (2013). *CASEL guide: Effective social and emotional learning programs — Preschool and elementary school edition*. Chicago, IL: Author.

Cowan, K.C., Vaillancourt, K., Rossen, E., & Pollitt, K. (2013). *A framework for safe and successful schools* [Brief]. Bethesda, MD: National Association of School Psychologists. Retrieved from https://www.nasponline.org/resources-and-publications/resources/school-safety-and-crisis/a-framework-for-safe-and-successful-schools

Hatzichristou, C. (2011). *Sholiki Psychologia [Handbook of school psychology]*. Athens, Greece: Typothito.

Hatzichristou, C. (2014). *Symvouleftiki sti sholiki koinotita [Counseling and consultation in the school community]*. Athens, Greece: Typothito.

Hatzichristou, C. (2019a). Connecting University and school communities: A model for provision of school psychology services after natural disasters. In C. Hatzichristou (chair), *Interventions promoting psychosocial adjustment of vulnerable students and positive school climate*. Symposium presented at the 41st International School Psychology Association Conference, Basel, Switzerland.

Hatzichristou, C. (2019b). *Training in School Psychology: Programs of studies and international considerations*. Roundtable presented at the 41st International School Psychology Association Conference, Basel, Switzerland.

Hatzichristou, C. & Lianos, P.G. (2016). Social and emotional learning in the Greek educational system: An Ithaca journey. *International Journal of Emotional Education (special issue), 8*(2), 105–127. Retrieved from https://www.um.edu.mt/library/oar//handle/123456789/14459

Hatzichristou, C. & Polychroni, F. (2014). The preparation of school psychologists in Greece, *International Journal of School & Educational Psychology, 2*(3), 154–165. https://doi.org/10.1080/216 83603.2014.934633

Hatzichristou, C., Adamopoulou, E., & Lampropoulou, A. (2014). A multilevel approach of promoting resilience and positive school climate in the school community during unsettling times. In S. Prince-Embury & D.H. Saklofske (Eds.), *Resilience interventions in diverse communities* (pp. 299–325). New York, NY: Springer. https://doi.org/10.1007/978-1-4939-0542-3_14

Hatzichristou, C., Issari, P., Lampropoulou, A., Lykitsakou, K., & Dimitropoulou, P. (2011). The development of a multi-level model for crisis prevention and intervention in the Greek educational system. *School Psychology International, 32*(5), 464–483. https://doi.org/10.1177/0143034311402918

Hatzichristou, C., Lampropoulou, A. & Lianos, P.G. (accepted for publication). Social justice principles as a core concept in school psychology training, research and practice at a transnational level. *International Perspectives on Social Justice (special issue).*

Hatzichristou, C., Lianos, P.G., & Lampropoulou, A. (2017). Cultural construction of promoting resilience and positive school climate during the economic crisis in Greek schools. *International Journal of School & Educational Psychology*, *5*(3), 192–206. https://doi.org/10.1080/21683603.2016.1276816

Hatzichristou, C., Lykitsakou, K., Lampropoulou, A., & Dimitropoulou, P. (2010). Promoting the well-being of school communities: A systemic approach. In B. Doll, W. Phohl, & J. Yoon (Eds.), *Handbook of prevention science* (pp. 255–274). New York, NY: Routledge.

Hatzichristou, C., Polychroni, F., & Georgouleas, G. (2007). A description of school psychology in Greece. In S.R. Jimerson, T. Oakland, & P. Farrell (Eds.), *The handbook of international school psychology* (pp. 135–146). Thousand Oaks, CA: Sage. https://doi.org/10.4135/9781412976138.n14

Hatzichristou, C., Yfanti, Th., Lianos, P., Lampropoulou, A., Stasinou, V., Georgoulas, G., & Fragiadaki, D. (2018). *Psychosocial support for children and adolescents after a natural disaster: Useful highlights for the psychosocial adjustment of children and adolescents after a fire* (booklet). Athens: Laboratory of School Psychology, Department of Psychology, NKUoA. Uploaded at http://centerschoolpsych.psych.uoa.gr.

Joynes, C. & James, Z. (2018). *An overview of ICT for education of refugees and IDPs*. K4D Helpdesk Report. Brighton, UK: Institute of Development Studies.

Masten, A.S. (2016). Resilience in developing systems: the promise of integrated approaches. *European Journal of Developmental Psychology*, *13*, 1–16. https://doi.org/10.1080/17405629.2016.1147344

Mendelson, T., Tandon, S.D., O'Brennan, L., Leaf, P.J., & Ialongo, N.S. (2015). Moving prevention into schools: the impact of a trauma-informed school-based intervention. *Journal of Adolescence*, *43*, 142–147. https://doi.org/10.1016/j.adolescence.2015.05.017

Rossen, E. & Cowan, K. (2013). The role of schools in supporting traumatized students. *Principal's Research Review, 8*(6), 1–7.

Satici, S.A. (2016). Psychological vulnerability, resilience, and subjective well-being: The mediating role of hope. *Personality and Individual Differences, 102*, 68–73. https://doi.org/10.1016/j.paid.2016.06.057

Tyrer, R.A. & Fazel, M. (2014). School and community-based interventions for refugee and asylum-seeking children: A systematic review. *PLOS One*, *9*(2), e89359. https://doi.org/10.1371/journal.pone.0089359

Walkley, M. & Cox, T. (2013). Building trauma-informed schools and communities. *Children & Schools*, *35*(2), 123–126. https://doi.org/10.1093/cs/cdt007

Wille, A.M. (2016). Facilitating Success for Refugee Students and their Families. *Communiqué*, *44*(6), 35.

World Bank. (2016). *ICT and the education of refugees: A stocktaking of innovative approaches in the MENA region: lessons of experience and guiding principles.* New York: World Bank. Retrieved from https://openknowledge.worldbank.org/bitstream/handle/10986/25172/Lessons0of0exp0d-0guiding0principles.pdf?sequence=1&isAllowed=y

World Health Organization. (2002). *Environmental health in emergencies and disasters: a practical guide.* Geneva: World Health Organization.

Wright, A.G.C., Krueger, R.F., Hobbs, M.J., Markon, K.E., Eaton, N.R., & Slade, T. (2013). The structure of psychopathology: Toward an expanded quantitative empirical model. *Journal of Abnormal Psychology, 122*(1), 281–294. https://doi.org/10.1037/a0030133.

Evidence–Based Practice for Psychologists in Education: A Comparative Study from the Czech Republic, Slovakia, and Slovenia

Mojca Juriševič[a*], Bohumíra Lazarová[b], Eva Gajdošová[c]

[a]*University of Ljubljana, Faculty of Education, Ljubljana, Slovenia*
[b]*Masaryk University, Faculty of Arts, Brno, Czech Republic*
[c]*Pan–European University, Faculty of Psychology, Bratislava, Slovakia*

* Corresponding author. E–mail: mojca.jurisevic@pef.uni–lj.si

Background. In recent decades, discussion has been increasing about the guidelines for psychological interventions, evidence-based interventions (EBI), and evidence–based practice (EBP). These efforts have a longer tradition in medicine and psychiatry, but are increasingly present in the practice of school psychology. The creation, use, and implementation of EBP procedures protects psychologists from intuitive and non–scientific procedures that can harm clients, psychology, and its development.

Objective. The focus of this article is the EBP of school psychologists in the Czech Republic, Slovakia, and Slovenia. We researched to what degree psychologists implement EBP in their work in educational institutions, in which domains they most effectively apply EBP, and what the obstacles and needs are regarding EBP in school psychology.

Design. Two hundred and two school psychologists answered a questionnaire about their application of EBP. The questionnaire contains categories about the sources of EBP, its availability, and the extent to which respondents apply EBP in specific domains of their work.

Results. The data show a low practical significance of differences among respondents from the three countries. Respondents reported the highest values for the reliance of their work on professional cooperation, use of EBP principles in specific domains, and use of professional guidelines. The Pearson correlation indicates positive association among all substantial categories.

Conclusion. The preliminary results show that school psychologists are aware of the importance of applying EBP in practice, and highlight some of the obstacles that prevent them from cultivating psychological science in the interest of education.

Keywords:
school psychology, applied psychology, evidence-based practice, quality assurance, psychological science

Introduction

Psychological assistance to clients — students, parents, and colleagues — does not usually follow strict and pre–defined procedures and instructions. Instead, it requires creativity, experience, and intuition. Various psychological interventions are grounded in tradition and one's own beliefs or in subjective theories; a psychologist does not always get clear feedback on the effects of an intervention. Lilienfeld, Ammirati, and David (2012) speak about the risk of "naive realism": A psychologist knows that an intervention was helpful to the client but does not know why. In fact, the interventions are usually influenced by a variety of other circumstances.

People involved in helping professions, which in our case are school psychologists[1], therefore ask numerous questions, such as what caused the effectiveness of my interventions, how to differentiate professional from intuitive procedures, and what scientific vs. non–scientific practice is. A common component of practice is "working uncertainty", which the psychologist tries to eliminate by a variety of measures and procedures.

Although intuition is considered a standard component of psychological practice, a scientific approach to procedures should not be neglected. A debate about the deep gap between science and practice has been in progress for some time; surveys are being conducted focusing on what the psychologists actually rely on in their practice and whether they know what the effectiveness of their interventions is based on. In recent decades, discussion has been increasing about the guidelines for psychological interventions, evidence–based interventions (EBI), and evidence–based practice (EBP). These efforts have a longer tradition in medicine and psychiatry, but are increasingly present also in the practice of school psychology. The creation, use, and implementation of EBP procedures protects psychologists from intuitive and non–scientific procedures that can harm clients, psychology, and its development.

The main goal of this article is to present an empirical probe into the profession of school psychologists in three European countries: the Czech Republic, Slovakia, and Slovenia. We are studying whether psychologists use scientific findings and evidence about work effectiveness, in which domains they apply EBP, and what limitations and needs they encounter.

Definition of Evidence–Based Practice (EBP), Its History and Principles

EBP is generally referred to as an integration of the best research in clinical expertise and the client's preferences for treatment. Hoagwood and Johnson (2003) use the following definition:

> Evidence based practice refers to a body of scientific knowledge, defined usually by reference to research methods or designs, about a range of service practices. EBP is a shorthand term denoting the quality, robustness, or validity of scientific evidence as it is brought to bear on these issues (p. 5).

---

[1]   For the purpose of this paper the term "school psychologist" is defined as follows: "The psychologist in the educational system is a professional psychologist with a Master's degree in psychology and expertise in the field of education." (*European school psychologists…*, 2010, p. 8)

Evidence–based practice is now an important feature of health–care systems and policy. The beginnings of EBP–based reasoning and approaches are often connected with Cochrane's (1972) argument for rigorous empirical verification of medical interventions in order to maximize the impact of health–care expenditures (as cited in Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996). Interest in EBP–based health–care practice was boosted by the Institute of Medicine (2001), which defined EBP as "the integration of best research evidence with clinical expertise and patient values" (p. 147).

Today, EBP, and the creation and use of practical guidelines, are applied to a variety of medical and other disciplines such as nursing (Correa-de-Araujo, 2016; Mason, Leavitt, & Chafee, 2002), mental health (Geddes, 2000), occupational therapy (Bennett & Bennett, 2000), and physical therapy (Maher et al., 2004). These branches strive to standardize health–care practices with the latest and best scientific findings in order to minimize variations in care and avoid unanticipated health outcomes (Correa-de-Araujo, 2016). Moreover, EBP has been extended to other disciplines such as social work (Cournoyer, & Powers, 2002; Okpych, & L.-H. Yu, 2014; Patterson, Dulmus, & Maguin, 2012), human research management (Briner, 2000), and education (Thomas, & Pring, 2004).

Mostly due to the American Psychological Association's report (2006), EBP received support and general interest from psychologists of various specializations. The association defined evidence–based practice in psychology (EBPP) as:

> The integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences. The purpose of EBPP is to promote effective psychological practice and enhance public health by applying empirically supported principles of psychological assessment, case formulation, therapeutic relationship, and intervention (p. 180).

Cournoyer and Powers (2002) stated that, whenever possible, psychological practice should be based on:

> Prior findings that demonstrate empirically that certain actions performed with a particular type of client or client system are likely to produce predictable, beneficial and effective results. Every client system should be individually evaluated to determine the extent to which the predicted results have been attained as a direct consequence of the practitioner's actions (p. 799).

Experimental methodologies are typical for this approach (White & Kratochwill, 2005).

Besides the term of EBP, psychology and other fields use other related terms that are sometimes not clearly distinguished from each other. The American Psychological Association (APA) declared that it is important to clarify the relation between EBPP and empirically supported treatments (ESTs). Following the APA's (2006) consideration of the EBPP, this approach is regarded as more comprehensive:

> ESTs start with a treatment and ask whether it works for a certain disorder or problem under specified circumstances. EBPP starts with the patient and asks what research evidence will assist the psychologist in achieving the best outcome. In addition, ESTs

are specific psychological treatments that have proved to be efficacious in controlled clinical trials, whereas EBPP encompasses a broader range of clinical activities (e.g., psychological assessment, case formulation, therapy relationships). As such, EBPP articulates a decision–making process for integrating multiple streams of research evidence into the intervention process (p. 273).

In a similar way, White and Kratochwill (2005) mentioned aspects of EBP (or EBPP), such as "empirically validated treatment/interventions" (EVT) and "evidence based intervention (EBI)" (p. 100). The authors stated that the former is used rather seldom (treatment validated by experimental research) and is often substituted by EBI, which "refers to an intervention that meets the criteria of a task force for support on a wide range of methodological and statistical features" (White & Kratochwill, 2005, p. 100).

Shaywitz (2014) provided a simple explanation of the difference between the terms *evidence–based* and *research–based interventions.* As she explained, *research–based* means that there are theories behind the approach, but they have not always been proven. *Evidence–based* means that there is also efficacy to back it up. Therefore, the term EBP is understood more broadly:

> It designates the application of a psychological intervention that has previously been documented to have empirical support and be designated as an EBI. EBP involves evaluation of an intervention in practical context in order to determine if the intervention is effective (White & Kratochwill, 2005, p. 100).

On the one hand, the idea is to use verified and valid theoretical and practical sources (theories, surveys, and guidelines), while on the other, there must be continuous verification or checking that these procedures are effective and beneficial for the client.

The key topic of the present article is the use of EBP in school–psychological practice. School psychologists provide services for various clients (usually students, parents, and teachers) and use various types of interventions in order to achieve different objectives (precautionary procedures, investigation, reeducation, psychotherapy, diagnostics, consulting, etc.). In school psychology, the importance of EBI/EBP was first recognized at the turn of the millennium alongside the creation of Task Force on Evidence–Based Interventions in School Psychology, supported by the APA (Division 16–School Psychology) and the Society for the Study of School Psychology. The main task of these actors was to support EBP, for example, by writing a manual for EBI creation and verification (American Psychological Association, 2006; Liu & Oakland, 2016; Shernoff, Bearman, & Kratochwill, 2017).

In recent years, there has been a shift from the clinical model of school psychology to the social model, stressing a healthy and inclusive climate in schools (Farrell, 2004). A movement towards more comprehensive mental health promotion and intervention in schools is apparent at the global level. Furthermore, it gives an advantage to schools and mental health systems (Schaeffer et al., 2005).

It is not only school psychologists who can take preventive measures against psychological and mental distress and disadvantage, and can support systemic and organizational change aimed at better health of individuals, families, and commu-

nities (APA, 2014). Nonetheless, as Shernoff et al. (2017) stated, school psychologists are uniquely positioned to support the delivery of evidence–based mental health practices in order to address the mental health needs of children and youth. Therefore, their role includes operating as mental health experts within schools and supporting the delivery of comprehensive mental health services across multi–tier systems of support.

In order to take precautions and support a healthy school climate, various programs are created and used in school psychology practice (McKevitt, 2012). Verification of the effectiveness of these programs is one of the key characteristics of EBP. White and Kratochwill (2005) explained that both EBI and EBP include professional decision–making about client care and intervention. They summarized four sources for EBI in practice: (a) research literature on basic intervention as published in professional journals, (b) consensus or expert panel recommendations, (c) reviews of single interventions or programs undertaken by professional groups or other bodies, and (d) literature reviews and synthesis documents.

Besides the integration of best research findings in psychological practice, attention is given to the validity of psychological testing and assessment, clinical expertise, locating and evaluating research, critical thinking, communication of assessment findings and implications, and so forth. But the application of EBP in psychology must also take into account the characteristics of clients, their culture, and their preferences. The use of EBP and related guidelines does not mean that client examination and care cease to be individualized and client–targeted. The application of EBP is therefore an individualized and dynamic process (American Psychological Association, 2006; Bornstein, 2017).

When constructing our questionnaire (see section on Research Methodology), we were relying on the EBI definitions mentioned above. As for the EBP sources, we worked with empirical research or school–based empirical research and evaluation, expert consulting and supervision, scientific findings, and practical guidelines. Particular sections in the questionnaire reflect the categories of these sources.

Support for EBP Implementation

The use of scientific findings, guidelines, and manuals in practice is certainly useful for bridging the gap between theory and practice, and it plays an important role in the support of early–career professionals (Schaeffer et al., 2005). Nevertheless, their implementation faces diverse challenges. EBP implementation probably has no opponents, strictly speaking, but some authors have identified implementation risks and limitations and have suggested different options for support (White & Kratochwill, 2005). Obstacles in EBP implementation can be divided into individual and organizational ones (Black, Balneaves, Garossino, Puyat, & Qian, 2014), even if the sources of these obstacles cannot always be clearly differentiated.

Individual obstacles usually concern incorrect understanding of EBP. Evidence–based interventions and the use of guidelines and manuals are sometimes considered by some practitioners as "cookbooks". Practitioners may oppose the idea of replacing professional assessment and decision–making with instructions and manuals. Their argument is that the use of EBI ignores the objectives, needs, and values of clients (Cook, Schwartz, & Kaslow, 2017). Other limitations include

practitioners' lack of knowledge and skills to conduct surveys and their lack of awareness of relevant research and guidelines. At the same time, good guidelines are not always available (their availability differs by country; the best availability will probably be in countries where practitioners are able to read sources in English). Therefore, unavailability and, at times, disputed quality of sources can also be considered as an obstacle. High–quality, well–elaborated, and copyrighted sources may also be too expensive for psychologists or schools (Schaeffer et al., 2005). Moreover, even the best tools have to be tested and verified in the specific context in which the psychologist works, which is a time–consuming process. Several authors have mentioned the lack of time to implement change, explore, and put new ideas and procedures into practice, as another limitation (see Black et al., 2014). As typical organizational obstacles, practitioners mentioned a rigid organizational culture and lack of support from colleagues, supervisors, other specialists, and leaders.

In recent years, numerous authors have dealt with the identified risks and have proposed various options of support for EPB implementation, and not only for school psychology. Attention is given to training of psychologists for EBP implementation, support from leaders of organizations, and change of organizational culture in favor of EBP. In fact, initiatives and efforts of individuals may be insufficient; successful implementation is hardly possible without external support from both organizations and policymakers (professional associations and communities, political institutions, donors, etc.).

Schaeffer et al. (2005) are convinced that EBP implementation works only if the actors are committed to and confident in EBP; therefore, it is important that the development is bottom–up and that the organizational culture is considered. People must be aware of the objectives and the meaning of EBP implementation and should know that they can rely on supportive leaders, whether in terms of finance, training, or feedback. Furthermore, mentoring programs are an effective way to implement EBP; they provide continuous support to practicing school psychologists (Black et al., 2014).

EBP implementation should focus on education of practitioners, both pre-service university programs and in–service, in the framework of continuous professional development (CPD) courses. One of the related topics is the scientist–practitioner model of graduate education in psychology (see Black et al., 2014; Hayes, Barlow, & Nelson-Gray, 1999). Different countries pay different attention to EBP and EBI education of school psychologists. Professional literature mainly focuses on training programs in the US, which are supported by professional organizations (e.g., APA Division 16, the Society for the Study of School Psychology, and NASP). In other countries, articles on school psychologists' EBP education are available at national levels, although graduate training in EBP is considered crucial in ensuring that the next generation of practicing school psychologists enters schools with knowledge, skills, and experience for the implementation of effective practices (Shernoff et al., 2017).

It has been mentioned that transnational research and research at the workplace must be strengthened in order to create and verify new procedures. Attention must be given to methodological aspects of creation and verification of new

procedures (Correa-de-Araujo, 2016). The need for research is mentioned by Kratochwill and Shernoff (2004) in their proposed strategy to promote EBIs for school psychologists. They suggest a development of practice–research networks in school psychology and an expanded methodology for evidence–based practices that takes into account the practical context of EBI. They also propose guidelines that school psychology practitioners can use in implementing and evaluating EBIs in practice, in creating professional development opportunities for practitioners, researchers, and trainers, and in forging partnerships with other professional groups involved in the EBI agenda.

Support for EBP and EBI implementation in specific countries, however, requires an analysis of the existing state regarding both procedures. For this reason, we conducted a survey that would show us how school psychologists in the countries involved in this study use sources typical for EBP.

The Present Study

Researching EBP in the psychology of education, the topic of this paper, originally appeared in the framework of an international group of psychologists in education, organized as the Standing Committee of Psychology in Education at the European Federation of Psychologists' Associations (EFPA). Discussions about the future of European psychology in education led to the conclusions that the practice of school psychologists in different EU countries should be first clearly understood, and that a plan of appropriate international and national activities to develop and enhance the domain should be established on the basis of these findings.

It was meetings within the SC EFPA Psychology in Education that prompted us to carry out a survey that interconnected three Slavic countries: the Czech Republic, Slovakia, and Slovenia. These are Central European countries, rather small, with certain similarities in their history, culture, as well as economic development. The GDP per capita in PPS–Index (Purchasing Power Standards) is 90 for the Czech Republic, 87 for Slovenia, and 78 for Slovakia (GDP, 2018); the total general government expenditure on education is 4.6 % of GDP in the Czech Republic, 3.8 % in Slovakia (provisional), and 5.4 % in Slovenia (total, 2017). Also, the way in which educational psychologists are employed is very much the same; we have mainly addressed those who work directly in schools and therefore can be called school psychologists. The Czech Republic and Slovakia even share a common tradition as to the origins of school psychology. This discipline began to develop only in the post–revolutionary 1990s when the two countries split, but close cooperation continued and still continues. In Slovenia, educational psychology, or school psychology, has had a longer tradition. In all three countries, school psychologists work directly in schools and collaborate more or less closely with institutions providing services for schools. In the Czech Republic and Slovakia, school psychologists (who work directly in schools) and consultant psychologists (who work in consultancy centers), are strictly distinguished from each other. In Slovenia, there are psychologists who work both in schools, in the framework of school counselling services, as well as in counselling centers for schools, which are regionally located (Eurydice, 2019; Gregorčič Mrvar & Mažgon, 2017). For this reason, the Slovenian sample is

somewhat different, so we use both terms in our article: school psychology and educational psychology.

For the Czech Republic and Slovakia, it is typical that financing for psychologists in education is project–related, so there are one–off job commitments in these countries, while Slovenia has more transparent financing and more stable jobs in this respect.

In the present study, the authors researched how school psychologists apply EBP. The main aim of the research is to analyze EBP in school psychologists' practical work. Therefore, three basic research questions were defined: (a) How do school psychologists apply EBP in their everyday practice in the three countries? (b) In which domains of their work do they apply EBP most effectively? (c) What are the perceived obstacles to and needs for the EBP application?

Method

Participants

The participants were 202 psychologists from three European countries: the Czech Republic (41%), Slovakia (32%), and Slovenia (27%). They were recruited to participate in the study by the authors as being close at hand (convenient sampling). They were predominantly female (93%), aged between 31 and 40 years (36%), with approximately 5 years of practical experience in education (48%). *Table 1* and *Table 2* summarize the demographic data by country.

Table 1

Sample description — participants' sex, age, and years of professional experience

	Czech ($n=82$)	Slovakia ($n=65$)	Slovenia ($n=55$)
Sex (%)			
Female	88.3	95.4	97.9
Age (%)			
25 years or less	7.8	7.7	0
26–30 years	20.8	35.4	8.3
31–40 years	37.7	44.6	29.2
41–50 years	18.2	12.3	31.3
50 years or more	15.6	0	31.3
Years of professional experience in education (%)			
5 years or less	53.2	72.3	8.3
6–10 years	35.1	23.1	18.8
11–20 years	7.8	4.6	31.3
21 years or more	3.9	0	41.7

Table 2

Sample description — participants' workplace

	Czech (*n* = 82)	**Slovakia** (*n* = 65)	**Slovenia** (*n* = 55)
Type of school (%)			
Elementary school	69	69.2	52
Upper secondary school	15	20.0	33
Combined — more types of schools	12	10.8	2
Other	4	0	13

Note. Other = educational programs for students with special needs; educational programs for adults; educational centers.

Materials

For the purpose of this study, a new five–part questionnaire (EBP–PiE) for measuring the use of EBP in psychology in education was constructed. It contains 22 items with statements about EBP, which we classified in seven categories on the basis of contemporary empirical and theoretical findings as well as our expertise.

The first part of the questionnaire was based on White & Kratochwill's (2005) conclusions referring to (a) research literature, (b) consensus or expert panel recommendations, (c) reviews of single interventions or programs, and (d) literature reviews and synthesis documents. With reference to this concept of EBP, the first part of the questionnaire contains five categories related to the sources school psychologists rely on and the extent to which they apply EBP. These categories are: (1) research findings and *literature* review (items 1, 8, 15); (2) *professional* guidelines at local or national level (items 2, 9, 16); (3) *workplace*–based empirical research (items: 3, 10, 17); (4) *cooperation* with professionals and peer review (items 4, 11, 18); and (5) *evaluation* of the efficacy of interventions (items 5, 12, 19). We were interested in both research–based practice, i.e., primary support from scientific findings of most recent research (categories 1, 2 and 3) and evidence–based verification of practice (categories 4 and 5).

The second part of the questionnaire contains items about the availability of these sources (the sixth category, entitled *availability* of sources, with items 6, 13, 20); therefore, it deals with support for EBP use as commented on above.

We also wanted to identify the work domains in which the psychologists use most of the EBP principles. Part three of the questionnaire was therefore focused on the identification of the extent to which EBP principles are used by psychologists in specific domains (the seventh category, entitled *use* of EBP principles, with items 7, 14, 21, 22). These domains were defined according to legislation of the Czech Republic, outlining the work domains of school psychologists as prevention, consulting, reeducation and therapeutic interventions, diagnostic procedures, and provision of methodological support for teachers (Regulation, 2005). These domains of the work of school psychologists, or educational psychologists, are identified in such a general manner that they are transferable to other contexts. We

assumed that these domains would be more or less the same in the other two countries (4 items: 7, 14, 21, 22). Responses are on a 6–point Likert scale (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Slightly Disagree*, 4 = *Slightly Agree*, 5 = *Agree,* 6 = *Strongly Agree*), with higher scores indicating stronger endorsement of the statement. Three items were negatively worded (items 15, 16, and 17). The 22 items' reliability based on internal consistency for all three samples was satisfactory: $\alpha_{Slovenia}$ = .85; α_{Czech} = .86; and $\alpha_{Slovakia}$ = .78. The fourth part of the questionnaire contains three open–ended questions about the perceived limitations and needs in the implementation of EBP.

The last part of the questionnaire consists of a self–report on four demographic variables: age, sex, years of professional experience, and workplace.

In line with the recommendation of Tabachnick & Fidell (2007) about the requirements of performing exploratory factor analysis (i.e., one large sample at the same point in time), this statistical procedure was not performed on the three small samples of this study. Therefore, we employed the Pearson correlation coefficient to assess the construct validity (Table 4 in the Appendix), indicating positive association among seven substantial categories (.29 ≤ r ≤ .64). The majority of values showed statistically significant relationships as theoretically expected. All three subsamples showed statistically significant and moderate strength of correlation between the categories *evaluation* and *use* (r_{total} = .55, p ≤ .01), *literature* and *use* (r_{total} = .51, p ≤ .01), and *availability* and *use* (r_{total} = .50, p ≤ .01) (Hempfill, 2003). There was no relationship found between *literature* and *cooperation* and between *workplace* and *cooperation* (r_{total} = .07, p = .30; and r_{total} = .06, p = .43, respectively). Overall, the results suggest that the categories are substantially related, but still meaningfully different because the relative share of the variance for particular variables was not explained (unpredicted) by the given relationships.

Procedure

Two methods of data collection were used for questionnaire EBP–PiE. The questionnaire was prepared first in English as the *lingua franca* of the authors and was subsequently translated into Slovenian, Czech, and Slovak. Web–based administration was prepared using the 1CS**,** the Slovenian open source application for online surveys, for Slovenian and Czech respondents, and paper–and–pen administration for the Slovak respondents. This decision was based on our experience with surveys in the national contexts and was supported by the assumption that it will not have a significant impact on the results of this study (Brug, Campbell, & van Assema, 1999; Ebert, Huibers, Christensen, & Christensen, 2018).

All data were collected over a 5–week period from April to May 2019. In the Czech Republic, the questionnaires were distributed in association with the directory of the Association of School Psychology and the directory of the National Institute for Education, which coordinates projects for financing and support of school consultants. A Facebook page for school psychologists, *Školní psychologové,* was also used. We received 82 completed questionnaires, which corresponds to approximately 16% of the school psychologists in the Czech Republic. In Slovakia, the questionnaires were distributed to school psychologists with the help of the Slovak School Psychology Association and by the Facebook club of school psychologists.

We received 65 completed questionnaires, which corresponds to approximately 20% of the school psychologists in Slovakia. In Slovenia, the questionnaires were distributed via the mailing list of the Division of Psychologists in Education of the Slovenian Psychologists' Association. We received 55 completed questionnaires, which corresponds to approximately 20% of the school psychologists in Slovenia.

Quantitative data was analyzed using the statistical program IBM SPSS Statistics 20 (IBM Corporation, 2016). The analysis was limited to descriptive and inferential statistics due to the small samples in each country. The results were supported by a qualitative analysis of the answers to open questions in order to get insight into the "lived experience" of the respondents (Silverman, 2000; Strauss & Corbin, 1999).

Results and Discussion

The main focus of the present study was to gain insight into how psychologists in the European context (three different countries) apply EBP in their everyday practice in schools. On the one hand, EBP is considered the highest standard of care (Hamill & Wiener, 2018), and on the other, we observed a lack of this information at the national levels as well as internationally. This is in spite of the fact that understanding the quality of professional work of psychologists in education is crucial for evaluation, enhancement, and development of psychology in the public interest. The results of this study are preliminary descriptive findings, based on the data collected on small samples of respondents from three countries. In the future we would expect this research to develop progressively and involve different European national contexts.

EBP in School Psychologists' Work

Table 3 reports the means and standard deviations for scores on the EBP–PiE items, as well as coefficients of skewness and kurtosis.

Table 3

Descriptive statistics for 22 items of the EBP–PiE by country

	Country	*M*	*SD*	Skewness	Kurtosis
1. My professional decisions and procedures are based on new theories that I have learned about from professional books and journals, and at conferences.	Czech	4.15	1.02	−.59	1.11
	Slovakia	4.23	1.18	−.41	−.25
	Slovenia	4.71	0.74	−.34	.09
2. My professional work is based on practical professional guidelines, e.g., assessment tools, intervention steps.	Czech	4.48	0.86	−.86	1.01
	Slovakia	4.32	1.12	−.88	.56
	Slovenia	4.78	0.88	−1.27	2.51
3. My professional work is based on the results of my own workplace research (surveys, interviews, experiments, etc.).	Czech	4.07	1.21	−.40	−.55
	Slovakia	3.63	1.29	−.74	−.58
	Slovenia	4.31	1.07	−.75	−.04

	Country	*M*	*SD*	Skewness	Kurtosis
4. I discuss my individual cases with my colleagues and other experts at my workplace.	Czech	4.82	1.07	−.50	−.72
	Slovakia	4.69	1.42	−1.07	.38
	Slovenia	5.20	1.01	−1.55	2.40
5. I regularly evaluate the effectiveness of my practice.	Czech	4.27	1.05	−.24	−.32
	Slovakia	4.14	1.37	−.60	−.42
	Slovenia	4.51	1.02	−.52	.35
6. In the case of work uncertainty, I get sufficient professional support from colleagues or others.	Czech	3.99	1.31	−.42	−.28
	Slovakia	3.92	1.70	−.33	−1.18
	Slovenia	4.65	1.04	−.89	.61
7. My preventive work is based on evidence (guidelines, literature, research results).	Czech	4.18	1.00	−.69	.27
	Slovakia	4.14	1.07	−.13	−.67
	Slovenia	4.76	0.72	.08	−.47
8. My professional decisions and procedures are based on new research results that I have learned about from professional books and journals, and from experts at conferences.	Czech	4.01	1.09	−.26	24
	Slovakia	3.75	1.56	.01	−.54
	Slovenia	4.43	1.13	−.94	1.66
9. My professional work is based on analysis of my previous professional work (evaluation, reflection).	Czech	4.77	0.91	−.84	.96
	Slovakia	4.91	0.90	−.89	.96
	Slovenia	5.00	.84	−.98	1.92
10. My professional work is based on recognized methodology and instruments.	Czech	4.32	1.20	−.77	.57
	Slovakia	3.72	1.40	−.26	−.67
	Slovenia	4.85	1.04	−1.02	1.11
11. I consult external experts about my practice and individual cases.	Czech	4.49	1.10	−.34	−.45
	Slovakia	4.52	1.32	−.93	.29
	Slovenia	4.85	0.80	.05	−.97
12. I use validated evaluation tools to evaluate my own work.	Czech	3.61	1.38	.07	−.77
	Slovakia	3.23	1.42	.22	−.85
	Slovenia	3.96	1.25	−.82	.62
13. I have sufficient access to new theoretical and empirical findings in psychology.	Czech	3.84	1.17	−.16	−.82
	Slovakia	3.68	1.37	.12	−1.08
	Slovenia	4.18	1.17	−.30	−.60
14. My interventions are based on validated evidence (guidelines, literature, research results).	Czech	4.40	0.90	−.69	.86
	Slovakia	4.48	0.92	−.12	−.22
	Slovenia	4.76	0.72	.72	.02

	Country	*M*	*SD*	Skewness	Kurtosis
15. My professional decisions and procedures are based on my own intuition and the personal experience that I get from my practice.	Czech	2.13	0.76	.44	.11
	Slovakia	2.08	0.96	1.50	4.14
	Slovenia	2.24	0.94	.88	1.20
16. My professional work is based on my intuition and experience without special guidelines.	Czech	3.70	1.18	−.34	−.41
	Slovakia	4.06	1.44	−.43	−.86
	Slovenia	3.98	1.13	−.20	−.94
17. My professional work is not based on documentation and analyses of my interventions.	Czech	4.08	1.27	−.91	.37
	Slovakia	4.20	1.51	−.49	−.88
	Slovenia	3.85	1.38	−.08	−1.05
18. I look for regular supervision and other forms of reflection about my practice.	Czech	4.29	1.28	−.25	−1.05
	Slovakia	4.68	0.97	−.15	−.94
	Slovenia	3.96	1.36	−.07	−.92
19. I ask for feedback about my work from pupils, teachers, parents, or others.	Czech	4.54	1.07	−.60	.08
	Slovakia	4.58	1.28	−.76	−.01
	Slovenia	4.56	1.10	−.51	−.18
20. I have sufficient access to practical professional guidelines and instruments.	Czech	3.67	1.30	.01	−.80
	Slovakia	3.02	1.32	.18	−.67
	Slovenia	4.09	1.16	−.33	−.62
21. Assessments I do in my school are based on validated evidence (guidelines, literature, research results).	Czech	4.51	1.06	−.52	−.15
	Slovakia	4.46	1.09	−.79	.92
	Slovenia	4.64	0.9	−.63	.36
22. Methodical support that I provide to teachers in my school is based on validated evidence (guidelines, literature, research results).	Czech	4.44	0.98	−.59	.90
	Slovakia	4.37	1.08	−.56	.48
	Slovenia	4.65	0.89	−.41	.36

As can be observed, means ranged from 2.08 to 5.00, with means on the positive items (for example, item 9 on the value of self–evaluation and reflection) higher than means on the negative items (for example, item 15 on the value of personal intuition and experience), in keeping with the literature. Most of the scores were not substantially skewed or kurtotic, implying normal distribution of the data; the only exception was item 15 for the Slovak respondents and items 2 and 4 for the Slovenian respondents. On these items, respondents' answers were unexpectedly high, probably due to the extent of their professional experience and workplace conditions (see further discussion, below). Figure 1 shows the items grouped into seven substantial categories.
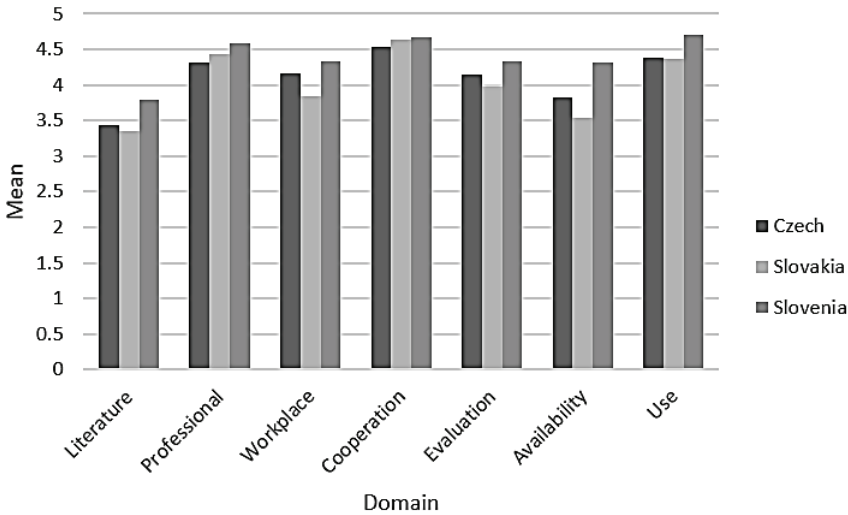
Figure 1. EBP–PiE domains by country

On average, the calculated eta squared implies low practical significance of differences among respondents from the three countries ($0.005 \leq \eta^2 \leq 0.08$) (Lakens, 2013). Respondents reported the highest values for the reliance of their work on professional *cooperation* ($M_{total} = 4.60$; $\eta^2 = 0.005$), which means that they repeatedly reflect on their practice and consult with other professionals on different professional issues. The second highly represented category was the *use* of EBP principles ($M_{total} = 4.46$; $\eta^2 = 0.04$), which explains the relatively consistent everyday use of validated evidence such as guidelines, literature, and research results in the domains of psychological assessments, prevention, intervention, as well as methodological support provided to teachers. Based on respondents' own professional experience ($M_{total} = 4.42$; $\eta^2 = 0.03$), the use of *professional* guidelines seems to be equally important. On the other hand, professional *literature* that would follow new theoretical and empirical findings as a source of EBP, and the *availability* of literature, professional findings, and professional support were represented with relatively low values and show a practical significance of medium size between respondents from different countries, in contrast with our initial expectation ($M_{total\_literature} = 3.50$; $\eta^2_{literature} = 0.06$, and $M_{total\_availability} = 3.87$; $\eta^2_{availability} = 0.08$). Figure 1 shows that Slovenian school psychologists reported the highest average values on both categories and that the Slovak psychologists reported the lowest values; this could be connected with our hypothesis about country context and extent of professional experience (see the description of the sample in the section on Method). Nevertheless, the categories of *workplace*–based empirical research and the *evaluation* of the effectiveness of interventions show average representations among all three subsamples ($M_{total\_workplace} = 4.11$; $\eta^2_{workplace} = 0.06$, and $M_{total\_evaluation} = 4.14$; $\eta^2_{evaluation} = 0.02$). This result is in contradiction with Hamill & Weiner's (2018) finding that psychologists with more years of practice had more negative attitudes towards EBP in comparison with their younger colleagues. Those authors did underline, however, that the empirical results from different studies are still inconclusive and that further research is needed to confirm the

impact of individual differences such as years of experience on attitudes towards EBP as well as on the implementation of EBP in (school) psychologists' practice.

Barriers and Needs Perceived in EBP Application

Answers to the open questions in the last part of the questionnaire did not differ greatly among countries, but rather they complemented each other. We categorized answers according to the similarities in meaning by using open coding technique (Blair, 2015; Strauss & Corbin, 1999). Qualitative analysis resulted in eight categories of expressed obstacles and needs:

- **Time:** It is most important for school psychologists to work with clients, so they very often have negative comments about the administrative workload. In recent years, this has mainly been the documentation of pupils with special educational needs (particularly typical for the Czech Republic, where a new system of supportive measures for these pupils was implemented a short time ago), GDPR documents, project applications, and so on. In the Czech Republic and Slovakia, school psychologists often work part–time and at multiple schools. This limits their capacity to work with varied theories and surveys, because they mainly want to devote their time in the school, short as it is, to their clients.

- **Work overload:** Respondents in all three countries referred to the workload that the nature of their profession generates. Their job is diverse and dynamic, and they feel they play the role of "servants" or even "supermen". They feel they do not have enough time and energy for EBP application.

- **Support and appreciation:** School psychologists reported that they often lack feedback and, in particular, appreciation, either from parents or colleagues. They would also welcome appreciation from school leaders and consultants in the schools. In this respect, there is a certain difference between school psychologists, who work in schools only, and educational psychologists, who spend a considerable portion of their time (if not all of it) in regional advisory centers for schools. This system of support for schools is similar in all three countries, but there are no data available as to how many of our respondent psychologists work in schools only and how many of them also cooperate closely with regional advisory centers.

- **Education and continual professional development:** School psychologists reported that they lack a system of accessible and high–quality in–service education, conferences aimed at practice, seminars, and local networks. They think that undergraduate education is of a too general nature. Czech psychologists appreciated the social networks of school psychologists, but said they lacked specialized training programs in school psychology, as there is only a general bachelor's and master's education in psychology.

- **Material and information:** The respondents would appreciate high–quality and dynamic websites, comprehensive methods and guidelines, high–quality books, nationwide research or data from foreign research applied in various cultures, examples of good practice and models, professional journals, inexpensive tools, and other resources. Such requirements appeared in the questionnaires from all three countries. These countries are small; there are not many high–quality resources in their national languages available, and the psychologists are not always able or do not always want to study sources written in English.

- **Supervision:** School psychologists regret the lack of methodological support and mentoring (not only for early–career psychologists); they would welcome periodical and even some regular supervision.

- **Collaboration:** School psychologists are often the only specialists educated in their field and they sometimes feel that other people in the schools do not understand them. They would appreciate a more collaborative relationship with teachers, school psychologists in other schools and advisory centers, doctors, clinical psychologists, academics, etc. Certainly, this situation is different for those who collaborate with regional advisory centers, either part–time or in close cooperation.

- **Financial support:** School psychologists lack financial resources for diagnostic testing, training, books, and other materials. Furthermore, financing of school psychologists in the Czech Republic and Slovakia is not transparent; many of them are paid from European projects, while schools decline to pay any additional costs for psychologists' education, literature, and materials from their budgets.

To conclude, it seems that the participating countries lack both a system of employing and financing school psychologists and a system for their education and support, especially in the Czech Republic and Slovakia. During the analysis, we encountered some differences in the values and answers of the three subsamples of this study, assuming that these are primarily due to the age of the respondents (Slovenians were on average the oldest and Slovaks the youngest group) or the years of experience with practicing professional psychology in schools (41.7% of Slovenian respondents reported 21 years or more years of professional experience, while the highest percentage reported by Czech and Slovak respondents was about 5 years of professional experience or less [53.2% and 72.3%, respectively]). These differences in age and experience demonstrate the longer tradition and higher stability of the system in Slovenia and a certain resemblance of the Czech and Slovak developments in school psychology.

Hamill and Weiner (2018) speculated that individual differences such as years of practice, training in EBP, national setting of professional practice, or other variables might influence psychologists' attitudes towards EBP, just as in other health professions. We assume that the differences can be further explained by different systems of school psychologists' employment. In the Czech Republic, for example, school psychologists often hold part–time or short contracts (they are often paid from project budgets) and work in two schools at the same time, whereas in Slovenia they are employed as full–time counsellors in a counselling service at a particular educational institution, either a preschool or a school. Moreover, the work of school psychologists seems to be "multi–tasking" and in answers to open questions, the respondents often expressed a "lack of time" for applying EBP. In addition, their professional roles may vary significantly from school to school, from region to region, and between different national and educational contexts (Hamill & Weiner, 2018; Hosp & Reschly, 2002).

Finally, it is important to highlight the fact that school psychologists from different countries may have limited access to research, guidelines, or theories due to language barriers and lack of national sources. Respondents from relatively small

European countries participated in the study. Not all of them are able to read professional literature in English. In answers to open questions, they often mentioned the lack of national research and guidelines, and pointed out that not all research data and guidelines are applicable to their practice. This supports the notion that school psychology is in general a relatively new discipline (D'Amato, Zafiris, McConnell, & Dean, 2011; DuPaul, 2011).

When answering open questions, some respondents pointed out that EBP was not a major topic for them. They felt that the personality of the psychologist, his/her intuition, and the support and leadership/mentoring available are more important. They also often emphasized the gap between theory and practice. They reported that they frequently do not understand the results of a particular study and/or that some of these results are not applicable in practice (Kehle & Bray, 2005).

Conclusion

Intuition and individualized interventions are important aspects of working with individual clients or groups in all helping professions and will always remain irreplaceable in school psychology practice. Nevertheless, backing up practice with scientific and practical evidence is a big challenge. It is necessary to study EBP in school psychology in various countries so as to create, translate, adapt, and verify new findings and practical guidelines. Connections between academics and practical platforms can help in this respect. Scientists at universities and students of psychology can support practitioners to look for, apply, and develop relevant methodologies for the evaluation of the effectiveness of procedures. Therefore, the aim is not merely to enhance methodology and EBP development, but also to create opportunities for the exchange of experience, individual and collective mentoring, and development of appropriate attitudes towards EBP (Hamill & Weiner, 2018). Kratochwill and Shernoff (2004) accentuate the necessity to share responsibilities for such a demanding challenge as EBP development in school psychology among researchers, trainers, and practitioners. The Standing Committee Psychology in Education at EFPA has the potential to connect European academics and practitioners in school psychology and has already started to facilitate the exchange of experience, realizing that cross–cultural research plays an important role.

The results of the present research also show the importance of the stability of school systems for the use of EBP principles. It is important for school psychologists to be employed full–time, with long–term contracts and transparent financing, and to be relieved to a certain extent from workload (administrative tasks, provision of days off for study, supervision, meetings, and so on). If psychologists work under permanent stress and uncertainty, they do not have enough time and willingness to seek out and study professional literature and to create and verify new procedures.

Limitations

We are aware of the limitations of this research. First, the samples were relatively small, although representing a reasonable percentage of school psychologists in

the countries considered, for the research was carried out in relatively small countries with rather low numbers of school/educational psychologists. A second limitation is the translation of the questionnaire into three languages, which may fail to capture the meaning of the items in all their nuances, despite our cooperation with qualified translators. The results indicating the use of evidence in practice do not address the validity and quality of theories, methodologies, guidelines, and other tools applied. We also have to consider what features are common to all our respondents who were willing to complete the questionnaire and reflect on their work. Although we do not want to express distrust, it is necessary to take into account the respondents' attitudes to completing a questionnaire. That is, the use of evidence in practice is a positive feature of the profession, so the results may look more positive than reality. The influence of social desirability could also have partly biased the results. Finally, it should be noted that the respondents were predominantly women, which skewed the gender balance and possibly influenced the results (for a review, see Hamill & Weiner, 2018).

To conclude, this study shows that school psychologists who participated in the study are aware of the EBP in their psychological work at education institutions, meaning that they apply EBP to a certain degree in their everyday practice. From the results, it can be assumed that they are effective in (1) consulting and discussing their practice with other professionals (*cooperation* category), (2) using validated evidence while doing preventive, consultative, and other types of interventions, diagnostics, and providing support for teachers (*use* category), and (3) following professional guidelines based on their own professional experience (*professional* category). The results also imply that many of the respondents are not aware of the contemporary theoretical and empirical findings from literature (*literature* category) and report weak access to the domains of professional activities mentioned above (*availability* category). Finally, the qualitative analysis shows that the respondents face different barriers in accomplishing their professional needs, including EBP implementation, among them the lack of time, resources and financing, and social/professional support and collaboration. The respondents cope with an excessive workload due to the complexities they face in their everyday practice.

Nevertheless, we are very positive about these research findings, even if they are based on preliminary descriptive results. In the coming year, we are going to discuss the findings with the respondents and other colleagues, addressing key professional problems in the framework of national contexts and transnationally. Equally important in this respect will be the development of appropriate attitudes of school psychologists towards EBP, because the research established a positive association with attitudes and engagement in EBS practice and training for a correct implementation of EBP (Hamill & Wiener, 2018). Moreover, we intend to develop specific professional guidelines for the systematic application of EBPP in preschool institutions and schools and to develop and enrich the presented research in its conceptualization and methodology, inviting colleagues from different European countries to collaborate. We plan to further develop our research and to contribute to the quality of the EBP of school psychologists in Europe and beyond.

References

American Psychological Association (APA), Presidential Task Force on Evidence-Based Practice. (2006). Evidence-based practice in psychology. *American Psychologist, 61*(4), 271–285. https://doi.org/10.1037/0003-066X.61.4.271

APA (2014). Guidelines for prevention in psychology – American Psychological Association. *American Psychologist, 69*(3), 285–296. https://doi.org/10.1037/a0034569

Bennett, S., & Bennett, J. W. (2000). The process of evidence-based practice in occupational therapy: Informing clinical decisions. *Australian Occupational Therapy Journal, 47,* 171–180. https://doi.org/10.1046/j.1440-1630.2000.00237.x

Black, A.T., Balneaves, L.G., Garossino, C., Puyat, J.H., & Qian, H. (2014). Promoting evidence-based practice through a research training program for point-of-care clinicians. *The Journal of Nursing Administration, 45*(1), 14–20. https://doi.org/10.1097/NNA.0000000000000151

Blair, E. (2015). A reflexive exploration of two qualitative data coding techniques. *Journal of Methods and Measurement in the Social Sciences, 6*(1), 14–29. https://doi.org/10.2458/v6i1.18772

Bornstein, R.F. (2017). Evidence-based psychological assessment. *Journal of Personality Assessment, 99*(4), 435–445. https://doi.org/10.1080/00223891.2016.1236343

Briner, R. (2000). Evidence-based human resource management. In L. Trinder & S. Reynolds (Eds.), *Evidence-based practice: A critical appraisal* (pp. 184–211). Oxford, UK: Blackwell Science. https://doi.org/10.1002/9780470699003.ch9

Brug, J., Campbell, M., & van Assema, P. (1999). The application and impact of computer-generated personalized nutrition education: A review of the literature. *Patient Education and Counseling, 36*(2), 145–56. https://doi.org/10.1016/S0738-3991(98)00131-1

Cook, S.C., Schwartz, A.C., & Kaslow, N.J. (2017). Evidence-based psychotherapy: Advantages and challenges. *Neurotherapeutics, 14*(3), 537–545. https://doi.org/10.1007/s13311-017-0549-4

Cochrane A.L. (1972). *Effectiveness and efficiency: Random reflections on health services.* London, UK: Nuffield Provincial Hospitals Trust.

Correa-de-Araujo, R. (2016). Evidence-based practice in the United States: Challenges, progress, and future directions. *Health Care Women Int.*, *37*(1), 2–22. https://doi.org/10.1080/07399332.2015.1102269

Cournoyer, B., & Powers, G. (2002). Evidence-based social work: The quiet revolution continues. In A. R. Roberts & G. Greene (Eds.), *Social workers´ desk reference* (pp. 798–807). New York, NY: Oxford University Press.

D'Amato, R.C., Zafiris, C., McConnell, E., & Dean, R.S. (2011). The history of school psychology: Understanding the past to not repeat it. In M. A. Bray & T. J. Kehle (Eds.), *The Oxford handbook of school psychology* (pp. 9–46). New York, NY: Oxford University Press. https://doi.org/10.1093/oxfordhb/9780195369809.013.0015

DuPaul, G.J. (2011). School psychology as a research science: Are we headed in the right direction? *Journal of School Psychology 49*, 739–744. https://doi.org/10.1016/j.jsp.2011.11.001

Ebert, J.F., Huibers, L., Christensen, B., & Christensen, M.B. (2018). Paper- or web-based questionnaire invitations as a method for data collection: Cross-sectional comparative study of differences in response rate, completeness of data, and financial cost. *Journal of Medical Internet Research*, *20*(1). https://doi:10.2196/jmir.8353

Eurydice (2019, March 27). *Slovenia: Guidance and counselling in early childhood and school education.* Retrieved from https://eacea.ec.europa.eu/national-policies/eurydice/content/guidance-and-counselling-early-childhood-and-school-education-68_en

European school psychologists improve lifelong learning — ESPIL (2010). *Education, training, professional profile and service of psychologists in the European educational system.* Brussels, Belgium: European Federation of Psychologists Associations (EFPA).

Farrell, P. (2004). School psychologists: Making inclusion a reality for all. *School Psychology International, 25*(1), 5–19. https://doi.org/10.1177/0143034304041500

Geddes, J. (2000). Evidence-based practice in mental health. In L. Trinder & S. Reynolds (Eds.), *Evidence-based practice: A critical appraisal* (pp. 66–88). Oxford, UK: Blackwell Science. https://doi.org/10.1002/9780470699003.ch4

GDP per capita in PPS (2018). Eurostat. Retrieved from https://ec.europa.eu/eurostat/tgm/table.do?tab=table&plugin=1&language=en&pcode=tec00114

Gregorčič Mrvar, P., & Mažgon, J. (2017). The role of the school counsellor in school–community collaboration: The case of Slovenia. *International Journal of Cognitive Research in Science, Engineering and Education, 5*(1), 19–29. https://doi.org/10.5937/IJCRSEE1701019G

Hamill, N.R., & Wiener, K.K.K. (2018). Attitudes of psychologists in Australia towards evidence-based practice in psychology. *Australian Psychologist, 53*, 477–485. https://doi.org/10.1111/ap.12342

Hayes, S.C., Barlow, D.H., & Nelson-Gray, R.O. (1999). *The scientist practitioner: Research and accountability in the age of managed care* (2nd ed.) Needham Heights, MA: Allyn & Bacon.

Hemphill, J.F. (2003). Interpreting the magnitudes of correlation coefficients. *American Psychologist, 58*(1), 78–80. https://doi.org/10.1037/0003-066X.58.1.78

Hoagwood, K., & Johnson, J. (2003). School psychology: A public health framework I. From evidence-based practices to evidence-based policies. *Journal of School Psychology*, *41*(1), 3–21. https://doi.org/10.1016/S0022-4405(02)00141-3

Hosp, J.L., & Reschly, D.J. (2002). Regional differences in school psychology practice. *School Psychology Review*, 31 (1), 11–29.

Institute of Medicine. (2001). *Crossing the quality chasm: A new health system for the 21st century.* Washington, DC: National Academy Press.

Kehle, T.J., & Bray, M.A. (2005). Reducing the gap between research and practice in school psychology. *Psychology in the Schools*, *42*(5), 577–584. https://doi.org/10.1002/pits.20093

Kratochwill, T., & Shernoff, E. (2004). Evidence-based practice: Promoting evidence-based interventions in school psychology. *School Psychology Review, 33*(1), 34–48.

Lakens D. (2013). Calculating and reporting effect sizes to facilitate cumulative science: A practical primer for t-tests and ANOVAs. *Frontiers in Psychology*, *4*, 863. https://doi.org/10.3389/fpsyg.2013.00863

Lilienfeld, S.O., Ammirati, R., & David, M. (2012). Distinguishing science from pseudoscience in school psychology: Science and scientific thinking as safeguards against human error. *Journal of School Psychology*, *50*(1), 7–36. https://doi.org/10.1016/j.jsp.2011.09.006

Liu, S., & Oakland, T. (2016). The emergence and evolution of school psychology literature: A scientometric analysis from 1907 through 2014. *School Psychology Quarterly, 31,* 104–121. https://doi.org/10.1037/spq0000141

Maher, C.G., Sherrington, C., Elkins, M., Herbert, R.D., & Moseley, A.M. (2004). Challenges for evidence-based physical therapy: Accessing and interpreting high-quality evidence on therapy. *Physical Therapy, 87*(7), 644–654.

Mason, D. J., Leavitt, J. K., & Chaffee, M. W. (Eds.). (2002). *Policy & Politics in Nursing and Health Care*. St Louis, MO: Saunders.

McKevitt, B. C. (2012). School psychologists' knowledge and use of evidence-based, social-emotional learning interventions. *Contemporary School Psychology, 16*(1), 33–45.

Okpych, N., & L-H Yu, J. (2014). A historical analysis of evidence-based practice in social work: The unfinished journey toward an empirically grounded profession. *Social Service Review*, *88,* 3–58. https://doi.org/10.1086/674969

Patterson, D.S., Dulmus, C.N., & Maguin, E. (2012). Empirically supported treatment's impact on organizational culture and climate. *Research on Social Work Practice, 22*(6), 665–671. https://doi.org/10.1177/1049731512448934

Regulation (2005). *Regulation 72/2005 on the provision of consultancy in schools and school consulting establishments.* [*Vyhláška 72/2005 Sb o poskytování poradenských služeb ve školách a školských poradenských zařízeních*]. MŠMT.

Sackett, D.L., Rosenberg, W.M., Gray, J.A., Haynes, R.B., & Richardson, W.S. (1996). Evidence based medicine: What it is and what it isn't. *British Medical Journal*, *312*, 71–72. https://doi.org/10.1136/bmj.312.7023.71

Silverman, D. (2000). *Doing qualitative research: A practical handbook*. London, UK: Sage.

Schaeffer, C.M., Bruns, E., Weist, M., Stephan, S.H., Goldstein, J., & Simpson, Y. (2005). Overcoming challenges to using evidence-based interventions in schools. *Journal of Youth and Adolescence, 34*(1),15–22. https://doi.org/10.1007/s10964-005-1332-0

Shaywitz, S. (The Yale Center for Dyslexia & Creativity) (2014, September 18). *Evidence-based vs research based programs for dyslexics* [Video file]. Retrieved from https://www.youtube.com/watch?v=nbQ9wAtTxlU

Shernoff, E.S., Bearman, S.K., & Kratochwill, R.T. (2017). Training the next generation of school psychologists to deliver evidence-based mental health practices: Current challenges and future directions. *School Psychology Review, 46*(2), 219–232. https://doi.org/10.17105/SPR-2015-0118.V46.2

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research* (2nd ed.). Thousand Oaks, CA: Sage.

Tabachnick, B.G., & Fidell, L.S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Allyn & Bacon.

Thomas G., & Pring, R. (Eds.). (2004). *Evidence-based practice in education*. Maidenhead, UK: Open University Press.

Total general government expenditure on education, 2017 (2017). Eurostat. Retrieved from https://ec.europa.eu/eurostat/statistics-explained/images/6/66/Total_general_government_expenditure_on_education%2C_2017_%28%25_of_GDP_%25_of_total_expenditure%29.png

White, J.J., & Kratochwill, T.R. (2005). Practice guidelines in school psychology: Issues and directions for evidence-based interventions in practice and training. *Journal of School Psychology, 43,* 99–115. https://doi.org/10.1016/j.jsp.2005.01.001

Appendix

Table 4

Correlation matrix for EBP–PiE domains by country

		1	2	3	4	5	6	7
1. Literature	Czech	1	.34**	.40**	.17	.40**	.44**	.64**
	Slovakia	1	.14	−.04	.01	−.10	.14	.32**
	Slovenia	1	.40**	.38**	−.03	.24	.37**	.49**
2. Professional	Czech		1	.59**	.17	.29**	.17	.51**
	Slovakia		1	.41**	.18	.29**	.18	.38**
	Slovenia		1	.37**	.38**	.44**	.36**	.49**
3. Workplace	Czech			1	.03	.45**	.28	.59**
	Slovakia			1	.04	.38**	.21	.21
	Slovenia			1	.11	.34*	.21	.58**
4. Cooperation	Czech				1	.35**	.36**	.25*
	Slovakia				1	.35**	.60**	.25**
	Slovenia				1	.49**	.46**	.32*
5. Evaluation	Czech					1	.58**	.54**
	Slovakia					1	.34**	.48**
	Slovenia					1	.48**	.64**
6. Availability	Czech						1	.52**
	Slovakia						1	.37**
	Slovenia						1	.61**
7. Use	Czech							1
	Slovakia							1
	Slovenia							1

Note. $*p \leq .05$. $**p \leq .01$.

Attitudes Towards Gifted Students and Their Education in the Slovenian Context

Mojca Juriševič[a,*], Urška Žerak[a]

[a]*University of Ljubljana, Faculty of Education, Ljubljana, Slovenia*

*Corresponding author. E-mail: mojca.jurisevic@pef.uni-lj.si

Background. Cultivation of positive attitudes towards gifted education is important to ensure that gifted students receive educational opportunities appropriate to their learning needs.

Objective. To examine the attitudes of students, parents, and teachers towards gifted education in the Slovenian upper secondary schools.

Design. A total of 1,020 students from four selective co-educational upper secondary schools (i.e., gymnasiums), their teachers ($n = 84$), and parents ($n = 306$) participated in the study. Respondents' attitudes were assessed using an adapted version of the Gagne and Nadeau attitude survey about gifted students and their education. In order to obtain a deeper insight into the context, an open question about gifted education was also posed.

Results. Participants generally hold neutral to positive attitudes towards gifted education. They expressed their awareness of gifted students' special academic needs and the meaningfulness of specific educational support. Furthermore, 68% of participating students emphasized the need for relatedness to their peers (i.e., not to stand out or be labelled), often neglected in provisions for the gifted. Comparative analysis showed that attitudes towards the extent of knowledge and experience in the field differed among the groups of participants.

Conclusion. Qualitative analysis complemented the quantitative findings by addressing "the principle of challenging" instead of "the principle of adding", suggesting that the focus should be primarily on adapting the curricula and, out of consideration for their social and emotional needs in adolescence, not on overloading gifted students.

Keywords:
attitudes, gifted education, gifted students, teachers, parents

Introduction

Contemporary developmental models define giftedness as outstanding learning potential that will most likely realize itself, if students experience appropriate learning opportunities based on their abilities, interests, and needs at different developmental stages (Dai, 2016; *Gagne*, 2018; Kaufman & Sternberg, 2008; Renzulli & Reis, 2018; Sternberg & Davidson, 2005; Sternberg, Jarvin, & Grigorenko, 2011; Subotnik, Olszewski-Kubilius, & Worrell, 2011, 2018). Assuring quality provisions for the education of gifted students thus requires adaptation of content and methods of teaching and learning, as well as involvement of gifted students in various enrichment and extracurricular activities. In recent years, talent development has been presented as a conceptual model that emphasizes motivation and long-term specific educational programs, allowing as many individuals as possible to reach the highest levels of achievement in the field of their talent (Jurišević, 2017; McCoach & Kay, 2018; Subotnik et al., 2011; Subotnik & Rickoff, 2010).

General social attitudes towards gifted students influence policymakers who are responsible for gifted education. Rooted misconceptions and stereotypes about gifted students often inhibit further development of gifted programs and have a negative impact on funding of those programs. At this point, it makes sense to deal with the common false belief that gifted students will manage on their own; indeed, the label "gifted" or "talented" is not a synonym for superior performance, creative productivity, or exceptional achievement, absent effort and deliberate practice (Cross & Coleman, 2005; Cross, Coleman, & Stewart, 1993; Subotnik et al., 2011). Resistance to gifted programs persists due to the stereotypical belief that gifted students come from families with higher socio-economic status, implying that programs are inaccessible to gifted students from underprivileged cultural environments. This ambivalence is also promoted by a school culture that accepts giftedness only in certain areas (e.g., music and sports, see Colangelo & David, 2003; Winner, 1996) and by the prevailing stereotypes about academically talented students (Cross, 2005; Matheis, Kronborg, Schmitt, & Preckel, 2017; Matheis, Keller, Kronborg, Schmitt, & Preckel, 2019; Siegle & Reis, 1998). In many countries, however, there is a trend towards changing attitudes about gifted education, and awareness is rising of the importance of supporting gifted students for the progress of society at large (IEA, 2018). Steenbergen-Hu and Olszewski-Kubilius (2016) highlighted the importance of educational programs and activities for the gifted and talented in terms of talent development and motivation of highly capable individuals, who will take on roles as leading innovators, experts, creators, and leaders in the future.

Providing appropriate learning opportunities for gifted students requires a focus on teachers' knowledge, understanding, and attitudes towards gifted students (Swanson & Lord, 2013). Negative attitudes towards giftedness affect perceptions of gifted students and their education, and therefore influence teachers' behavior towards these students (Lassig, 2009). Teachers' attitudes do not affect only their teaching practices and approaches, but also have an indirect influence on the attitudes and behaviors of the students' peers and the stimulating classroom climate that ensures optimal development of talented students (Al-Makhalid, 2012; Cross, Cross, & O'Reilly, 2018; Lassig, 2009). Teachers' subjective theories, which might

result in misunderstanding the needs of gifted students, their education, and the implementation of provisions for the gifted and talented, are extremely important aspects that should be taken into account when forming guidelines for gifted education (Ozcan, 2016). Researchers have emphasized that gifted and talented students require competent teachers, who will provide appropriate incentives to fully realize their potentials (Ozcan, 2016; Perković Krijan, & Borić, 2015).

Teachers' attitudes have a crucial impact on their professional decisions and everyday behavior in the classroom (Everton, Galton, & Pell, 2002; Pajares, 1992). Knowledge about teachers' attitudes is therefore crucial for successful implementation of gifted education programs (Davids & Rimm, 2004; Lassig, 2009). In general, attitudes can be defined as relatively permanent cognitive or personality structures that represent predispositions for certain individual responses. They influence how individuals perceive and experience certain situations and how they direct their attention. Attitudes represent an integration of three aspects of basic mental functions: (a) a cognitive component that contains individual knowledge and information about a particular object, person, or situation; (b) an emotional component, comprising a positive or negative feeling and the evaluation of the object; and (c) a motivational component that includes individual behavioral intentions or actual behavior towards a certain object, person, or situation (Ajzen & Fishbein, 1977; Ule, 2009).

Although teachers' attitudes towards gifted students and their education have often been studied (Al-Makhalid, 2012; Begin & Gagne, 1994b; Cross, Cross, & Frazier, 2013; Cross et al., 2018; Jung, 2014; Lassig, 2009; Matheis et al., 2019; Perković & Borić, 2015), the results revealed mixed attitudes and inconclusive answers about gifted education. Cross et al. (2013) reported that teachers who taught in heterogeneous classes were less inclined to favor gifted education in comparison with teachers in specialized schools for gifted students. Other studies (Juriševič, 2012; Lassig, 2009; McCoach & Siegle, 2007; Troxclair, 2013, Watts, 2006) demonstrated that teachers in general hold positive attitudes towards recognizing and supporting the needs of gifted students. On the other hand, some studies found teachers' attitudes to be neutral (Perković Krijan, Jurčec, & Borić, 2014) or negative, specifically where acceleration for gifted students is concerned (Lassig, 2009; Troxclair, 2013). Regarding ability grouping, research results showed ambivalent (Lassig, 2009) and negative attitudes (Troxclair, 2013; Watts, 2006). Jung (2014) reported the following factors that predict positive attitudes towards programs and activities for gifted students among pre-service teachers: (a) low tolerance for the unequal distribution of power in society, which can be connected with meritocracy, and consequently with a focus on education; (b) frequent contact with gifted individuals, which both consciously and unconsciously influence the teacher's awareness of the specific needs of gifted students. Similarly, Begin & Gagne (1994b) identified frequent contact with gifted individuals as well as socio-economic status as factors that have a significant effect on cultivation of teachers' and parents' positive attitudes towards gifted students.

Researchers have examined the relationship between level of professional experience and attitudes towards gifted students. Some research revealed that more experienced teachers who have a wider range of professional experience and con-

sequently have more often worked with gifted students hold more positive attitudes (Begin & Gagne, 1994a; Jung, 2014), while other studies showed that young teachers hold more positive attitudes towards gifted students (Perković Krijan, & Borić, 2015). However, some researchers reported no significant differences between the teachers' age or years of teaching experience (Cramond & Martin, 1987; Lassig, 2009).

The Slovenian Context

Slovenia has a relatively long and rich history of providing special services in basic and secondary education for students with outstanding learning potentials. It starts with the identification of giftedness from Grade 4 of elementary school. In the past 20 years, gifted education has expanded greatly for basic and secondary education in four areas: (1) different forms of differentiation and/or accelerated learning; (2) promoting the development of different talents within the expanded curriculum and school enrichment activities; (3) additional extracurricular activities; and (4) scholarships. Since 2007, a more systematic approach in secondary education was established by the document "Identification and Work with Gifted Students".

Despite the diversity and professional interest, the above-described activities remain a professional responsibility of individuals or different institutions, uncoordinated and not appropriately monitored and evaluated. There is no national strategy that would regulate gifted education (Jurišević, 2012). The national analysis presented in the White Paper on Education in Slovenia revealed the specific characteristics of gifted education in the Slovenian context (Jurišević, 2011a). First, there is an uneven understanding of the concepts of giftedness, talent, and related constructs, as well as a lack of cooperation and partnerships between educational experts and institutions involved in the cultivation of students' exceptional learning potentials. Second, different stakeholders report a bureaucratization of work with gifted students, brain drain, and a high percentage of identified gifted students (i.e., approx. 25% of gifted students identified in Slovenian school; Jurišević, 2012). Third, there is non-uniformity in understanding the goals of gifted education. Fourth, teachers and other professional staff in educational institutions are not sufficiently competent to identify and work with gifted students. Fifth, the work of teacher mentors is not regulated. Furthermore, there are disputes over financing of various initiatives and activities in the field of working with gifted and talented students, including the system of scholarships. Finally, there is an absence of analyses and evaluations, along with weak research activity. Manifestations of the aforementioned characteristics and issues are extensive, from an unregulated education system for teachers and mentors, to persisting negative stereotypes about gifted students and their education.

The main aim of this study was to explore the attitudes of students, teachers, and parents towards gifted students and their education. Second, we sought to obtain deeper insight into the context of gifted education by investigating the perceptions and opinions of participants in the gifted education context about giftedness and gifted education. A basic premise of this research was that it is extremely important to clearly understand the characteristics of the particular educational context in order to plan appropriate provisions for the gifted.

Method

Participants

The convenience sample included 1020 students from four coeducational upper secondary schools (i.e., gymnasiums) This type of schools is oriented towards attaining the knowledge and skills needed to continue the students' education at the university level; therefore, most of students, participating in the study were identified as gifted in the primary or upper secondary school (80.8%). Of all the students, 59.9% were female and 40.1% were male; their age ranged from 15 to 19 years ($M = 17.16$, $SD = 1.11$). The students' teachers ($n = 84$) and parents ($n = 306$) were also participants. Teachers' ages ranged from 24 to 65 years ($M = 46.94$, $SD = 10.45$), 23.4% were male and 72.6% female. Their teaching experience ranged from 3 months to 39 years ($M = 21.86$, $SD = 9.98$) and the amount of time spent working with gifted students ranged from zero to 37 years ($M = 12.95$, $SD = 10.38$). The parents' age ranged from 31 to 76 years ($M = 47.38$, $SD = 5.17$), 21.1% were male and 78.8% female. Participation in the study was voluntary. Prior to participation, the aims of the study were presented to the participants and the protection of personal data was ensured, emphasizing the significance of honest answers.

Materials

The *Attitudes towards Gifted Students and Their Education Questionnaire* was constructed for the purpose of this research, using the Slovenian translation (Juriševič, 2012) of the *Opinions about the Gifted and Their Education Questionnaire* (Gagne & Nadeau, 1991). We selected the most representative items from the Slovenian version of the original questionnaire (19 items) and added 8 items related specifically to upper secondary students. The questionnaire comprised 27 items with a 5-point Likert-type scale response format (1 = strongly disagree, 5 = strongly agree). It contained five subscales: *Understanding the concept of giftedness* (e.g., Giftedness is rare and needs to be promoted), *Perceptions of giftedness* (e.g., Gifted students are hardworking and obedient), *Social justice/inclusion* (e.g., For the future of our society, it is beneficial that a country devote additional funds for gifted education), *Appropriate support and differentiation* (e.g., Our school should offer additional activities for gifted students), and *Teachers' behavior towards gifted students* (e.g., Most teachers do not have time to devote special attention to gifted students). Juriševič (2012) established the adequate reliability of the Slovenian version of the entire 60-item Gagne & Nadeau questionnaire: α = .80. The reliability coefficient of the full scale in the present version of the questionnaire is lower, but still in the acceptable range (α = .60; see Steiner, 2003).

In addition to the items, an open-ended question about self-perceptions and opinions about giftedness and gifted education was added.

Data Collection and Analysis

The data was collected in the school year 2017–18, specifically in May and June 2018. During a four-week period, all the participants filled out the questionnaire in a paper-based form. The questionnaire was administered with the assistance of school counsellors from each school involved. Data was analyzed with the statisti-

cal program IBM SPSS Statistics 20 (IBM Corporation, 2016). Before the analysis was carried out, the distribution of variables was examined. Because there were no significant deviations from normal distributions, parametric statistics were used for further analysis. Qualitative responses were analyzed using comparative content analysis to distinguish the essential generic and representative themes (Mertens, 2010; Vogrinc, 2008).

Results

The results are presented in three sections: (a) general attitudes of participants; (b) differences in attitudes among students, teachers, and parents; and (c) qualitative analysis of respondents' self-perceptions about giftedness and gifted education.

General Attitudes towards Gifted Students and Their Education

Gagne's (1991) recommendation for the interpretation of results was used to determine the attitudes towards gifted student and their education. The arithmetic means were interpreted using the following guidelines: a score above 4.00 indicates a very positive attitude and below 2.00 a very negative attitude; means between 2.75 and 3.25 imply a neutral attitude; means above 2.00 and below 2.75 indicate a negative attitude, and means above 3.25 and below 4.00 imply a positive attitude. The descriptive statistics show that participants in general hold a neutral attitude towards gifted education ($M = 2.81$, $SD = .32$). *Table 1* presents the descriptive statistics for each item in the questionnaire.

Table 1

Descriptive statistics

Item	N	M	SD	Skewness	Kurtosis
1. Gifted students do not have to learn anything to achieve high grades.	1402	2.07	1.16	.79	−.64
2. Giftedness is rare and should be promoted.	1399	3.64	1.10	−.60	−.48
3. Gifted students have many privileges at school.	1403	2.36	1.18	.55	−.73
4. Our schools should offer additional activities for gifted students.	1400	3.63	1.14	−.56	−.54
5. Teachers do not treat gifted and other students any differently.	1400	3.17	1.28	−.11	−1.13
6. Gifted students are hardworking and obedient.	1403	2.43	1.13	.39	−.87
7. You are born gifted; you cannot become gifted.	1401	2.84	1.36	0.14	−1.24
8. Since we invest supplementary funds for students with difficulties, we should do the same for gifted students.	1406	3.82	1.15	−.79	−.27
9. Gifted students can fully develop their talents by adapted teaching.	1407	3.75	1.02	−.75	.001

Item	N	M	SD	Skewness	Kurtosis
10. Teachers generally prefer to teach gifted students than students with learning difficulties.	1402	3.58	1.16	−.59	−.48
11. Gifted students are popular in the classroom.	1401	2.75	1.06	.11	−.60
12. Everyone could be gifted, if they use all of the incentives from the environment.	1396	3.05	1.26	−.09	−1.11
13. By separating students into gifted and other groups, we increase the labelling of students as strong/weak, good/less good, etc.	1403	3.78	1.21	−.84	−.27
14. The same degree of special attention should be given to gifted students as to students with learning difficulties.	1401	3.69	1.21	−.63	−.71
15. Most teachers do not have time to devote special attention to gifted students.	1407	3.31	1.15	−.28	−.80
16. Gifted students might become vain or egoistic if they are given special attention.	1407	3.16	1.25	−.26	−1.03
17. To be gifted means to be something more than others.	1407	1.85	1.16	1.25	.47
18. For the future of our society, it is very beneficial that the country devote additional funds for gifted education.	1407	3.97	1.05	−.97	.39
19. It is better for gifted students that they have adapted regular classes, rather than skipping a grade.	1403	3.90	1.14	−.92	.05
20. Gifted students are nerds; they strive for high grades.	1391	1.95	1.08	.99	.13
21. Gifted students will be successful regardless of the educational program they are involved in.	1402	2.56	1.26	.38	−1.01
22. Special educational services for gifted students are a mark of privilege.	1400	2.64	1.19	0.26	−.86
23. More gifted students should have the possibility of skipping a grade.	1400	2.22	1.12	.67	−.31
24. Gifted students are often unsociable.	1398	2.30	1.12	.49	−.69
25. Parents bear the main responsibility for gifted students to develop their talents.	1397	2.91	1.16	−.03	−.99
26. When gifted students are put in special classes, other students feel devalued.	1405	3.36	1.15	−.39	−.71
27. Gifted students are often bored at school.	1405	3.21	1.16	−.20	−.80

Comparative Analysis

Comparative analysis showed that groups of participants (teachers, parents, and students) differed in their attitudes towards gifted students and their education. *Figures 1* and *2* present the highest values and differences among the groups. Teachers ($M = 4.02$; SD = 0.96) and parents ($M = 4.17$; $SD = 1.00$) are more inclined towards additional school-based activities for gifted students than students ($M = 3.43$; $SD = 1.14$). Analysis of variance showed significant differences ($F[2, 1397] = 58.59$, $p < .001$), $\eta^2 = .08$, which indicates a medium effect. Likewise, teachers ($M = 4.60$; $SD = 0.70$) and parents ($M = 4.30$; $SD = 1.03$) expressed more positive attitudes towards inclusive education, in terms of investing supplementary funds for education of gifted students, than students ($M = 4.30$; $SD = 1.03$). Analysis of variance showed significant differences ($F[2, 1403] = 68.58$, $p < .001$), $\eta^2 = .09$, which indicates a medium effect. Teachers' ($M = 4.37$; $SD = 0.81$) and parents' ($M = 4.19$; $SD = 1.04$) attitudes regarding the degree of special attention that should be paid to gifted students were more positive than students' attitudes ($M = 3.49$; $SD = 1.23$).
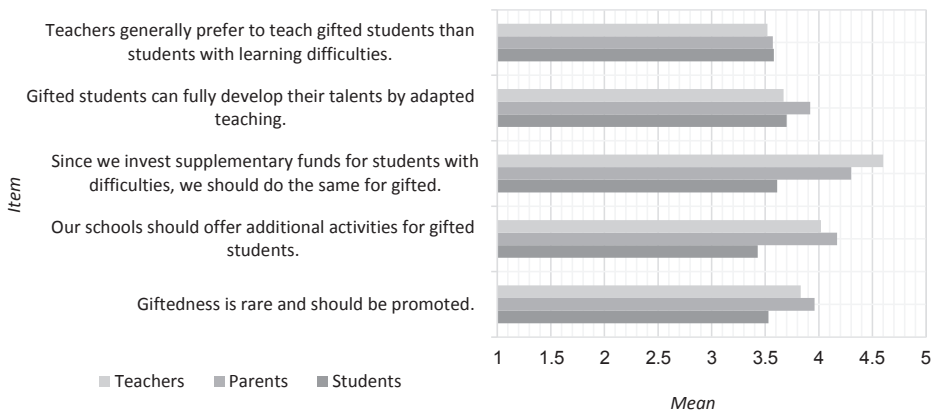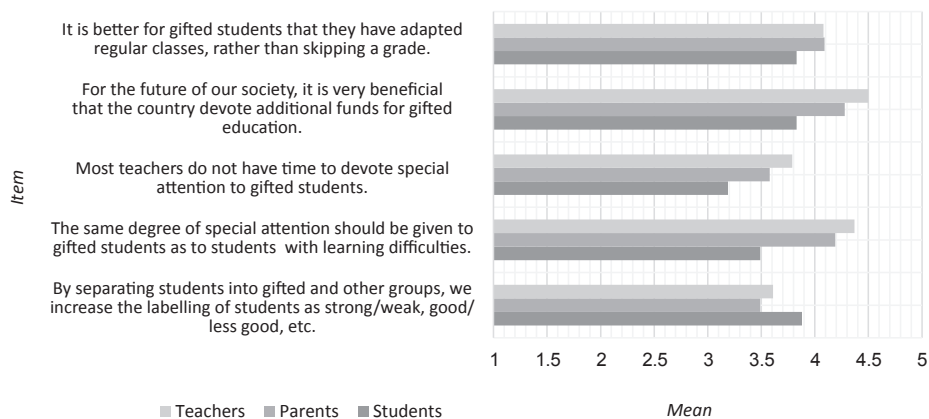

Figure 1. Differences among groups

Figure 2. Differences among groups

Analysis of variance showed significant differences ($F[2, 1398] = 57.91, p < .001$), $\eta^2 = .08$, which indicates a medium effect.

Figure 3 presents the lowest values and differences among the groups. It is interesting that stereotypes about gifted students as being nerds and striving for high grades were rated higher among students ($M = 2.03$; $SD = 1.08$) in comparison to teachers ($M = 1.84$; $SD = 0.96$) and parents ($M = 1.74$; $SD = 1.08$). Analysis of variance showed significant differences ($F[2, 1388] = 8.90, p < .001$), $\eta^2 = .01$, which indicates a small effect. Likewise, a misconception that gifted students do not have to put in any effort to achieve high grades was rated higher in the group of students ($M = 2.13$; $SD = 1.36$) and teachers ($M = 2.11$; $SD = 1.19$) in comparison to parents ($M = 1.86$; $SD = 1.20$). Analysis of variance showed significant differences ($F[2, 1399] = 6.44, p = .002$), $\eta^2 = .01$, which indicates a small effect.
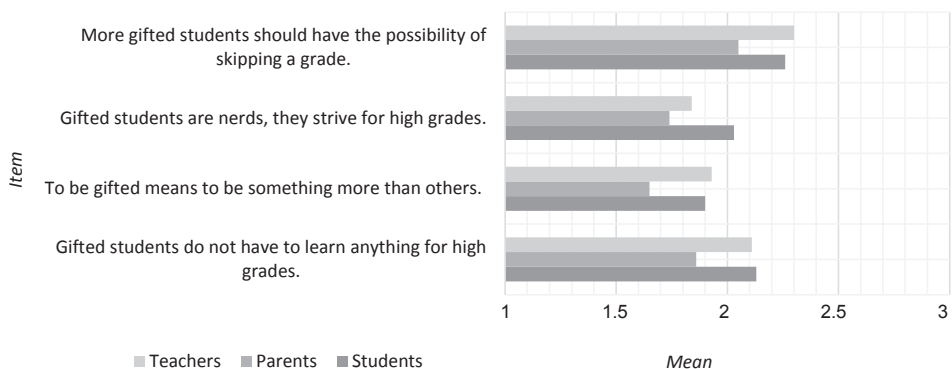

Figure 3. Differences among groups

Qualitative Analysis

Fifty-three percent of participants ($n = 668$) responded to the open-ended question asking for their opinions and perceptions about giftedness and gifted education. Based on content analysis of all answers, a set of 15 categories was developed (see *Table 2*). Many of the comments described the perceived need to provide appropriate support and incentives for gifted students (e.g., *"Gifted students deserve an adapted curriculum, just like students with learning difficulties, because regular lessons are too easy for them"*), problems with identification of giftedness (e.g., *"Being identified as gifted in practice means only that you complete a form twice a year"*), an equal approach for all students (e.g., *"Gifted education and working with gifted students should not be different from education of other students"*), unadjusted or inappropriate school system for gifted students (e.g., *"Gifted students do not have access to information on specific topics (e.g., quantum physics); they have to learn about them at home"*), and negative aspects of separating students into gifted and non-gifted (e.g., *"I think gifted students may be excluded from society if they are in a school where other students envy them and do not want to hang out with them because they are different"*).

Content analysis of parents' responses (Table 3) revealed that many comments fall into the same category as students' responses. The most common answers referred to the perceived need to provide appropriate support and incentives for gift-

ed students (e.g., *"I think that it is extremely important that we provide appropriate support for gifted students, because they contribute to the development of our country with their knowledge, innovations, and ideas"*), problems with identification of giftedness (e.g., *"I think that the identification of gifted students is too broad and in most cases confuses giftedness with diligence"*), and unadjusted or inappropriate school systems for gifted students (e.g., *"I think that gifted students are not sufficiently challenged; therefore, they cannot realize their potentials and are bored in school"*).

Table 2

Students on gifted education (n = 523)

Category	*f*	*f%*
Perceived need to provide appropriate support and incentives for gifted students	146	27.92
Problems with identification of giftedness	83	15.87
Equal approach for all students	68	13.00
Unadjusted or inappropriate school system for gifted students	52	9.94
Negative aspect of separating students on gifted and non-gifted	43	8.22
Insufficient or inadequate activities for promoting the development of gifted students	33	6.31
Giftedness as a privilege	25	4.78
Appropriate activities for gifted students at school	25	4.78
Enrichment activities for all students, not only gifted students	18	3.44
Characteristics of gifted students	18	3.44
Gifted students are responsible for development of their potentials	12	2.30

Table 3

Parents on gifted education (n = 104)

Category	*f*	*f%*
Perceived need to provide appropriate support and incentives for gifted students	27	25.96
Problems with identification of giftedness	24	23.08
Unadjusted or inappropriate school system for gifted students	14	13.46
Lack of information about the work with gifted students	9	8.65
Equal approach for all students	9	8.65
Insufficient or inadequate activities to promote the development of gifted students	8	7.69
Mentoring gifted students	7	6.73
Characteristics of gifted students	4	3.85
Appropriate activities for gifted students at school	2	1.93

Teachers' comments (Table 4) were mostly about obstacles in working with gifted students (e.g., *"Too many gifted students in the same class, a lot of bureaucracy, and problems with the organization of work"*), unadjusted or inappropriate school system for gifted students (e.g., "*There are no financial resources for working with gifted students and it would be appropriate to incorporate some of the contents for gifted into the lesson itself, instead of offering enrichment activities after regular lessons"*), and perceived need to provide appropriate support and incentives for gifted students (e.g., "*Our society and the school system should be doing more for gifted students*").

Table 4

Teachers on gifted education (n = 32)

Category	f	f%
Obstacles in working with gifted students	9	28.13
Unadjusted or inappropriate school system for gifted students	8	25.00
Perceived need to provide appropriate support and incentives for gifted students	3	9.38
Problems with identification of giftedness	3	9.38
Characteristics of gifted students	3	9.38
Insufficient or inadequate activities to promote the development of gifted students	2	6.25
Lack of information about how to work with gifted students	2	6.25
Equal approach for all students	1	3.13
Appropriate activities for gifted students at school	1	3.13

Discussion and Conclusions

General attitudes of society towards gifted students influence gifted education (Subotnik et al., 2011). Raising awareness about the importance of offering special inclusive support for gifted students is an important initiative in developing and changing the relationship of society towards gifted education (IEA, 2018). This study investigated the nature of students', teachers', and parents' attitudes towards gifted students and their education.

In general, students, parents, and teachers held neutral attitudes towards gifted students and their education. Building awareness about the special needs of gifted students and cultivating appropriate attitudes towards the gifted and their education is therefore the first step towards assuring quality provisions for the talent development of gifted students (Subotnik et al., 2011). Participants in the study recognized the needs, support, and social value of gifted students, but they lacked a clearly defined attitude towards special provisions for gifted students. Their understanding that gifted education provisions are cultivators of social capital (Renzulli, 2002) can, however, be implied from the results. Qualitative analysis revealed that schools in Slovenia provide a wide range of extracurricular activities for gifted

students, but give less attention to supporting the acceleration and adapting the curricula by differentiating learning content and teaching methods. Research has shown, however, that acceleration is very effective for gifted students (Assouline, Colangelo, & VanTassel-Baska, 2015). Moreover, research results have indicated that provisions for gifted students should be designed by "the principle of challenging" instead of "the principle of adding", focusing more on inclusive adapting of the curricula by differentiating learning content and teaching methods and not by overloading gifted students after regular classes, without consideration for their social and emotional needs in adolescence (Juriševič, 2012).

The results of this study further demonstrate that access to provisions for gifted students and implementation of special education activities is uneven across the country; therefore, not all students have an equal opportunity to receive appropriate educational provisions. This is due to lack of a systemic approach to gifted education in the Slovenian educational system — e.g., students from rural areas do not have opportunities equal to those of students who live in the capital city, where most research institutions are located. Teachers commented that financial resources for working with gifted students are lacking, and that they feel overwhelmed with bureaucracy. They further reported problems with the organization of activities for gifted students (e.g., time, resources). Without a national strategy for gifted education, teachers are unlikely to receive appropriate support, funds, and additional training to develop their knowledge about gifted students and establish differentiated curriculum materials and methods.

Teachers and parents significantly affect the development of gifted students (Lassig, 2009; Matheis et al., 2017; Subotnik et al., 2011). This assumption is consistent with Gagne's (2003) *Differentiated Model of Giftedness and Talent,* which emphasizes the role of significant people for the development of gifts into talents. Therefore, the role of teacher education programs is to inform pre-service teachers about giftedness and differentiated teaching methods for addressing gifted students' needs in inclusive education (Laine, Houtlainen, & Tirri, 2019). It is crucial that teachers develop appropriate teaching approaches in order to gain positive experiences with gifted education (Loboda, Bedek, Žerak, Juriševič, & Vogrinc, 2019). This will further contribute to the cultivation of positive attitudes towards gifted education.

Finally, findings from this study offer several practical implications as well. First, the results should persuade local and national authorities to develop a comprehensive strategy to support gifted education in schools as one type of inclusion (Borders, Woodley, & Moore, 2014; Juriševič, 2011b; Olszewski-Kubilius, Worrell, & Subotnik, 2018). Second, discussing results of this study among teachers, students, parents, and school leaders would be beneficial in terms of comparison of different opinions and experiences, and explaining evidence-based concepts, methodologies and tools on how to cultivate (gifted) students' learning potentials in school (Robinson, Shore, & Enersen, 2007). Third, pre-service and in-service teacher education need to embed topics in gifted education, since teachers, with their attitudes and expectations towards students, might have an important influence on gifted students' social and emotional development, as well as on the provision of quality learning experiences which could lead gifted students to academic outcomes in line with their abilities (IEA, 2018; Lassig, 2009; Loboda et al., 2019; Rimm, Siegle,

& Davis, 2018). Finally, the fourth implication relies on practicing psychologists in education (i.e., psychologists in education or school psychologists), who in the Slovenian educational system are employed at the counselling service inside schools (see Gregorčič Mrvar & Mažgon, 2017); many times they are designated for the school's coordination of gifted education. Based on the presented results, school psychologists can serve in different domains of gifted education: (a) explaining the concept of giftedness and characteristics of gifted students to students or classmates, parents, teachers, and other stakeholders involved in the school context; (b) performing identification procedures; (c) supporting gifted students, including with counselling and career orientation; (d) consulting and educating parents and professionals in education and beyond; (e) research in the domain of gifted education, including evaluation of programs for gifted students; (f) advocating for gifted students wherever needed and possible; and (g) challenging misconceptions and negative attitudes towards gifted students and their education (Brown, 1982; Cross, 1997; Jung & Worrell, 2017; Juriševič, Stritih, Fabjančič, & Gradišek, 2012; Robinson, 2002).

Limitations

The first limitation of the present study involves the convenience sampling used for this research, affecting the generalizability of the results. Nevertheless, the results are congruent with previous findings from the Slovenian gifted education context (Juriševič, 2012). The second limitation arises from the psychometric properties of a translated version of the measuring instrument, as we were not able to verify the structural validity of the measure. Caution is thus needed in the interpretation of the results (Scholtes, Terwee, & Poolman, 2011). In the future, the development of a reliable and valid measurement instrument for studying attitudes towards gifted students and their education would be beneficial. Without valid empirical evidence, neither psychological understanding of the status of inclusion of gifted students in the specific educational context nor intervention to promote it are professionally justified.

Acknowledgements

References

Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin, 84*(5), 888–918. https://doi.org/10.1037/0033-2909.84.5.888

Al-Makhalid, K. A. (2012). *Primary teachers' attitudes and knowledge regarding gifted pupils and their education in the Kingdom of Saudi Arabia* (doctoral dissertation). Manchester, UK: University of Manchester, School of Education.

Assouline, S. G., Colangelo, N., & VanTassel-Baska, J. (2015). *A nation empowered: Evidence trumps the excuses holding back America's brightest students* (Vol. 1). Iowa City, IA: Belin Blank Center for Talent Development.

Begin, J., & Gagne, F. (1994a). Predictors of attitudes toward gifted education: A review of the literature and a blueprint for future research. *Journal for the Education of the Gifted, 17*, 161–179. https://doi.org/10.1177/016235329401700206

Borders, C., Woodley, S., & Moore, E. (2014). Inclusion and giftedness. In J. P. Bakken, F. E. Obiakor, & A. F. Rotatori (Eds.), *Advances in special education, volume 26: Gifted education: Current perspectives and issues* (pp. 127–146). Bingley, UK: Emerald Group Publishing Limited. https://doi.org/10.1108/S0270-4013(2014)0000026006

Brown, P.P. (1982). The role of the school psychologist in gifted education. *Roeper Review, 4*(4), 28–29. https://doi.org/10.1080/02783198209552629

Colangelo, N., & Davis, G.A. (2003). Introduction and overview. In N. Colangelo, & G. A. Davis (Eds.), *Handbook of gifted education* (pp. 3–10). New York, NY: Springer.

Cramond, B., & Martin, C.E. (1987). Inservice and preservice teachers' attitudes toward the academically brilliant. *Gifted Child Quarterly, 31*, 15–19. https://doi.org/10.1177/001698628703100103

Cross, T.L. (1997). Psychological and social aspects of educating gifted students. *Peabody Journal of Education, 72* (3–4), 180–200. https://doi.org/10.1207/s15327930pje7203&4_11

Cross, T.L. (2005). Nerds and geeks: Society's evolving stereotypes of our students with gifts and talents. *Gifted Child Today, 28*(4), 26–28. https://doi.org/10.1177/107621750502800406

Cross, T.L., & Coleman, L.J. (2005). School-based conception of giftedness. In R. J. Sternberg & J. E. Davidson (Eds.), *Conceptions of giftedness* (2nd ed., pp. 52–63). Cambridge, UK: Cambridge University Press. https://doi.org/10.1017/CBO9780511610455.005

Cross, J.R., Cross, T.L., & Frazier, A.D. (2013). Student and teacher attitudes toward giftedness in a two-laboratory school environment: A case for conducting a needs assessment. *NALS Journal, 5*, 1–21. Retrieved from http://digitalcommons.ric.edu/nals/vol5/iss1/1

Cross, T.L., Cross, J.R., & O'Reilly, C. (2018). Attitudes about gifted education among Irish educators. *High Ability Studies,* 1–21. https://doi.org/10.1080/13598139.2018.1518775

Cross, T.L., Coleman, L.J., & Stewart, R.A. (1993). The social cognition of gifted adolescents: An exploration of the stigma of giftedness paradigm. *Roeper Review, 16*(1), 37–40. https://doi.org/10.1080/02783199309553532

Dai, D.Y. (2016). Envisioning a new century of gifted education: The case for a paradigm shift. In D. Ambrose & R. J. Sternberg (Eds.), *Giftedness and talent in the 21st century* (pp. 45–64). Rotterdam, The Netherlands: Sense Publishers. https://doi.org/10.1007/978-94-6300-503-6_3

Everton, T., Galton, M., & Pell, T. (2002). Educational research and the teacher. *Research Papers in Education, 17*(4), 373–401. https://doi.org/10.1080/0267152022000031388

Gagne, F. (2003). Transforming gifts into talents: The DMGT as a developmental theory. In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (3nd ed., pp. 60–74). Boston, MA: Pearson Education.

Gagne, F. (2018). Academic talent development: Theory and best practices. In S.I. Pfeiffer, E. Shaunessy, & M. Foley-Nicpon (Eds.), *APA handbook of giftedness and talent* (pp. 163–184). Washington, DC: APA. https://doi.org/10.1037/0000038-011

Gagne, F., & Nadeau, L. (1991). *Opinions about the gifted and their education.* Unpublished manuscript. Montreal, CA: University of Quebec.

Gregorčič Mrvar, P., & Mažgon, J. (2017). The role of the school counsellor in school–community collaboration: The case of Slovenia. *International Journal of Cognitive Research in Science, Engineering and Education, 5*(1), 19–29. https://doi.org/10.5937/IJCRSEE1701019G

IBM Corporation (2016). IBM SPSS Statistics for Macintosh, Version 23.0. Armonk, NY, USA: IBM Corporation.

Jung, J.Y. (2014). Predictors of attitudes to gifted programs/provisions: Evidence from preservice educators. *Gifted Child Quarterly, 58*, 247–258. https://doi.org/10.1177/0016986214547636

Jurišević, M. (2011a). Gifted education. In J. Krek & M. Metljak (Eds.), *White paper on education in the Republic of Slovenia 2011* (pp. 329–367). Ljubljana, Slovenia: Zavod Republike Slovenije za šolstvo.

Jurišević, M. (2011b). Socialna vključenost nadarjenih učencev [Social inclusion of gifted students]. In B. Borota, M. Cotič, D. Hozjan, & L. Zenja (Eds.), *Social cohesion in education* (pp. 289–304). Horlivka, Ukraine: Horlivka State Pedagogical Institute for Foreign Languages.

Jurišević, M. (2012). *Nadarjeni učenci v slovenski šoli* [Gifted students in the Slovenian school]. Ljubljana, Slovenia: Univerza v Ljubljani, Pedagoška fakulteta.

Jurišević, M., Stritih, B., Fabjančič, N., & Gradišek, P. (2012). Pogled na delo z nadarjenimi v slovenskem šolskem prostoru s perspektive psihologov praktikov [Working with gifted students in the Slovenian school from the perspective of practicing psychologists.]. In M. Jurišević, & B. Stritih (Eds.), *Posvetovanje Vloga psihologa v vzgoji in izobraževanju nadarjenih, 27. 1. 2012, Ljubljana, Pedagoška fakulteta Univerze v Ljubljani*. 1. izd. (pp. 119–131). Ljubljana, Slovenia: Univerza v Ljubljani, Pedagoška fakulteta.

Jurišević, M. (2017). Motivating gifted students. In J. R. Cross, C. O'Reilly, & T. L. Cross (Eds.), *Providing for the special needs of students with gifts & talents* (pp. 235–266). Dublin, Ireland: CTYI Press.

Kaufman, S.B., & Sternberg, R.J. (2008). Conceptions of giftedness. In S. I. Pfeiffer (Ed.), *Handbook of giftedness in children: Psychoeducational theory, research and best practices* (pp. 71–92). New York, NY: Springer. https://doi.org/10.1007/978-0-387-74401-8_5

IEA (2018). *Public attitudes towards gifted education.* Pasadena, CA: Institute for Educational Advancement.

Lassig, C.J. (2009). Teachers' attitudes towards the gifted: The importance of professional development and school culture. *Australasian Journal of Gifted Education, 18*(2), 32–42.

Laine, S., Houtlainen, R., & Tiri, K. (2019). Finnish elementary school teachers' attitudes toward gifted education. *Roeper Review, 41*(2), 76–87. https://doi.org/10.1080/02783193.2019.1592794

Loboda, M., Bedek, N., Žerak, U., Jurišević, M., & Vogrinc, J. (2019). Stališča študentov pedagoških smeri do nadarjenih in njihovega izobraževanja [Attitudes of pre-service teachers towards gifted pupils and their education]. *Pedagoška obzorja*.

Matheis, S., Keller, L.K., Kronborg, L., Schmitt, M., & Preckel, F. (2019). Do stereotypes strike twice? Giftedness and gender stereotypes in pre-service teachers' beliefs about student characteristics in Australia. *Asia-Pacific Journal of Teacher Education,* 2–20. https://doi.org/10.1080/1359866X.2019.1576029

Matheis, S., Kronborg, L., Schmitt, M., & Preckel, F. (2017). Treat or challenge? Teacher beliefs about gifted students and their relationship to teacher motivation. *Gifted and Talented International, 32*(2), 134–160. https://doi.org/10.1080/15332276.2018.1537685

McCoach, D.B., & Flake, J.K. (2018). The role of motivation. In S. I. Pfeiffer, E. Shaunessy, & M. Foley-Nicpon (Eds.), *APA handbook of giftedness and talent* (pp. 201–214). Washington, DC: APA. https://doi.org/10.1037/0000038-013

Mertens, D.M. (2010). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative and mixed methods* (3nd ed., pp. 225–264). Los Angeles, CA: Sage.

McCoach, D. B., & Siegle, D. (2007). What predicts teachers' attitudes toward the gifted? *Gifted Child Quarterly, 5*(3), 246–255. https://doi.org/10.1177/0016986207302719

Olszewski-Kubilius, P., Worrell, F. C., & Subotnik, R. F. (2018). Addressing misconceptions about the talent development framework and implications for policy. In P. Olszewski-Kubilius, R. F., Subotnik, & F. C. Worrell (Eds.), *Talent development as a framework for gifted education: Implications for best practices and applications in schools* (pp. 299–306). Waco, TX: Prufrock Press.

Ozcan, D. (2016). Predictions and attitudes towards giftedness and gifted education. *International Journal of Educational Sciences, 15*(1–2), 126–133. https://doi.org/10.1080/09751122.2016.11890521

Pajares, F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research, 62*(3), 307–332. https://doi.org/10.3102/00346543062003307

Perkovič Krijan, I., Jurčec, L., & Borić, E. (2014). Primary school teachers' attitudes toward gifted students. *Croatian Journal of Education, 17*(3), 681–724. https://doi.org/10.15516/cje.v17i3.1199

Perković Krijan, I., & Borić, E. (2015). Teachers' attitudes towards gifted students and differences in attitudes regarding the years of teaching. *Croatian Journal of Education, 17*(1), 165–178. https://doi.org/10.15516/cje.v17i0.1490

Renzulli, J.S. (2002). Expanding the conception of giftedness to include co-cognitive traits and to promote social capital. *Phi Delta Kappan, 84*(1), 33–40, 57–58. https://doi.org/10.1177/003172170208400109

Renzulli, J.S., & Ries, S.M. (2018). The three-ring conception of giftedness: A developmental approach for promoting creative productivity in young people. In S. I. Pfeiffer, E. Shaunessy, & M. Foley-Nicpon (Eds), *APA handbook of giftedness and talent* (pp. 185–200). Washington, DC: APA. https://doi.org/10.1037/0000038-012

Rimm, S.B., Siegle, D.B., & Davis, G.A. (2018). *Education of the gifted and talented* (7th ed.). Boston, MA: Pearson.

Robinson, E. L. (2002). What is the school psychologist's role in gifted education? *Gifted Child Today*, 25(4), 34–37. https://doi.org/10.4219/gct-2002-78

Robinson, A., Shore, B.M., & Enersen, D.L. (2007). *Best practices in gifted education: An evidence-based guide*. Waco, TX: Prufrock Press. Retrieved from https://www.researchgate.net/publication/299202021_Best_practices_in_gifted_education_An_evidence-based_guide

Scholtes, V.A., Terwee, C.B., & Poolman, R.W. (2011). What makes a measurement instrument valid and reliable? *Injury, 42*, 236–240. https://doi.org/10.1016/j.injury.2010.11.042

Siegle, D., & Reis, S.M. (1998). Gender differences in teacher and student perceptions of gifted students' ability and effort. *Gifted Child Quarterly, 42*, 39–47. https://doi.org/10.1177/001698629804200105

Steenbergen-Hu, S., & Olszewski-Kubilius, P. (2016). Gifted identification and the role of gifted education: A commentary on evaluating the gifted program of an urban school district using a modified regression discontinuity design. *Journal of Advanced Academics. 27*(2), 99–108. https://doi.org/10.1177/1932202X16643836

Streiner, D.L. (2003). Starting at the beginning: An introduction to coefficient alpha and internal consistency. *Journal of Personality Assessment*, *80*(1), 99–103. https://doi.org/10.1207/S15327752JPA8001_18

Sternberg, R.J., & Davidson, J.E. (Eds.). (2005). *Conceptions of giftedness* (2nd ed.). New York, NY: Cambridge University Press. https://doi.org/10.1017/CBO9780511610455

Sternberg, R.J., Jarvin, L., & Grigorenko, E.L. (2011). Explorations in giftedness. New York, NY: Cambridge University Press.

Subotnik, R.F., Olszewski-Kubilius, P., & Worrell, F.C. (2011). Rethinking giftedness and gifted education: A proposed direction forward based on psychological science. *Psychological Science in the Public Interest*, *12*, 3–54. https://doi.org/10.1177/1529100611418056

Subotnik, R.F., Olszewski-Kubilius, P., & Worrell, F.C. (2018). Talent development as a most promising focus of giftedness and gifted education. In S. I. Pfeiffer, E. Shaunessy, & M. Foley-Nicpon (Eds), *APA handbook of giftedness and talent* (pp. 231–246). Washington, DC: APA. https://doi.org/10.1037/0000038-015

Subotnik, R.F., & Rickoff, R. (2010). Should eminence based on outstanding innovation be the goal of gifted education and talent development? Implications for policy and research. *Learning and Individual Differences*, *20*, 358–364. https://doi.org/10.1016/j.lindif.2009.12.005

Swanson, J.D., & Lord, E.W. (2013). Harnessing and guiding the power of policy: Examples from one state's experiences. *Journal for the Education of the Gifted, 36*, 198–219. https://doi.org/10.1177/0162353213480434

Troxclair, D.A. (2013). Preservice teacher attitudes toward giftedness. *Roeper Review, 35*, 58–64. https://doi.org/10.1080/02783193.2013.740603

Ule, M. (2009). *Socialna psihologija: analitični pristop k življenju v družbi* [Social psychology: An analytical approach to life in society]. Ljubljana, Slovenia: Univerza v Ljubljani, Fakulteta za družbene vede.

Vogrinc, J. (2008). *Kvalitativno raziskovanje na pedagoškem področju* [Qualitative research in the field of education]. Ljubljana, Slovenia: Univerza v Ljubljani, Pedagoška fakulteta.

Watts, G. (2006). Teacher attitudes to the acceleration of the gifted: A case study from New Zealand. *Gifted and Talented, 10*(1), 11–19.

Winner, E. (1996). *Gifted children: Myths and realities*. New York, NY: Basic Books.

Jung, J.Y., & Worrell, F.C. (2017). School psychological practice with gifted students. In M. Thielking & M. Terjesen (Eds.), *Handbook of Australian School Psychology* (575–593). Cham, Germany: Springer. https://doi.org/10.1007/978-3-319-45166-4_29

The Importance of Communicating Psychological Concepts in Educational Contexts: a Portuguese Exhibition

Sara Bahia[a*], João Nogueira[b]

[a]*University of Lisbon, Lisboa, Portugal*
[b]*New University of Lisbon, Lisboa, Portugal*

*Corresponding author. E-mail:sarabahias@gmail.com

Background. The principles of acquiring knowledge and developmental theories are powerful tools that psychologists use in educational contexts to change people's lives. As student populations become more diverse, psychologists need to play an important role in the evaluation and adaptation of their cognitive, behavioral, motivational, attitudinal, and emotional needs and challenges. They can intervene in various areas, from curriculum development, to regulations and guidelines for the application of direct educational tools and techniques by students, teachers, or institutions. One way to promote change at a macro-level is through providing creative experiences, such as interactive and engaging exhibitions that foster personal development at different levels.

Objective. The main focus of this study was to contribute to a theoretical foundation for the need to communicate psychological concepts through exhibitions. The secondary focus was the feedback given by visitors of all ages and educational contexts about how they enriched their knowledge about emotions through participating in an exhibit on the subject.

Design. We used a descriptive design, which employed diverse kinds of feedback from the visitors to an exhibition to measure its impact. The exhibition aimed at explaining in an interactive way what emotions are and how they may be regulated. The Southern Regional Delegation of the Order of Portuguese Psychologists (OPP) developed and displayed the "Experiencing Emotions" Exhibition (EEE), which featured 30 different activities divided into three parts: recognizing, living with, and transforming emotions. The exhibition toured the southern region of Portugal for nine months and was visited by more than 9000 people.

Results. The feedback was positive for all indicators.

Conclusion. Exhibitions like this one may be powerful instruments in the future to ensure that everyone has access to psychological concepts through interactive experiences, and gains knowledge about themselves, others, and the world.

Keywords:
education of
the emotions;
museology and
psychology
exhibitions;
emotions
meaning-making;
educational
interventions
in museums;
professional
psychology;
Experiencing
Emotions Exhibit

Introduction

Psychology as a profession aims to change the lives of people and groups. Using its own scientific foundation for understanding people and their problems, its mission is to promote well-being by changing patterns of thought and behavior (*e.g.*, MacKay, 2008). Change is constant, and, ultimately, the society we live in is the product of numerous changes of paradigms that in turn have led to different values, beliefs, and ideas about reality (Ricou, Cordeiro, Franco, & Costa-Lobo, 2018). In a changing world, in which people are constantly confronted with new choices, psychology faces novel challenges in explaining and predicting the form and nature of rapid societal changes (Smith, Livingstone, & Thomas, 2019). This may be one of the reasons why psychology was identified by Boyack, Klavans, and Börner (2005) as one of the "hub" sciences. Along with mathematics, physics, chemistry, the earth sciences, medicine, and social sciences generally, psychology is one of the most central and influential academic disciplines.

Directions of change in psychology

In a decade where science recognizes the need for a paradigm shift, psychology faces the huge challenge of re-conceptualizing its foundations. Teo (2015) stresses that psychology must critically redefine the relationship between individual subjectivity and society, the importance of reflexivity, and the ethical-political positions that underlie psychological research and practice in different contexts. Rethinking psychological approaches means, on one hand, considering people as in motion and, on the other, knowledge as constant change. These considerations make it impossible to perceive people out of the context of their surrounding world (Chiari, 2019). Systemic approaches are, thus, a requisite for psychological research and practices.

New concepts in psychology have emerged due to the application of quantum principles for modeling cognition and have enabled the use of novel conceptual tools (Pothos & Busemeyer, 2013). Rosenmann, Reese, and Cameron (2016) consider globalization the defining feature of contemporary social life, and emphasize the interconnectedness of societies, economies, and cultures. Globalization is seen as a multifaceted process with a psychological impact on identity, that opens up possibilities for social change through the application of psychological science to the study of complex issues (Rosenmann et al., 2016). Increasingly diverse populations inevitably result from globalization (Edge & Lemetyinen, 2019). In a society that induces a worldwide paradigm shift at all levels, Ferguson (2019) recommends that psychological science embrace change, openness, and transparency, and Teo (2011) advocates challenging the status quo and myths.

Curiously, museums and exhibitions are currently reflecting this conceptual change. Many exhibitions are being created not just for passive viewing, but rather for a readjustment of how visitors understand knowledge or theories (Schreiber, Pekarik, Hanemann, Doering, & Lee, 2013). Such exhibitions also aim to promote the acquisition of cultural competence, which, according to Edge and Lemetyinen (2019), enhances the ability of practitioners to work with a range of individuals with whom they might have little in common. Ultimately, psychology is about supporting and empowering others, and that is why psychologists promote their

clients' autonomy and self-determination and respect their individual differences from a perspective of "unequal equality" (OPP, 2011, p. 14).

Psychology grasps subjectivity in all of its modes of expression. It studies behaviors, and the behaviors that inhibit or increase them; experiences, as well as the experiences that motivate or hinder subjective expressions; and consciousness, and the awareness that reveals or disguises it (Giorgi, 2013). This is why psychology is complex. Subjectivity is at the heart of psychology, and phenomenological approaches seem to be authentic modes of grasping it. Change is made possible by fostering critical thinking and internalizing the theoretical and practical tools that allow psychologists to work with people and communities who suffer (Teo, 2015).

New horizons for psychologists in educational contexts

The core of education is an explicit view of the future and of the resources needed to acquire an adequate engagement with the world (Claxton & Lucas, 2016). Irrevocably, education and its direction are about values (Biesta, 2015). However, today's educational practices may be irrelevant, and even damaging (*e.g.*, Claxton & Lucas, 2016). In this sense, psychology ought to be focusing its efforts and resources on addressing these key concerns by proclaiming its discoveries and possibilities, and shifting to values and priorities that lead to true change.

According to Buck (2015), psychological approaches address diverse issues and needs, and build on different frameworks such as humanistic, phenomenological, solution-oriented, problem-solving, constructivist, executive, systemic, and integrative frameworks. Global systemic frameworks are relatively content-free and help psychologists manage the increasing complexities. Integrating frameworks provide important contributions to the larger field of lifespan development and may establish an alternative to risk- and problem-focused models (Tolan, Ross, Arkin, Godine, & Clark, 2016). This is what psychologists who work in educational contexts do: that is, they use their comprehensive psychological knowledge to promote the welfare of different people and communities.

Psychologists who work in education as practitioners or researchers have a powerful role to play in this important process (Claxton & Lucas, 2016). Gibbs (2018) emphasizes that the role of psychology in education is to help others become human and help people learn to be more human, in the same way that William James questioned the types of human abilities that existed in his time, — and how they could be unleashed, over a century ago (James, 1890). In an increasingly diverse world, a culturally imaginative educational psychology is urgently needed (King, McInerney, Dennis, & Pitliya, 2018). An innovative and imaginative contribution to meeting the challenges needed to make a bigger impact in society, may be to show different people in different contexts some of the concepts all psychologists work with on a daily basis, so as to impact people's knowledge and development, the two core theoretical backgrounds of educational psychology.

Based on the ideas that behavior is an experiment and knowledge is doing, Chiari (2016) goes even further and states that living is knowing and knowing is changing. Both Piaget (1971) and Vygotsky (1978) stressed the importance of cultural activities in the development of symbolic thought and mental operations, as

well as of personal and social adaptation. Meaning is created through an interaction of the interpreter and the interpreted. Meaning does not exist objectively in the world as something to be discovered, but is actively created through human engagement and collaboration.

Falk and Dierking (2012) explain how people learn about and from the environment, namely through artefacts in museums, or exhibition tasks, and thus construct meanings about, and within, cultures. Their model refers to the physical, sociocultural, and personal contexts which give meaning in the course of the visits and the subsequent learning processes and their outcomes. This constructionist epistemology has broadened our knowledge of meaning-making, a process explained by activity theory, which breaks it down into a series of concepts such as internalization and externalization, tool mediation, motives, goals, activities, actions, and operations (*e.g.,* Kaptelinin & Nardi, 2017).

Undoubtedly, some experiences promote meaning-making that has a long-term impact on people's lives. Exhibitions designed to engage visitors for self-education on a subject inspire their visitors to learn more (Leister, Tjøstheim, Joryd, de Brisis, Lauritzsen, & Reisæter, 2017). Furthermore, investing in the development of creative and critical thinking will determine the way future generations cope with contemporary challenges, and generate experiences that may internalize such competencies (Bahia & Trindade, 2014).

The main focus of our study was to contribute to a theoretical foundation for the need to communicate psychological concepts through exhibitions. The secondary focus was a discussion of the feedback given by visitors of all ages and educational contexts about how they enriched their knowledge on emotions through the exhibitions.

Method

The design of this study was descriptive, using all the feedback obtained from the visitors of the "Experiencing Emotions" exhibition, which toured southern Portugal in 2017 and 2018.

Participants

Approximately 9000 people visited the exhibition over a nine-month period. The exhibition travelled throughout southern Portugal and stayed for one or two weeks in 12 different institutions at the request of the psychologists who worked there. Of the 12 institutions visited, three belonged to a municipality (library, fire-headquarters, or social association); one was a community center for pre-school children and the elderly; one was a cultural center; and the other seven were educational institutions from pre-school to higher education (four private schools, two public schools, and one university faculty). Visitors' ages ranged from three to 90. The older visitors came from community, social, and cultural associations and centers. The cultural, ethnic, and social background of the visitors was diverse. The majority lived in underprivileged urban areas and were Caucasian.

The visits were guided by the 12 psychologists who had requested the exhibition. Approximately 6000 people explored the exhibition using the authors' guidelines. However, according to the janitors and security staff who controlled the entrance

to the exhibition at the institutions that were open to the public, 3000 additional people explored it freely; the majority of these people were either families who were picking up their children, or the local staff of the institutions. Of the total visitors, approximately 30% were adults, 40% aged 10 to 20, and 30% aged 3 to 10. Over 300 visitors had special needs (visual, cognitive, and/or physical).

Instruments

Exhibition creators want their messages and narratives to be understood and want to understand their impact on visitors who have different preferences for how they look at and act on their experiences (Schreiber et al., 2013). Understanding what visitors understand and do, and why, is the aim of assessments of the impact of visits to museums or exhibitions, which are done through specific profiles and studies (*e.g.,* Leister et al., 2017). Schawn and colleagues (2014) advocate that such evaluations include the physical, sociocultural, and personal contexts of the spaces and the people involved in the exhibitions. All these dimensions were included in the evaluation of the impact of this exhibition, both on visitors and on the psychologists who worked on it.

The main instrument used at the closing of each exhibition tour was a grid proposed by Bahia & Janeiro (2008) called the Efficacy Evaluation of Educational Interventions in Museums (EEEIM), which was filled in by the psychologists who worked with visitors after all the different visits were made. This grid was constructed on the basis of an eclectic theoretical frame of reference, drawing on behavioral, cognitive, constructivist, systemic, and ecological theoretical models which specified the main categories of evaluation of the effectiveness of exhibitions and other non-formal interventions. The two main categories of the grid were the evaluation of the process and the evaluation of the results. Only this last part was used. It concerned the visitors', psychologists', and monitors' behaviors and opinions pertaining to cognitive, motivational, affective, social, and moral levels of analysis. The grid included a space to record the perception of the efficacy of a specific visit using a Likert-type rating scale from 1 to 7 (1 meaning completely absent and 7 entirely present), as well as a space for the recording of concrete examples.

Additional data on the impact of the visit was gathered through interviews, narratives, statements from the visitors and psychologists, and the results were subjected to an inductive content analysis. A semi-structured interview aimed at complementing all the answers in Bahia and Janeiro's EEEIM grid. The main questions focused on the specific impact of the visit and included what kind of knowledge the visitors gained after the visit; which tasks were more or less engaging; and the impact the visit had over the following days, or even weeks and months. The interviews were carried out by all 12 psychologists responsible for the visits, as well as by the 12 monitors who guided visitors. The first author also interviewed 30 visitors in several locations of EEE, and seven teachers from two schools. One of the school psychologists authored a questionnaire that was also used by two colleagues. The questionnaire was answered by five hundred 12 to 19-year-old students and focused on their overall appreciation of the exhibition, the most and the least interesting tasks, and the impact of the visit. At nine institutions, visitors were invited to write down their opinions about the visit. A total of 85 visitors wrote general comments.

The Exhibition "Experiencing Emotions"

With the purpose of consolidating the relevance of psychology in Portugal, the Southern Regional Delegation of the Order of Portuguese Psychologists promoted a traveling exhibition entitled "Experiencing Emotions" (EEE) for nine months. The exhibition aimed to show the population in several municipalities of this region the importance of psychologists for their daily lives. More specifically, the EEE
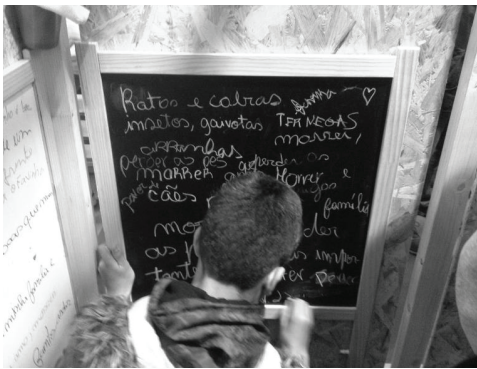

Figure 1. Overview of the EEE set-up

Figure 2. A visitor writing about fears

Figure 3. Visiting "Living Emotions"

presented, in a dynamic and interactive way, one of the main concepts that psychologists deal with in their work, namely, emotions (see *Figures 1* to *3*).

The visitors were asked to recognize emotions, to understand the different contexts in which they arise and how they affect thoughts and behaviors, and to explore ways of transforming them.

Recent perspectives on exhibitions see them as more theme-centered and less object-oriented — that is, arising from collective memories and from contemporary needs. In fact, psychology catches subjectivity in all of its modes of expression (Giorgi, 2013) and must therefore continuously redefine the relationship between individual subjectivity and society (Teo, 2015). Naturally, emotions emerge as an encompassing and critical theme of interest not only to psychologists, but also to everyone else. The exhibition intended to foster alternative representations on emotions (*e.g.*, Tolan et al., 2016) and focused on ways of working with diversity and difference (*e.g.*, Edge & Lemetyinen, 2019). That is why the team was composed of psychologists representing different theoretical models and fields of practice.

The EEE was conceived by a group of 10 psychologists: Ana Meira, David Guedes, Inês Martins, Inês Reis, Luísa Mota, Maria Ana Jaillet, Maria Teresa Martins, Paulo Mota Marques, Tiago Lopes Lino, and coordinator Sara Bahia. Their ages ranged from the early 20s to nearly 60. Having between one and 36 years of experience, these psychologists had worked in clinical, educational, and organizational contexts in different regions of southern Portugal, and belonged to different schools of thought: dynamic, systemic, constructivist, cognitive-behavioral, integrated, humanistic, phenomenological, solution-oriented, and problem-solving. We agree with Buck's view (2015) that various psychological approaches address diverse issues and needs of people, and build on different frameworks.

Beatriz Berger was the graphic designer and illustrator, and Tiago Farinha conceived the wooden structures that displayed the objects of the exhibition. David Guedes, who won the prize of best national junior psychologist for his internship at a non-profit charity organization, wrote the text displayed on the exterior walls of the exhibition and printed on a pamphlet, which visitors could take home. Guedes' (2016) manuscript, which was given to all visitors, highlighted in an accessible manner the main theoretical frameworks and psychological interventions on emotions.

The ultimate goal of exhibitions is to generate change in specific patterns of thought and behavior, as MacKay (2008) has suggested, or even to modify to some extent values, beliefs, and ideas about reality (*e.g.*, Ricou et al., 2018). The present exhibition had two main targets: on one hand, different populations in singular contexts and from various backgrounds; on the other hand, psychologists from different fields of practice and with different experiences, some of whom had few opportunities for sharing perspectives with colleagues due to their geographical locations. One of the main missions of the Southern Delegation of the OPP is precisely to fight against the isolation experienced by some psychologists and the populations they work with, and support and empower people to be autonomous and self-

determined (OPP, 2011). According to Edge and Lemetyinen (2019), psychologists who acquire broad cultural competence adapt their interventions and may transform the lives of more people. Internalizing theoretical and practical tools allows them to work with the different people and communities that are confronted with power and injustice (Teo, 2015). In this sense, the exhibition attempted to provide an opportunity to mobilize communities, and the psychologists who work with them, to discuss and acknowledge the importance of emotions in all their daily activities.

Many exhibitions today feature a series of dynamic events in which symbolic processes create meaning (Hooper-Greenhill, 2000) and redefine values and beliefs (*e.g.*, Duncan, 2005). Research shows that the more dynamic and interactive the exhibitions are, the more effective they are in creating change. Interactive experiences have long been recognized as crucial for individual development (*e.g.*, Piaget, 1971; Vygotsky, 1978). Active meaning-making engages and encourages interaction (*e.g.*, Falk, Randoll, & Dierking, 2012). That is why engaging exhibitions foster self-education and inspire learning (Leister et al., 2017), as well as creative, critical thinking and cooperation skills (*e.g.*, Bahia & Trindade, 2014). Visits to exhibitions provide meaningful learning experiences for all. Therefore, developing these kinds of projects offers opportunities to foster diverse communities and empower people (*e.g.*, Wilson, Bryant, Reynolds, & Lawson, 2015).

Multiple studies have revealed that these experiences are effective in many aspects of development. Schawn, Grajal, and Lewalter's (2014) analysis of museums, zoos, and other type of exhibitions illustrates the importance of an ecology of learning that also affects enjoyment, fun, curiosity, surprise, communication, and aesthetics, and which the authors define as promising areas of future educational research. These exhibitions are perceived as rewarding and usually encompass cognitive, introspective, objective, and social experiences. They are also a place where information can be exchanged before, during, and after the visit, and can be adapted to different types of visitors. For example, hands-on activities in museums develop diverse conversational styles in different children and are inspiring for parent-child communication (Callanan, Castañeda, Luce, & Martin, 2017). Such visits may trigger other extended activities after the visits, such as reading, viewing documentaries, reading books, or experimenting (*e.g.*, Alexander, Johnson, & Kelley, 2012). Visitors frequently consider such exhibitions thought-provoking (*e.g.*, Wilson et al., 2015). Careful integration of hands-on activities that echo and amplify the goals of more traditional exhibitions, encourages deeper communicational skills, thinking, and engagement in learning experiences (*e.g.*, Callanan et al., 2017). Moreover, exhibitions do not only benefit visitors (Edge & Lemetyinen, 2019). In this case, the EEE also intended to enrich psychologists and their work in different contexts, from schools to health care centers and organizations. Psychologists were able to revisit and broaden their knowledge of theoretical and practical frameworks on emotions, and also use an innovative approach to show their clients, colleagues, and communities a concept that is always present in their work. In sum, the mission of the exhibition was to inform and inspire visitors to explore the psychologi-

cal dimensions of emotions, and to allow psychologists to enrich and communicate their knowledge and work on emotions.

No specific theoretical framework was chosen for the exhibition. Instead, the team's view was that the visitors — and psychologists — should explore what emotions are, and see them all as adaptive and essential to well-being. The EEE highlighted six emotions: joy, sadness, fear, disgust, anger, and surprise. The team engaged in a lively debate before deciding on these emotions and the activities that would be appropriate for all types of visitors. The 30 different activities of an interactive nature, could be explored individually or guided by a psychologist.

The activities were divided into three parts, and exhibited in three different spaces, specifically, in wooden cabins of 15 square meters each. The presentation of the information was both sequential and synchronized, and appealed to the use of all the senses, but mainly vision and touch, and to personalized interpretation of hands-on activities; it included listening to some narratives (*e.g.*, Schawn et al., 2014). A compact guide was given to all visitors to facilitate the tour. Resources included headphones, manipulating various objects, and writing with markers on the walls, white boards, and post-its. The exhibition was conceived to be inclusive in the sense that the architectural structure was built to accommodate wheelchairs, and visitors with special needs could complete all the activities.

In the first part, Recognizing Emotions, visitors were invited to prepare their senses before entering and look for emotional clues during the four sections which were displayed sequentially in a maze (see *Table 1*).

Table 1

Activities of Part 1 — Recognizing Emotions

I. "Try-out" encouraged visitors to touch and smell objects, or look at different images and notice the thoughts, memories, and emotions they evoked. The last part of this first section was a walk through a maze of different textures.

II. "Identify and post-it!" where visitors had to stop and write on post-its all the emotions they had felt up to that moment of the visit.

III. "Cube of Fear," a dark empty cube which visitors entered. Afterwards they were invited to write what their greatest fear was on a big whiteboard or blackboard, entitled "The book of fear."

IV. "Think with your body" consisted of six different silhouettes painted on the wooden wall at the end of the maze. Each of them represented one of the six emotions depicted: joy, sadness, fear, disgust, anger, and surprise. Visitors had to draw the parts of the body in which they usually feel each emotion.

In the second part, Living Emotions, the activities encouraged visitors to explore different contexts in which we experience emotions, and discover how different ways of thinking about situations can elicit different feelings (see *Table 2*).

Table 2

Activities of Part 2 — Living Emotions

I. "Listening to emotions" consisted of chairs being placed in front of four scenarios (school-yard, girl's room, fireplace, and airport lounge) where visitors sat and listened on the headphones to the emotional narrative of actors impersonating a bullied pupil, a girl listening to her parents arguing, an unemployed father, and a businesswoman afraid of flying. The narratives were written by four clinical and educational psychologists, members of the team which organized the exhibition.
II. "A situation experienced with such different emotions!" asked visitors to observe the same picture from two different perspectives. In both images the boy is receiving a prize, but the emotion depicted is very different. Visitors had to identify what the possible emotions in both images were, and reflect on how winning can make us feel different emotions depending on how we look at the situation (as an achievement, a threat, a responsibility, or something undeserved?).
III. "Contextualizing emotions" communicated the idea that different contexts may elicit different thoughts, verbalizations, and postures. Visitors were requested to write on balloons different thoughts and narratives that an articulated wooden manikin in each context might be feeling, analyze the influences of emotions in behavior, and manipulate the manikin in order to express possible emotions.
IV. "Tree of emotions" encouraged visitors to match emotions and a set of popular proverbs or expressions, and think about the cultural biases that underlie such expressions.

The third space, Transforming Emotions, gave visitors different opportunities to feel, transform, communicate, and express different emotions (see *Table 3*).

Table 3

Activities of Part 3 — Transforming Emotions

I. "Emotional shadows" invited visitors to shape their bodies in front of the projector so that their shadow matched three silhouettes painted on the wall, which ranged from crouching on the floor to raising their arms in the air.
II. "Emotions transformation table" offered almost impossible games and puzzles that made visitors lose their patience, and then explained different ways of balancing emotions.
III. "Zigzag of transformations" consisted of a series of activities for visitors to try out different strategies to regulate their emotions. They were invited to externalize emotions through yelling their frustrations into a hole or scribbling on a whiteboard, phoning someone or hugging a huge teddy bear, rehearsing different expressions in front of the mirror and trying to modify the thoughts behind them, relaxing inside the canopy, distracting themselves with games, or simply accepting their own emotions.

Before leaving, visitors read a big board with the sentence: "Thank you for your visit, and remember that psychologists can help us deal with emotions!" An explanatory text on emotions (Guedes, 2016) was engraved on the external walls of the exhibition.

Psychologists interested in showing the exhibition in their workplaces request-ed it by mail and were responsible for guiding the visits or ensuring individual visits. Each psychologist could explore the potential of the 30 activities, equally dis-tributed through the three sections, and adapt them to the specific populations that visited.

Data analysis

Content analysis from the interviews with visitors and psychologists, question-naires filled out by psychologists, narratives written after the visit by students, and statements written by the public during their visits were the data. It is important to note that the results pertain only to the data collected from these instruments. Two visits were not recorded by the psychologists, and in the places where visits were not guided, the only record was of the number of visitors noted by the security guard of the building where the exhibit was housed. Thus, the final number of visi-tors studied amounted to approximately 5000.

Results

The results of the impact of the Exhibition Experiencing Emotions are presented in accordance with Schawn and colleagues' (2014) categorization and Bahia and Janeiro's observational grid (2008).

In terms of the physical context, the exhibition was considered by both the psychologists and visitors as well-organized and with an easy orientation. All the people interviewed commented that the architecture and design of the exhibition was appealing and appropriate to the expression of emotions. In all locations, the atmosphere of the exhibition created interest and surprise. The ambience during the visits aroused curiosity, smiles, and laughter in all three spaces.

The sociocultural context considers the mediation with the visitors. In this case, the visits lasted between 30 and 50 minutes, and the majority of them were guid-ed. However, the tasks required a personalized interpretation. Groups of 8 to 12 visitors entered the first space where objects and tasks were presented in a maze in which only two people could wander side by side. The information was presented visually through drawings, signs, or short sentences with particular relevance to the hands-on activities and was considered very attractive and thought-provoking, in consonance with the view of Ali, Koleva, Bedwell, and Benford (2018), who found that physical placement and aesthetic content ensure effective shaping experiences. Most of the information across the space was available simultaneously, — and was acquired on the move.

The space where visitors remained the longest was "Transforming Emotions." The most appreciated was "Zigzag of Transformations," but curiously, the least ex-ecuted task was "Emotional shadows." In all places both adolescent and adult visi-tors were embarrassed to exercise their bodies and make their shadow overlap the silhouettes painted on the walls. Children were less shy, but did not take promptly to the task. Some psychologists and other monitors interviewed thought that this was due to a cultural problem: tasks involving body movement are not very com-mon in public spaces.

In terms of the personal context, the sample was varied in terms of age, background, prerequisites, prior knowledge, and interests. Different motives led people to visit, ranging from school trips to a neighbor's suggestion. Expectations also varied: from an opportunity to learn part of a school subject to the belief that there is nothing more to learn, as two of the elderly groups expressed it. The beliefs of the visitors were also diverse, but all assumed the visit would be interesting, useful, and thought-provoking.

Table 4

Competencies acquired in the twelve visits to the Exhibition

Level	Competencies	Mean	Examples
Cognitive	Specific knowledge acquired	5.3	"Emotions are more adaptive than I thought". (senior man)
	Problem solving processes	4.5	"The boy holding the trophy is sad because winning makes him more competitive" (written on the board by an adult). "I feel fear in my tummy and my colleague feels it in her throat". (12-year-old boy).
	Critical analysis skills	4	"I now understand my father's feelings." (15-year-old boy)
	Presentation of innovative and creative solutions	4.1	"Scribbling is a good way of externalizing my anger towards …" (10-year-old girl)
Motiva-tional	Time of participation	6.2	90% were attentive and engaged
	Task involvement	6.4	More than 90% of the visitors were actively involved in questioning and explaining. The least engaged were the senior visitors.
Affective	Emotional expression	5.8	"Her body shows melancholy." (13-year-old girl)
	Aesthetic sensibility	4.5	"The drawings of each emotion are very expressive." (psychologist)
	General appreciation	6.1	"The exhibition has changed the way I think about emotions." (senior visit 4 months after the visit)
Social	Social skills	4.5	Frequent interactions
	Collaboration skills	4.3	Help others find solutions. Discussing perspectives
	Communication skills	4.2	Nearly all visitors spoke and half of them wrote.
	Acceptance of diversity	4.1	"I hope people can control their emotions more frequently!" (16-year-old boy)
Moral	Attitudes	5.6	Surprise, cooperation
	Values	5.1	General respect for the exhibition
	Ethical concerns	4.5	"I wish we could respect everyone's feelings." (10-year-old girl)

Scale: From 1 (minimum) to 7 (maximum)

The main results of the responses of the 10 psychologists to the EEEIM grid are summarized in *Table 4*. The global result is an average of nearly 5 points out of 7 (4.95) for the totality of dimensions measured, which can be interpreted as a positive indicator.

The analysis of the post-its written by the visitors in the second "Identify and post-it!" revealed that 78% (N=5102 of a total of 6541) of the contents referred to the primary emotion of happiness. Fear, surprise, and disgust were also mentioned. Distress and sadness due to sad remembrances were mentioned by 2% (N=39) of the adults.

Using the records of the psychologists who provided information and the photographs taken after visits, the body parts most identified as being the part where each person felt a specific emotion are in *Table 5*.

Table 5

"Think with your body"

joy	head, heart
sadness	tummy, head
fear	legs, stomach
disgust	head, hands
anger	forehead, ears, chest
surprise	hands, mouth

The thoughts and verbalizations varied according to the context. For instance, there were 10 instances of the greatest fear being "being caught and going to prison" in a school in a neighborhood where many thefts occur. However, the most relevant result mentioned by the psychologists and monitors in the interviews, was that thinking about the possible thoughts underlying the expression of emotions was challenging and motivating. Three psychologists mentioned that this was the most effective activity.

Three main categories emerged from the interviews with the psychologists and monitors: deeper knowledge, change in behavior, and emotional reflection (on self and others). In the schools where the exhibition was displayed, teachers told the psychologists that they noticed the pupils (ages between 3 to 18) expressed more emotions verbally in the days following their visit. Another indicator was the wide attention span and engagement, both in schools, where students behaved better than usual, and in the other contexts. Visitors recognized that they had learned more about emotions, what they are, how they affect people's lives, and how they can be changed. Moreover, the psychologists, and also some teachers, considered the exhibition a starting point and further engaged in activities to develop the theme. But maybe the most interesting and unexpected result was that six psychologists reported that some visitors still spoke about the contents of the exhibition one or two years later.

Discussion

The main aim of the exhibition was to make people recognize that emotions are essential for their adaptation, and that this awareness can change their lives. That is what the team who conceived it intended to achieve. In all the activities, the key idea that the Exhibition Experiencing Emotions had in mind was that knowing is changing. To some extent we may say that the visit to the EEE changed the way visitors looked at emotions. However, we cannot draw this conclusion because the evaluation was not systematic, due to the huge number of visitors and the nature of the exhibition. Nonetheless, we can be sure that this exhibition was a modest contribution to people rethinking alternative practices of psychology by proclaiming its discoveries and possibilities (*e.g.,* Smith et al., 2019), facilitating its application to the study of problems (*e.g.*, Rosenmann et al., 2016), and incentivizing debates (*e.g.*, Pothos & Busemeyer, 2013).

Providing people with an opportunity to use tools and experiment hands-on (*e.g.*, Kaptelinin & Nardi, 2017) and exchange information before, during, and after the visit (*e.g.*, Callanan et al., 2017) constituted an alternative to the way psychology is traditionally seen in Portugal. Visiting exhibitions offer added value to the creation of meaningful learning experiences in varied contexts (Clark, Ashbrooke, & Price, 2019). Furthermore, as Schreiber and colleagues (2013) state, exhibitions provide an opportunity for people to readjust their understanding of a piece of knowledge or theories. That unquestionably happened with the psychologists of the team and the ones who worked with the exhibition. In order to be truly transformative, psychology should consider taking up the systemic practices that enable more people to benefit from its concepts.

Further ideas were developed in each institution. For example, some psychologists a developed a leaflet of activity suggestions for teachers after the visit to the exhibition. The exhibition was explored as a useful instrument for psychologists in these contexts and turned out to be a powerful vehicle to deepen knowledge and reflection on emotions.

In school contexts, the psychologists had the opportunity to develop activities related to each part of the exhibition. After the first part ("Recognizing emotions") psychologists engaged groups and individual students of different ages in reflecting on different emotional states caused by situations in daily life. These included analyzing people's feelings, such as fear; showing how they can benefit from their mistakes; discovering abstract words that express emotions and ways to apply them; understanding other senses of words and expressions and matching them to different images; finding ambiguous or metaphorical emotional expressions; or using long written or oral texts with emotional vocabulary.

"Living emotions" was the motto for working with people who live with emotionally challenging experiences, to develop creative associative writing; analyze proverbs and quotes about emotions; examine, debate, and act out situations that require emotional control solve emotional dilemmas; and observe and analyze the emotions displayed in the functioning of social groups.

The tasks developed to work on the contents of the third part ("Transforming emotions") included finding multiple solutions to transforming emotions and analyzing their viability; deliberate training of dexterity and motor coordination in an

effort to express sequences of emotions; making shadows with the body, arms, or fingers to express different emotional states; verbalization or dramatization of situations that lead to different emotional tonalities; and the simulation of situations of emotional persuasion.

These are some examples of how psychologists who work in educational contexts may use these kinds of exhibitions to promote many opportunities for change. Both the solid and thorough theoretical foundation of the exhibition, as well as the activities suggested, motivated the psychologists to further explore the theme in much more active and interactive ways than they would have if they had not had access to the exhibition. In this sense this exhibition was inspiring to all its users.

Although psychologists recognize their field of theory and practice as being of utmost importance in promoting a better life in this changing world, society is far from acknowledging that potential of the role of psychology and psychologists. That is the situation which this exhibition attempted to remedy. The results showed that the exhibition promoted a deeper knowledge of emotions, as well as behavioral changes and emotional reflection about self and others. The attention span and engagement during the visits motivated involvement in the further activities conceived to develop the exhibition's theme and led to a deeper understanding of what emotions are, how they affect people's lives, and how they can be changed.

Another unexpected result was the follow-up one and two years after the exhibition. Six psychologists emailed the Order to inform us that one year later, visitors still spoke about the contents of the exhibition, and two repeated the same content two years later, revealing that exhibitions like this one may be powerful instruments to help people learn to be human, as Gibbs (2018) proposes. It is an imaginative way to make a large impact on society by showing people in different contexts what psychological concepts are, and how they may impact people's learning and development, thus ultimately promoting the welfare of different people and communities.

From the data gathered, the exhibition touched the lives of thousands of visitors, and hopefully was able to positively influence some of them.

References

Alexander, J.M., Johnson, K.E., & Kelley, K. (2012). Longitudinal analysis of the relations between opportunities to learn about science and the development of interests related to science. *Science Education*, *96*(5), 763–786. https://doi.org/10.1002/sce.21018

Ali, S., Koleva, B., Bedwell, B., & Benford, S. (2018). Deepening visitor engagement with museum exhibits through hand-crafted visual markers. In I. Koskinen, Y. Lim, T. Cerratto-Pargman, K.Chow, & W. Odom (Eds.), *Proceedings of the 2018 Designing Interactive Systems Conference* (pp. 523–534). New York: ACM. https://doi:10.1145/3196709.3196786

Bahia, S., & Janeiro, I. (2008). Avaliação da eficácia das intervenções educacionais em museus: Uma proposta teórica. *International Journal of Developmental and Educational Psychology, 1*(3), 35–42.

Bahia, S., & Trindade, J.P. (2014). Criatividade, cooperação e pensamento crítico: um exemplo em contexto de educação não formal. *Revista Amazônica, 14*(1), 300–324.

Bertrando, P., & Arcelloni, T. (2014). Emotions in the practice of systemic therapy. *Australian & New Zealand Journal of Family Therapy, 35*(2), 123–135. https://doi.org/10.1002/anzf.1051

Biesta, G. (2015). Teaching, teacher education, and the humanities: Reconsidering education as a Geisteswissenschaft. *Educational Theory, 65*(6), 665–679. https://doi.org/10.1111/edth.12141

Boyack, K.W., Klavans, R., & Börner, K. (2005). Mapping the backbone of science. *Scientometrics, 64*, 351–374. https://doi.org/10.1007/s11192-005-0255-6

Buck, D. (2015). Reconstructing educational psychology reports: an historic opportunity to change educational psychologists' advice? *Educational Psychology in Practice, 31*(3), 221–234. https://doi.org/10.1080/02667363.2015.1030724

Callanan, M.A., Castañeda, C.L., Luce, M.R., & Martin, J.L. (2017). Family science talk in museums: Predicting children's engagement from variations in talk and activity. *Child Development, 88*(5), 1492–1504. https://doi.org/10.1111/cdev.12886

Chiari, G. (2016). To live is to know, to know is to change: Change in personal construct psychology and psychological constructivism. *Journal of Constructivist Psychology, 29*, 340–356. https://doi.org/10.1080/10720537.2015.1134364

Clark, Z., Ashbrooke, L., & Price, J. (2019). Creating meaningful learning for children's nursing students: Can museum field trips offer added value? *Comprehensive Child and Adolescent Nursing, 42*(1), 71–84. https://doi.org/10.1080/24694193.2017.1390008

Claxton, G., & Lucas, B. (2016). The hole in the heart of education (and the role of psychology in addressing it). *Educational Psychology Review, 40*(1), 4–12.

Duncan, C. (2005). *Civilizing rituals: Inside public art museums*. London: Routledge. https://doi.org/10.4324/9780203978719

Edge, D., & Lemetyinen, H. (2019). Psychology across cultures: Challenges and opportunities. *Psychology and Psychotherapy: Theory, Research and Practice, 92*(2), 261–276. https://doi.org/10.1111/papt.12229

Falk, J.H., Randol, S., & Dierking, L.D. (2012). Mapping the informal science education landscape: An exploratory study. *Public Understanding of Science, 21*(7), 865–874. https://doi.org/10.1177/0963662510393606

Ferguson, C.J. (2019). Embrace the unknown. *The Psychologist, 32*, 46–49.

Gibbs, S. (2018). The immorality of education: A position paper for educational psychologists. *Educational & Child Psychology, 35*(3), 86–96.

Giorgi, A. (2013). Reflections on the status and direction of psychology: An external historical perspective. *Journal of Phenomenological Psychology, 44*(2), 244–261. https://doi.org/10.1163/15691624-12341257

Guedes, D. (2016). *Experimentar emoções: Texto informativo*. Lisboa: Ordem dos Psicólogos Portugueses/Delegação Regional Sul.

Hooper-Greenhill, E. (2000). Changing values in the art museum: Rethinking communication and learning. *International Journal of Heritage Studies, 6*(1), 9–31. https://doi.org/10.1080/135272500363715

James, W. (1890). *The principles of psychology*. New York: H. Holt & Co. https://doi.org/10.1037/10538-000

Kaptelinin, V., & Nardi, B. (2017). Activity theory as a framework for human-technology interaction research. *Mind, Culture, and Activity, 25*(1), 3–5. https://doi.org/10.1080/10749039.2017.1393089

King, R.B., McInerney, D.M., & Pitliya, R.J. (2018). Envisioning a culturally imaginative educational psychology. *Educational Psychology Review, 30*(3), 1031–1065. https://doi.org/10.1007/s10648-018-9440-z

Leister, W., Tjøstheim, I., Joryd, G., de Brisis, M., Lauritzsen, S., & Reisæter, S. (2017). An evaluation-driven design process for exhibitions. *Multimodal Technologies and Interaction, 1*(4), 25. https://doi.org/10.3390/mti1040025

MacKay, T. (2008). Can psychology change the world? *The Psychologist, 21*(11), 928–931.

OPP (2011). *Código deontológico da Ordem dos Psicólogos Portugueses*. Lisboa: Ordem dos Psicólogos Portugueses.

Piaget, J. (1971). *Biology and knowledge: An essay on the relation between organic regulations and cognitive processes*. Chicago: University of Chicago.

Pothos, E.M., & Busemeyer, J.R. (2013). Can quantum probability provide a new direction for cognitive modeling? *Behavioral and Brain Sciences, 36*(3), 255–274. https://doi.org/10.1017/S0140525X12003226

Ricou, M., Cordeiro, S.A., Franco, A., & Lobo, C.C. (2018). The identity of psychology. *The Psychologist: Practice & Research Journal, 1*(1), 2–15. Retrieved from https://www.researchgate.net/publication/325858244_The_Identity_of_Psychology

Rosenmann, A., Reese, G., & Cameron, J.E. (2016). Social identities in a globalized world: Challenges and opportunities for collective action. *Perspectives on Psychological Science, 11*(2), 202–221. https://doi.org/10.1177/1745691615621272

Schwan, S., Grajal, A., & Lewalter, D. (2014). Understanding and engagement in places of science experience: Science museums, science centers, zoos, and aquariums. *Educational Psychologist, 49*(2), 70–85. https://doi.org/10.1080/00461520.2014.917588

Schreiber, J.B., Pekarik, A.J., Hanemann, N., Doering, Z., & Lee, A.J. (2013). Understanding visitor engagement and behaviors. *The Journal of Educational Research, 106*(6), 462–468. https://doi.org/10.1080/00220671.2013.833011

Smith, L., Livingstone, A., & Thomas, E. (2019). Advancing the social psychology of rapid societal change. *British Journal of Social Psychology, 58*(1), 33–44. https://doi.org/10.1111/bjso.12292

Teo, T. (2011). Reconstructing the critique of ideology: A critical-hermeneutic and psychological outline. *Annual Review of Critical Psychology, 9,* 20–27.

Teo, T. (2015). Are psychological "ethics codes" morally oblique? *Journal of Theoretical and Philosophical Psychology*, 35(2), 78. 78–89. https://doi.org/10.1037/a0038944

Tolan, P., Ross, K., Arkin, N., Godine, N., & Clark, E. (2016). Toward an integrated approach to positive development: Implications for intervention. *Applied Developmental Science, 20*(3), 214–236. https://doi.org/10.1080/10888691.2016.1146080

Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Wilson, L., Bryant, W., Reynolds, F., & Lawson, J. (2015). Therapeutic outcomes in a museum? "You don't get them by aiming for them." How a focus on arts participation promotes inclusion and well-being. *Arts & Health, 7*(3), 202–215. https://doi.org/10.1080/17533015.2015.1046891

The Principle of Open Individuality as a Basis for Teenagers' Creative Interaction with Lyric Poems

Ksenia V. Mironova[*]

Psychological Institute of the Russian Academy of Education, Moscow, Russia

*Corresponding author. E-mail: kseniamir@inbox.ru

Background. Although lyric poetry contains enormous opportunities for personal development of teenagers, expanding the scope of aesthetic experiences available to them, students often respond to it with hostility, for it is rather hard for them to comprehend. While much prior research has stressed the importance of teaching poetry to adolescents, the psychodidactic foundations of developing their creative interaction with lyric poetry and the role of textbooks in this process remain virtually unexplored.

Objective. To examine the psychodidactic foundations of developing teenagers' creative interaction with lyric poetry: the relevant principles and their implementation in an educational book of a new — psychodidactic — type, which determines the strategy and tactics of the joint study activity modeled in it.

Design. A teaching intervention was conducted, which included whole-class discussions of the poems and work with educational books based on psychodidactic principles. Participants were 311 6th-8th grade students from four Moscow secondary schools.

Results. The principle of open individuality was singled out as the basic one and was elaborated in four interrelated sub-principles: wholeness, polylogy, multidimensionality, and value hierarchy. These principles were implemented in two educational book chapters on lyric poems by A. Pushkin and M. Lermontov. The Wilcoxon signed-rank test conducted upon the results before and after the intervention revealed that the control group showed no significant changes, whereas the final results of the experimental group revealed significant (p < .001) increases in the level of the assessed aspects of creative interaction: description of one's impression, interpretative opinion, lyric plot, experiences of the lyric hero, and figurative language.

Conclusion. Building the learning process on the psychodidactic principles mentioned above, as well as working with educational books based upon these principles, is effective in developing teenagers' creative interaction with lyric poems, turning the reading of poetry into a valuable experience.

Keywords: creative interaction; psychodidactic principles; open individuality; lyric poetry; teenagers

Introduction

Reading lyric poetry is often considered as something related mostly to literature and aesthetics, but actually it should be viewed more holistically, as part of how individuals perceive, understand, and value themselves, other people, and reality at large. Poetry comprehension and appreciation are inextricably linked with exploring the inner and outer worlds, one's values, thoughts, feelings, and emotions (*e.g.*, Dias & Hayhoe, 1988; Eva-Wood, 2004; Leontiev, 2010; Novlyanskaya & Kudina, 2014; Peskin, 2010; Rosenblatt, 2004). Vygotsky called art, including lyric poetry, "a method for finding an equilibrium between man and the world, in the most critical and important stages of his life" (Vygotsky, 1986, p. 329). Researchers generally agree that adolescence is one of these stages. Modern teenagers are in dire need of such balancing, gaining control over their feelings, as they are exposed to various external and internal struggles connected with growth issues, self-esteem, trust and acceptance, peer pressure, etc. (Fel'dshtein, 2004; Rice & Dolgin, 2005; Tolstykh & Prikhozhan, 2016). Lyric poetry contains enormous opportunities for personal development of adolescents, expanding the scope of aesthetic experiences available to them, promoting a thoughtful attitude towards oneself and others.

All too often, however, teenagers lose interest in poetry during secondary school and gradually start responding to it with hostility (*e.g.*, Andrews, 1991; Dymoke, Barrs, Lambirth, & Wilson, 2015; Fleming 1992; Gutkina, 2015). The difficulties students have in making sense of the poems, constructing both the literal and figurative meaning of the text, may not only diminish their appreciation of the poems, but even lead to frustration (Hanratty, 2011; Mathieson, 1980; Peskin, 1998). Frustration may also occur when the reader adopts the wrong reading stance, by approaching poems to gain information as one might approach a reference book, or by giving prose translations of the poem's literal meanings instead of exploring the symbolic content (Dias & Hayhoe, 1988; Eva-Wood, 2004; Fleming, 1992; Harker, 1994; Peskin, 2010; Rosenblatt, 1980). Another problem is secondary school teachers' lack of confidence with poetry due to the difficulties they experience teaching it and attempting to maintain students' interest in it, as well as assessing the students' comprehension of a poem (Benton, 1984; Wade & Siddaway, 1990; Xerri, 2016). Therefore, there is a tendency to unofficially squeeze poetry out of the curriculum on the grounds that it is irrelevant and largely incomprehensible for the teenagers. As a result, poetry's potential remains unfulfilled, and there is often a gap between the stated objectives and actual learning experiences.

Although much prior research has stressed the importance of teaching poetry to adolescents, the psychodidactic foundations of developing their creative interaction with lyric poetry and the role of textbooks in this process remain virtually unexplored. This brings us to the aims of our work, which were to investigate these foundations: to reveal the relevant psychodidactic principles and implement them in an educational book of a new — psychodidactic — type, which determines the strategy and tactics of the joint study activity modeled in it (Granik, 2009; Granik & Borisenko (Eds.), 2018; Soboleva, 2019). These books contain a kind of scenario for the learning process, constructed with consideration of the patterns and mechanisms of students' mental development. In some cases, the text of the psychodidactic educational book is similar to the teacher's narrative, a mini-lecture, but more

often it is like a conversation with the young reader. Particular attention is paid to promoting students' cognitive interest and providing feedback — possible answers and thoughts regarding some of the questions raised.

Psychodidactics is the area of educational psychology that integrates psychological, didactic, methodological, and subject knowledge, while shifting the emphasis to students' personal development (*e.g.*, Davydov, 1996; Gelfman & Kholodnaya, 2006; Panov, 2007). According to the psychodidactic approach, the assimilation of knowledge, the formation of skills and abilities, are viewed not as learning objectives, which is characteristic of the **didactic** approach, but as a means of developing the student's cognitive and personal spheres (Kholodnaya & Gelfman, 2016; Panov, 2007; Stones, 1978). The practical implementation of the psychodidactic principles in educational books will make it possible to overcome the existing gap between scientific research and pedagogical practice.

The Psychodidactic Principle of Open Individuality

We consider the comprehension of lyric poetry as a purposeful process of creative interaction of the reader with the poem, which process comprises three consecutive stages: 1) the *syncretic* — a holistic grasp of meaning, indivisible unity of feelings, thoughts, and emotions during the first reading of the poem; 2) the *analytic* — analysis of the lyric plot, figurative language, poetic form and structure; and 3) the *synthetic* — interpretative synthesis based on emotional and cognitive processes (Mironova, 2018). We agree with the point of view shared by many researchers that the reader's experiencing of the text and the reader's search for meaning contained in the text are equally important for comprehension of poetry (*e.g.*, Belyaeva, 2004; Eva-Wood, 2004; Fleming, 1996; Fleming & Stevens, 2015; Hanratty, 2011; Sigvardsson, 2017). For the purpose of measurement, we operationalized the theoretical construct by specifying the main indicators of creative interaction with a poem: at the first stage, description of one's impression (feelings, thoughts, emotions); at the second stage, description of the lyric plot and the experiences of the lyric hero, recognition of figurative language and description of its role in the poem; at the third stage, interpretation of the poem, substantiation of one's opinion.

As a result of the analysis, generalization, and systematization of knowledge about the research problem, we identified the **principle of open individuality** as the basis for creative interaction of teenagers with lyric poetry. This implies, firstly, meaningful communication with the poem regarded as an aesthetic individuality, a soul opened to the reader; and secondly, the reader's self-discovery and self-disclosure, awakened, inspired, and intensified by the poem, which presupposes personal and interpersonal reflection. This principle is the basic one, since in order for deep interaction with the lyric poem to take place, it is necessary to realize that poetry is a condensed form of self-expression, and therefore the reader's openness is required — openness to the poem, i.e., willingness to respond to it emotionally and intellectually; as well as openness to oneself, i.e., readiness for self-exploration, reflection, enrichment of one's experience. Openness does not mean vulnerability or dissolving oneself in someone else's mind; as Bakhtin noted, the reader should capture and apply a dual vision from both within and without (Bakhtin, 1986). The

process of creative interaction with a poem presupposes the meeting of open individuals — the author and the reader.

The general principle of open individuality can be elaborated in four sub-principles: wholeness, polylogy, multidimensionality, and value hierarchy.

The ***principle of wholeness*** means, firstly, applying a holistic approach to a person (to oneself and other people, including the poet and the lyric hero), who is viewed as an integral individual with a unique inner world irreducible to its separate characteristics; secondly, considering the lyric poem as a wholeness, which predetermines our understanding of the parts and ensures their unity, and as an expression of a *part* of mental life, which, when placed by the poet at the center of attention, acquires the properties of the *whole*, i.e., of a complete, full-fledged artwork. Practical implementation of this principle requires repeated meaningful reading of the poem, including a return to consideration of it as a whole after talking about any of its semantic aspects (parts). It also means exploring, through the experiences expressed in the poem, the unique features of the lyric hero's inner world, his or her mental life and perception of the external world. It is important to emphasize that during this process of exploration, students build a meta-awareness of not only *what* they are doing, but *why* and *how*.

The ***principle of polylogy*** (from the Greek words *poly*, "many", and *logos*, "word" or "discourse") implies a meaning-opening and meaning-making subject-to-subject interaction, which involves the alternation and co-presence of various *voices*: that of the poet, the critics, the teacher, the students (classmates) — all of whom are given equal space and weight and are unified by a joint search for truth, for explicit and implicit meanings. Improving the effectiveness of communication is crucial when working with adolescents, for whom communication comes to the forefront of learning, turns into the leading activity that becomes a subjective means of their personal, cognitive, social development (El'konin, 1971). Therefore, researchers stress the importance of vivid discussions during poetry lessons, especially with teenage students (Dymoke et al., 2015; Fleming & Stevens, 2015; Hanratty, 2011; Vala, Sladová, Řeřichová, & Fic, 2014). Schoolchildren often get used to the idea that each artwork has a certain standard interpretation needed to be uncritically accepted and memorized. The principle of polylogy takes into account the plurality of meaning, i.e., the possibility of different readings of a text, provided they are well-supported by textual evidence, and respecting another person's opinion, which may be used as a springboard for one's own analysis.

The ***principle of multidimensionality*** means, firstly, regarding the lyric poem as a multi-level structure containing different semantic layers that are closely soldered to each other and at the same time have a certain independence from each other; secondly, expanding the intellectual experience of a teenager in the process of revealing the connections of the poem with the legacy of the world's philosophical and psychological wisdom. In order to discover various semantic dimensions, it is important to activate students' attention to all text elements, to encourage them to delve into the poem's lines, stanzas, and figurative language. Detail-oriented reading heightens the reader's sensitivity to the nuances used to convey a particular state or mood. Putting the poetic text into a wider context and exploring the symbolism of the poem activate adolescents' imagination, and their intellectual and emotional spheres.

The ***principle of value hierarchy*** presupposes, firstly, identifying the axiological foundations that underlie the poem, including the universal values (*e.g.*, peace, love, freedom) and the subjective, relative ones, related to the personally significant attitude of the lyric hero toward the described internal event (situation). Secondly, the principle presupposes alignment of intra-value gradation, i.e., possible levels of manifestation of a particular value expressed in the poem. Key ways of implementing this principle include polarization of values for a clearer awareness of the value content: formulating axiological poles — the one from which the lyric hero emanates and its opposite; and referring to the personal experience of the student, considering the poem in the context of personal and general cultural meanings.

These principles are closely interconnected, interdependent. To bridge the gap between theory and practice, we implemented these principles while writing educational books — two chapters devoted to lyric poems by the renowned Russian poets A. Pushkin and M. Lermontov (Mironova, 2012, 2019). The next step of our research was the experimental validation of the principles and chapters, to discover whether there is a positive trend in the development of the teenagers' ability to creatively interact with the poems as a result of building the learning process on psychodidactic principles and working with educational books of the psychodidactic type.

Method

Participants

The sample consisted of 311 students in 6th (n = 102), 7th (n = 115), and 8th (n = 94) grades from four Moscow secondary schools; age $M = 13.7$, $SD = 0.88$, age range 11.9–15.3. They were divided into experimental (n = 236) and control (n = 75) groups.

Materials

As stimulus material, we used five poems by A. Pushkin ("Winter Morning", "To I.I. Pushchin", "To Nanny", "Cloud", "To K***" ["I remember a wonderful moment …"]) and five poems by M. Lermontov ("The Rock", "In the Wild North Stands Lonely...", "When Yellowish Fields Get Ruffled...", "Clouds", "The Sail"). The experimental group worked with two educational book (EdB) chapters — "Conversations about A.S. Pushkin's lyrics" (Mironova, 2019) and "Eleven poetic masterpieces" (Mironova, 2012).

Procedure and Measures

Work with the experimental (E) group included whole-class discussions of the poems based on the EdB chapters, individual and whole-class chapter reading, and working with the EdB chapters. The intervention took place during regular literature lessons and was conducted for one and a half months. There were one or two lessons per week for a total of eight lessons per class. The control (C) group studied as usual, using traditional textbooks.

Before and after the teaching intervention, all participants completed open-ended writing tasks, in which they had to describe in detail: (a) their impression of the poem — their feelings, thoughts, emotions, (b) the lyric plot, (c) the experiences of the lyric hero, (d) the main literary devices used in the poem and their role in it, and (e) the meaning that, in their opinion, the poet wanted to convey. Students were required to use textual evidence to support their reasoning. These tasks correspond to the main indicators of creative interaction with a poem mentioned earlier.

Based on the assessment criteria, we conducted a qualitative analysis of the written responses. *Impression description* was coded as "1" if it was limited to common and/or abstract words (*e.g.*, "This poem ["To K***"] causes delightful feelings, solemn thoughts of love and inspiration"), and as "2" if it was more specific, personal ("The poem "To I.I. Pushchin" makes me feel like I'm parting with my best friend. I admire the way Pushkin and Pushchin fearlessly supported each other. I think in the past people used to know how to be friends more, really valued friendship"). To assess *lyric plot description*, experts (philologists) singled out *key elements of explicit-implicit content* (KEEIC) for each poem. Scoring for these assignments was based on the number of KEEIC that students mentioned in their responses: "1"– less than a half; "2" — one half or more than a half; "3" — all the KEEIC. *Description of the experiences of the lyric hero* was coded as "1" if it was brief, incomplete, and as "2" if it was detailed and well-reasoned. *Figurative language recognition and description of its role in the poem* was coded as "1" if at least one literary device (an example of figurative language) was identified, but the role it plays in the poem was not explained; as "2" if 1–2 literary devices were identified and their role was explained; as "3" if 3 or more literary devices were identified and their role was explained.

The results of the final task — *interpretation of the poem, substantiation of one's opinion* — were coded as follows: "1" — partially correct but containing a distortion of meaning; "2" — correct but not reasoned well enough; "3" — well-reasoned, text-based. It needs to be clarified what is meant in this case by *"correct"*. Without diminishing the importance of the subjective response, we consider it necessary to recognize that poetry also has an objective semantic layer, the understanding of which must remain invariant with respect to individual perception. Partially or completely incorrect interpretation of this layer is an indicator of insufficient reading competence. That is why participants were asked to use text-based examples to defend their interpretations of the poem's deeper meanings.

The differences between the groups were compared using the Kruskal–Wallis test, and the differences within the groups before and after the experimental validation, using the Wilcoxon signed-rank test. The pairwise differences were evaluated using the Mann–Whitney test.

Results

Prior to the teaching intervention, the Mann–Whitney test showed no significant differences ($p > 0.05$) between the results of the experimental and control groups. The same test conducted upon the final results after intervention revealed statistically significant differences ($p < .001$). The E-group as a whole showed higher results in each of the assessed aspects of creative interaction with poetry.

The Kruskal–Wallis analysis of variance revealed that initially, 8th-graders outperformed 6th- and 7th-graders statistically significantly in most of the tasks, except for impression description (see Table 1). After intervention, their results were still higher in assignments concerning figurative language and poem interpretation.

Table 1

Results of the Kruskal–Wallis test before and after the intervention (E-group)

Indicators	Impression description	Lyric plot description	Description of the experiences of the lyric hero	Figurative language recognition and description of its role	Interpretation of the poem, substantiation of one's opinion
Before					
Grade 6 mean rank	125.39	120.16	119.34	94.66	118.28
Grade 7 mean rank	107.88	98.48	107.83	114.50	99.70
Grade 8 mean rank	123.70	140.89	130.50	149.87	141.51
$\chi 2$	4.781	19.297	6.335	31.837	17.523
df	2	2	2	2	2
p	.092	**.000**	**.042**	**.000**	**.000**
After					
Grade 6 mean rank	108.53	120.37	124.47	99.20	116.87
Grade 7 mean rank	126.40	109.35	110.67	109.94	107.02
Grade 8 mean rank	120.02	127.50	121.35	150.35	134.22
$\chi 2$	3.688	3.476	2.520	28.225	7.728
df	2	2	2	2	2
p	.158	.176	.284	**.000**	**.021**

Although 8th-graders outperformed the other students before the intervention, qualitative analysis revealed that they have serious poetry comprehension problems as well. Thus, 46.8% of their written responses contained a distortion of the poem's meaning, and only 2.1% of the 8th-graders were able to give a well-reasoned, text-based interpretation. After the intervention, the former number in these classes decreased to 14.9%, while the latter increased to 34.0%.

The Wilcoxon signed-rank test conducted upon the results of the groups before and after the intervention revealed that the E-group showed significant ($p < .001$) increases in the level of the assessed aspects of creative interaction with a poem, whereas in the C-group there were no significant changes (see Table 2).

In the beginning, only 13.1% of the E-group students expressed feelings and thoughts directly related to the text and were able to put the poem in the context of their life experience. In the end, this number rose to 51.3%.

Table 2

Results of the Wilcoxon signed-rank test

Indicators			Impression description	Lyric plot description	Description of the experiences of the lyric hero	Figurative language recognition and description of its role	Interpretation of the poem, substantiation of one's opinion
E-group	**Z**	Grade 6	−5.000*	−7.553*	−6.677*	−7.374*	−7.437*
		Grade 7	−6.824*	−7.924*	−6.553*	−7.469*	−8.008*
		Grade 8	−5.533*	−7.244*	−5.466*	−6.818*	−7.133*
C-group	**Z**	Grade 6	−.302	−.500	.000	.000	−2.77
		Grade 7	−.333	−.302	−.707	.000	.000
		Grade 8	−.707	−.333	−.378	−.816	−.577

*Note. *p < 0.001*

As illustrated in Figure 1, after the intervention the E-group participants performed much better in tasks on lyric plot description. For instance, the number of adolescents who pointed out all the key elements of the explicit and implicit content significantly increased. The highest results (42.3%) were obtained in Grade 8 (E-8); however, in general, the differences in the E-group between the results of the students in 6th, 7th, and 8th grades were insignificant.
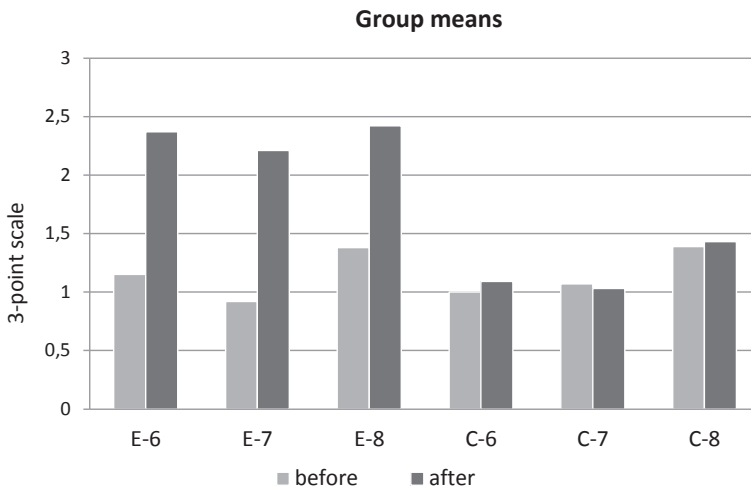
Figure 1. Lyric plot description: group dynamics

Note: E = experimental group, C = control group, 6 = 6th-graders; 7 = 7th-graders; 8 = 8th-graders.

One of the key problems was the "loss" of the lyric hero. Most of the participants tried to identify an external event line and did not trace the development of the inner state of the hero, did not discuss the psychological situation described in the poem. While prior to intervention, the descriptions of the experiences of the

hero were often reduced to a few common words, after it the number of detailed, substantiated answers increased from 15.7% to 59.3%.

Eighth-graders generally performed better in figurative language tasks. After the intervention, the number of students who identified 1–2 literary devices and explained their role in the poem increased from 23.9% to 50.7%. Of the 8th-graders, 29.6% were able to identify and explain three or more literary devices. As for the 6th- and 7th-graders, only 1.3% and 3.5%, respectively, identified three or more devices, but, like the 8th-graders, about 50% of the students coped with 1–2 literary devices.

Before the intervention, the percentage of students in the E-group who gave no interpretation of the poem or gave a completely wrong interpretation was quite high (31.4%), and nearly half of the answers contained a distortion of the poem's meaning. As the qualitative analysis of the written responses showed, the teenagers often perceived a poem not holistically but fragmentarily; losing sight of the general context, they misinterpreted the meanings of the figurative expressions. The overall number of participants who were able to reasonably interpret a poem and justify their opinion was minimal: less than 1%. After the intervention, this number increased to 31.4%. Thus, the written responses on "To I.I. Pushchin", for example, reflected how the work with the EdB chapters and detailed discussions based on psychodidactic principles helped the students to engage with the poem on a more personal level and sharpen their critical skills. One 7th-grader, for instance, wrote, *"Actually, I already knew this poem by heart, but it never occurred to me that in the second part the lyric hero is talking not about his own exile, but his friend's imprisonment. I now see that this poem is not merely about true friendship, it's also about hope and freedom. I mean not just outer freedom, but, more importantly, inner freedom, which cannot be taken away from you unless you betray yourself and what you believe in".* These insightful comments show that the student was able to look at the poem from a different angle, to respond to its broader significance.

Discussion

Among modern teenagers, there is often a hostile attitude to lyric poetry, as they fail to find meaning in it, to see any connection between it and their lives. In Russian secondary schools, poetry is usually taught in a limited and restrictive way, the typical form of studying poems being learning them and their most widespread interpretations by heart. This means that there is seldom any discussion, and the students remain emotionally and intellectually passive and view poetry reading as an exercise in futility. Therefore, researchers talk about poor progress in poetry comprehension throughout early adolescence, which can be explained by the lack of attention paid during literature lessons to lyric poetry and by the lack of effectiveness in developing creative interaction with poems. Other reasons for teenagers' low level of understanding of both fictional and factual texts may include shortcomings in the quality of textbooks and their use in the educational process (Granik & Borisenko (Eds.), 2018; Zuckerman, Kovaleva, & Kuznecova, 2011). In this situation, it becomes obvious that the traditional didactic teacher-centered and knowledge-oriented approach is not effective enough, especially when it comes to poetry, which deals primarily with exploring a person's inner world — thoughts,

feelings, and emotions. Creative interaction with a poetic text presupposes going beyond the surface information to the deep level of meaning, both cognitive and emotive.

In order to investigate the theoretical and practical aspects of developing adolescents' creative interaction with lyric poems, we applied the psychodidactic approach. In the course of our research, the principle of open individuality was singled out as the basic one and was elaborated in four interrelated sub-principles: wholeness, polylogy, multidimensionality, and value hierarchy. We implemented these principles in two educational book chapters devoted to several lyric poems by A. Pushkin and M. Lermontov.

At the beginning of the experimental validation of the principles and chapters, the students who participated in our study completed open-ended writing tasks, in which they had to describe their impression of the poem, the lyric plot, the figurative language, and the experiences of the lyric hero, and to give a justified interpretation of the poem's overall meaning. For many of the participants, these tasks seemed quite daunting, because it was the first time they had to think about a poem, to try to respond to it. Since lyric plots are typically based on an internal event and involve psychological phenomena, when the students tried to focus on gaining some sort of information from the poem, they were unable to see the dimensions of the situation (or perception, attitude, recollection, emotion, etc.) depicted in it.

During the teaching intervention, our aim was not so much to uncover the so-called objective meaning of the text, as to help the students interact with the poem and with each other at a deeper level, and to link the work of art with their own experience. The teachers who observed the experimental lessons were surprised by the teenagers' willingness to engage enthusiastically in the joint activities. Due to the students' active participation, their confusion dissipated, and it became obvious that most of them started to enjoy the process of interpreting a poem, sharing their personal views on it, working with the educational book chapters and discussing them.

The final results of the experimental group showed significant ($p < 0.001$) increases in the level of the assessed aspects of creative interaction. While before the intervention a "fractional" (fragmentary) approach to the poem prevailed, when the text seems disjointed, after the intervention there appeared a tendency to apply a holistic approach, when the reader is able to trace the development of the inner state of the hero, to navigate the text, establishing the relationships between its elements and seeing their correlation with the whole, and to choose contextually relevant meanings in words. It was clear that not all students who freely expressed themselves during oral discussions were able to fully convey their emotions and ideas in written form. Nevertheless, the final written responses showed that most of the active participants began to grasp deeper meanings embedded in the text, and their perception became more detailed and concrete as they tried to look at the poem from various perspectives.

Thus, we revealed positive dynamics in the development of teenagers' creative interaction with the lyric poems as a result of the teaching intervention. The findings suggest that building the learning process on the general principle of open individuality and the sub-principles of wholeness, polylogy, multidimensionality,

and value hierarchy, as well as working with educational books of the psychodidactic type based upon these principles, is effective in deepening teenagers' comprehension of poetry, fostering dialogical exchange, turning the reading of lyric poetry into a valuable experience for teenagers during their years of growth and self-exploration.

Limitations

The limitations of the study are related to the fact that due to the school curriculum (full schedule), we were able to conduct only a short-term intervention and therefore did not investigate how far the positive changes we found were spread, how stable they were, whether there would be a transfer effect when reading and analyzing other lyric poems. Additionally, although students from the experimental group showed statistically significant gains, overall these gains were relatively small. We assume that more time spent implementing the teaching intervention might increase the benefits. The limitations mentioned above are prerequisites for further special studies. Future research might also incorporate other age groups, e.g., high school students.

Acknowledgements

References

Andrews, R. (1991). *The problem with poetry.* Milton Keynes, UK: Open University Press.

Bakhtin, M.M. (1986). *Estetika slovesnogo tvorchestva* [Aesthetics of verbal creativity]. Moscow: Iskusstvo.

Belyayeva, N.V. (2004). *Uroki izucheniya liriki v shkole. Teoriya i praktika differentsirovannogo podkhoda k uchashchimsya* [Learning lyrics at school. Theory and practice of a differentiated approach to students]. Moscow: Verbum-M.

Benton, P. (1984). Teaching poetry: The rhetoric and the reality. *Oxford Review of Education*, *10*(3), 319–327. https://doi.org/10.1080/0305498840100310

Davydov, V.V. (1996). *Teoriya razvivayushchego obucheniya* [Theory of developmental education]. Moscow: Intor.

Dias, P., & Hayhoe, M. (1988). *Developing response to poetry.* Milton Keynes; Philadelphia: Open University Press.

Dymoke, S., Barrs, M., Lambirth, A., & Wilson, A. (Eds.) (2015). *Making poetry happen: Transforming the poetry classroom*. London: Bloomsbury.

El'konin, D.B. (1971). K probleme periodizatsii psikhicheskogo razvitiya v detskom vozraste [On the problem of periodization of mental development in children]. *Voprosy psikhologii* [Questions of psychology], *4,* 6–20.

Eva-Wood, A.L. (2004). Thinking and feeling poetry: Exploring meanings aloud. *Journal of Educational Psychology*, *96*(1), 182–191. https://doi.org/10.1037/0022-0663.96.1.182

Fel'dstein, D.I. (2004). *Psikhologiya vzrosleniya: strukturno-soderzhatel'nyye kharakteristiki protsessa razvitiya lichnosti* [Psychology of growing up: structural and substantial characteristics of the process of personality development]. Moscow: Flinta.

Fleming, M. (1992). Pupils' perceptions of the nature of poetry. *Cambridge Journal of Education*, *22*(1), 31–41. https://doi.org/10.1080/0305764920220104

Fleming, M., & Stevens, D. (2015). *English teaching in the secondary school: Linking theory and practice* (pp. 177–195). (4th ed.). Abingdon; NY: Routledge. https://doi.org/10.4324/9781315695006

Gelfman, E.G., & Kholodnaya, M.A. (2006). *Psikhodidaktika shkol'nogo uchebnika: Intellektual'noe vospitanie shkolnikov* [Psychodidactics of school textbooks: The intellectual nurture of students]. St. Petersburg: Piter.

Granik, G.G. (2009). Psikhologo-didakticheskiye problemy sozdaniya shkol'nykh uchebnikov [Psychological and didactic problems of creating school textbooks]. *Voprosy psykhologii* [Questions of psychology], *3,* 37–44.

Granik, G.G. & Borisenko, N.A. (Eds.) (2018). *Kak uchit' russkomu yazyku i literature sovremennyh shkol'nikov? Shkol'nyj uchebnik segodnya* [How can we teach modern schoolchildren Russian language and literature? The school textbook today]. Moscow, St. Petersburg: Nestor-Istoriya.

Gutkina, E.I. (2015). Lirika i chitatel'-podrostok [Lyrics and the teenage reader]. *Biblioteka v shkole* [The school library], *4,* 37–43.

Hanratty, B. (2011). Poetry and gender: A comparative evaluation of boys' and girls' responses to poetry at Key Stage 4 in Northern Ireland. *Research Papers in Education*, *26*(4), 413–426. http://dx.doi.org/10.1080/02671522.2010.483525

Harker, W.J. (1994). "Plain sense" and "poetic significance": Tenth-grade readers reading two poems. *Poetics*, *22*(3), 199–218. https://doi.org/10.1016/0304-422X(94)90005-1

Kholodnaya, M.A., & Gelfman, E.G. (2016). Development-focused educational texts as a basis for learners' intellectual development in studying mathematics (DET technology). *Psychology in Russia: State of the Art*, *9*(3), 24–37. http://dx.doi.org/10.11621/pir.2016.0302

Leontiev, D.A. (2010). Poeticheskoye tvorchestvo: ot literaturnogo i kul'turnogo konteksta k zhiznennomu [Poetic creativity: from the literary and cultural context to that of real life]. *Bibliotechnoye delo* [Librarianship], *10,* 20–25.

Mathieson, M. (1980). The problem of poetry. *Use of English, 31*(2), 36–43.

Mironova, K.V. (2019). Besedy o lirike A.S. Pushkina [Conversations about A.S. Pushkin's lyrics]. In G.G. Granik, L.A. Kontsevaya, K.V. Mironova, *A.S. Pushkin, yego druz'ya i sovremenniki: Uchebnoye posobiye po literature dlya uchashchikhsya 7–9 klassov obshcheobrazovatel'nykh organizatsiy* [A.S. Pushkin, his friends and contemporaries: A textbook on literature for students in grades 7–9] (pp. 192–264). Moscow: Mnemozina.

Mironova, K.V. (2012). Odinnadtsat' poeticheskikh shedevrov [Eleven poetic masterpieces]. In G.G. Granik & L.A. Kontsevaya (Eds.), *Ya — drugoy. M. Yu. Lermontov: Uchebnaya kniga po russkoy filologii* [I'm another. M.Yu. Lermontov: Educational book on Russian philology] (pp. 166–215). Moscow: Ileksa.

Mironova, K.V. (2018). Otsenivaniye urovnya ponimaniya podrostkami liricheskoy poezii [Evaluation of the level of adolescents' lyric poetry comprehension]. In A.L. Zhuravlev, E.A. Sergienko, N.E. Kharlamenkova (Eds.), *Psikhologicheskiye issledovaniya: Vyp. 9* [Psychological Studies: Vol. 9] (pp. 87–98). Moscow: Izd-vo "Institut psikhologii RAN".

Novlyanskaya, Z.N., & Kudina, G.N. (2014). K voprosu o kul'ture chteniya liriki [On the question of the culture of reading lyrics]. In N.L. Karpova (Ed.), *Bibliopsikhologiya. Bibliopedagogika. Biblioterapiya* [Bibliopsychology. Bibliopedagogics. Bibliotherapy] (pp. 71–75). Moscow: Russkaya shkol'naya bibliotechnaya assotsiatsiya.

Panov, V. I. (2007). *Psikhodidaktika obrazovatel'nyh sistem: Teoriya i praktika* [Psychodidactics of educational systems: Theory and practice]. St. Petersburg: Piter.

Peskin, J. (1998). Constructing meaning when reading poetry: An expert-novice study. *Cognition and Instruction*, *16*(3), 235–263. http://dx.doi.org/10.1207/s1532690xci1603_1

Peskin, J. (2010). The development of poetic literacy during the school years. *Discourse Processes*, *47*(2), 77–103. http://dx.doi.org/10.1080/01638530902959653

Rice, F.P., & Dolgin, K.G. (2005). *The adolescent: Development, relationships and culture* (11th ed.). Auckland, New Zealand: Pearson Education New Zealand.

Rosenblatt, L.M. (1994). *The reader, the text, the poem: The transactional theory of the literary work.* Carbondale, IL: Southern Illinois Press.

Rosenblatt, L.M. (1980). "What facts does this poem teach you?" *Language Arts*, *57*(4), 386–394. Retrieved from http://www.jstor.org/stable/41404974

Sigvardsson, A. (2017). Teaching poetry reading in secondary education: Findings from a systematic literature review. *Scandinavian Journal of Educational Research*, *61*(5), 584–599. https://doi.org/10.1080/00313831.2016.1172503

Soboleva, O.V. (2019). Psikhodidakticheskiye osnovy obucheniya ponimaniyu teksta: ot teorii k praktike postroyeniya uchebnoy knigi [Psychodidactic bases of teaching text comprehension: from theory to practice of constructing an educational book]. In N.A. Borisenko (Ed.), *Psikhodidaktika sovremennogo uchebnika: preemstvennost' tradicij i vektory razvitiya* [Psychodidactics of the modern textbook: continuity of traditions and development vectors] (pp. 44–49). Moscow: Mnemozina.

Stones, E. (1978). Psychopedagogy: Theory and practice in teaching. *British Educational Research Journal*, *4*(2), 1–19. https://doi.org/10.1080/0141192780040201

Tolstykh, N.N., & Prikhozhan, A.M. (2016). *Psikhologiya podrostkovogo vozrasta* [Psychology of adolescence]. Moscow: Yurayt.

Vala, J., Sladová, J., Řeřichová, V., & Fic, I. (2014). The changes in the attitudes towards poetry in the class (14–15 years old) thanks to experimental teaching methods. *Procedia — Social and Behavioral Sciences*, *116,* 3811-3815. Retrieved from https://www.sciencedirect.com/science/article/pii/S1877042814008635

Vygotsky, L.S. (1986). *Psikhologiya iskusstva* [The psychology of art]. Moscow: Iskusstvo.

Wade, B., & Sidaway, S. (1990). Poetry in the curriculum: A crisis of confidence. *Educational Studies*, *16*(1), 75–83. https://doi.org/10.1080/0305569900160106

Xerri, D. (2016). 'Poems look like a mathematical equation': Assessment in poetry education. *International Journal of English Studies*, *16*(1), 1–17. https://doi.org/10.6018/ijes/2016/1/235261

Zuckerman, G.A., Kovaleva, G.S., & Kuznecova, M.I. (2011). Pobeda v PIRLS i porazhenie v PISA: sud'ba chitatel'skoy gramotnosti 10–15-letnikh shkoľnikov [Victory in PIRLS and defeat in PISA: the future of reading literacy of 10–15-year-olds]. *Voprosy obrazovaniya* [Educational studies], *2,* 123–150. https://doi.org/10.17323/1814-9545-2011-2-123-150

Reading Performance in Adults with Intellectual and Developmental Disability (IDD) When They Read Different Kinds of Texts

Jose A. León[a*], Alvaro León-López[b]

[a]*Universidad Autónoma de Madrid, Madrid, Spain*
[b]*Universidad de Alcalá, Alcalá de Henares, Spain*

*Corresponding author. E-mail: joseantonio.leon@uam.es

Background. Over the last several decades, the world has been made more accessible for people with disabilities. However, many of these achievements have primarily focused on physical limitations, and it is also important that the environment be made easy to understand for those people who may be at risk of social exclusion. Reading competence is one of the fundamental functional skills people need to access communication and culture. The facilitation of this adaptation is called cognitive accessibility. Cognitive accessibility encompasses everything related to how people understand the meaning of their environment, and especially written documents.

Objective. The main objective of this study was to establish a scale of evaluation of reading competence for adults with intellectual and developmental disability (IDD) compared to university students (as a control group). Thus, we sought to establish different levels of reading competence relative to the difficulty of various texts (A, B, C), in accordance with the criteria established in the Common European Framework of Reference for Languages (CEFR).

Design. 450 adults with IDD and 200 undergraduate university students took part in this study. They read and were scored on three texts of different lexical and semantic complexity.

Results. The results in three different studies showed that adults with intellectual and developmental disability (AIDD) improve their performance in reading comprehension when additional time and support are made available.

Conclusion. If a greater amount of time is made available, the performance of a significant part of the AIDD population improves considerably, in some cases approaching the level of performance of university students. These results raise new lines of research on how to give people with IDD access to more comprehensible and accessible reading material.

Keywords: Intellectual and Developmental Disability (IDD); Adults with Intellectual and Developmental Disability (AIDD); text comprehension; reading performance; reading comprehension; text complexity

Introduction

Intellectual and Developmental Disability (IDD) is defined as a significant impairment in general cognitive functioning, social skills, and adaptive behavior (Schalock, Borthwick-Duffy, & Bradley, 2009; Shapiro, & Batshaw, 2013). The Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition (DSM-5) defines it as deficits in intellectual functions such as reasoning, problem solving, planning, abstract thinking, judgment, academic learning, and learning from experience. Deficits in such adaptive functions affect communication, social participation, and independent living activities (Patel, Greydanus, & Merrick, 2016). The prevalence of intellectual disability is estimated at 1% in the general population. While most of these individuals have mild intellectual disability, six per 1,000 individuals have severe intellectual disability.

In Spain, an assessment of intellectual and developmental disability is carried out in each Autonomous Community; a few parameters are applied to measure the type of disability, the limitations it imposes on daily life or the person's level of adaptability, and other social factors that limit these individuals' participation in society. The fulfillment of the rights of people with intellectual and developmental disabilities is a major national objective, as can be seen in the records of the Institute for the Elderly and Social Services (IMSERSO). That database (2017) registered 268,633 people with IDD at the end of 2015. Their levels of intellectual disability were classified into three categories: Mild (from 33% to 50% grade of IDD); Moderate (from 51% to 70% grade of IDD); and Severe (more than 71% grade of IDD).

For several decades, progress in creating a more accessible world for people with disabilities has been heralded, and many achievements have indeed been made. However, many of these achievements have primarily focused on physical or space limitations (such as architectural barriers, the adequacy of public transportation, pedestrian access to public roads or ramp location). But it is also important to make the total environment easy for all people to understand, and especially those people who may be at risk of exclusion (social, cultural, or informative). Within these risk groups are adults with IDD.

The ability to understanding information is one of the fundamental functional skills people need in order to access communication and culture. The facilitation of this adaptation to the environment is carried out through what is called *cognitive accessibility*. Cognitive accessibility encompasses everything related to how people understand the meaning of their environments, objects, information, news, or any written document. In general, it is said that something is cognitively accessible when it is comprehensible or easy to understand. Enhancing cognitive accessibility has the primary objectives of allowing people to understand the environment in which they live; to understand everything that they relate to; and to determine whether the people, objects, or information with which they are involved can be more efficient with respect to their well-being and quality of life (Belinchón, Casas, Díez, & Tamarit, 2014). This capability allows people to be better informed, improves their social participation, and facilitates their social and cultural inclusion. All this positively affects people's emotional, social, and participatory well-being.

Reading comprehension is one of the fundamental pillars within this general framework of cognitive accessibility. One application is called "Easy Reading" (For a complete review, see García Muñoz, 2012). Easy Reading is a tool that allows texts

to be adapted to a simpler written form, with the aim of facilitating understanding by people who do not have a habit of reading. These adaptations are made in books, administrative and legal documents, and news and web pages, as well as in many other types of documents. Easy Reading follows the criteria established in Inclusion Europe, which set European guidelines for making information easy to read (see http://www.plenainclusion.org/sites/default/files/informaciontodos.pdf).

But this line of work is very limited, since more than 80% of the writing published in any medium is written at high competence levels (such as B2 and C1), and adaptation to more accessible levels would be very expensive and practically impossible. Furthermore, although there is a general assumption that people with IDD would not be able to understand texts that feature any lexical or syntactic difficulty, there are no empirical studies which have researched the reading competence of this group. Therefore, we undertook three research projects in Spain in order to study the improvement of reading comprehension and competence in adults with IDD by analyzing their cognitive accessibility within a particularly useful and necessary context. These were done in the Madrid Community (León, Jastrzebska, & Martínez-Huertas, 2018), the Extremadura Community, and Andalusia (León, Jastrzebska, Martínez-Huertas & León-López, 2019).

One way to generate texts with different levels of difficulty is to adapt them according to the criteria established in the Common European Framework of Reference for Languages (CEFR). The CEFR measures language proficiency on a six-level scale (A1, A2, B1, B2, C1, and C2). These can be regrouped into three broad levels: Basic User (Easy), Independent User (Intermediate), and Proficient User (complex texts), and each can be further subdivided according to the local context. The CEFR has developed a description of the process of mastering an unknown language by type of competence and sub-competence, using descriptors for each; we shall not go into further detail here. These descriptors were created without reference to any specific language, which guarantees their relevance and across-the-board applicability. The descriptors specify progressive mastery of each skill in Spanish in the Curriculum Plan of the Cervantes Institute (https://cvc.cervantes.es/ensenanza/biblioteca_ele/marco/cvc_mer.pdf; https://www.coe.int/en/web/language-policy/home).

A large number of authors have investigated and agreed on the relationship between texts with different levels of difficulty, and the two different levels of mental representation that directly affect comprehension and competence in reading: the *text-based model* and *the mental or situational model* (*e.g.,* Gernsbacher, Varner, & Faust, 1990; Graesser, León, & Otero, 2002; Kintsch, 1988, 1998; León, 2004a; León & Escudero, 2015; van den Broek, Rapp, & Kendeou, 2005; van Dijk & Kintsch, 1983). The text-based model concerns all kinds of tasks that require understanding, but is always related to the presentation of explicit information from the text (León et al., 2012). A standard task on the text-based level is searching or locating specific information in the text, or searching for relationships or connections between different parts of the text. The mental model, on the other hand, is considered to be a more complex representational level, since it requires a considerable contribution from the reader's knowledge and the drawing of inferences. (León & Escudero, 2017). The model of reading comprehension that is assumed here takes into account that there are differences between the types of comprehension and types of text (León, 1996; León, 2004b; León, Escudero, & Olmos, 2012).

Objective

The main objective of this study was to establish a scale of evaluation of reading competence for adults with IDD in comparison with university students (as a control group), using as references three Autonomous Communities: Madrid, Castilla-La Mancha, Andalusia, and Extremadura. We sought to establish different levels of reading competence related to the difficulty of texts (A, B, C) that exemplify the criteria established in the Curriculum Plan of the Cervantes Institute (PCIC) and the Common European Framework of Reference for Languages (CEFR). In this way, relationships are established between the characteristics of the text, or source of information, with the cognitive skills, reading strategies, and contexts in which they occur, in the different groups studied. More specifically, the objectives set out in this study consisted of answering the following three groups of questions:

1. How do people with intellectual or developmental disabilities read and understand texts? How is their performance affected by the degree of complexity of the text?
2. How similar are the reading competencies of adults with intellectual disabilities to the development of university adults? And how are they different?
3. Are there differences between people with intellectual or developmental disabilities depending on their degree of disability? In other words, does the degree of intellectual disability determine the level of reading competence?

Method

Participants

A total of 450 adults with IDD (mean age of 37 years, a range of 20–62 years, and a medium disability degree = 64, SD = 12), and 205 undergraduate university students (mean age of 22 years) took part in this research. Approximately fifty percent of the participants were female. The reading performance of the university students was used as a reference (control) to compare with the reading performance of the adults with IDD.

Materials

Participants read three texts on different topics and with different levels of lexical and linguistic complexity (A, B, and C). The International Federation of Library Associations and Institutions (IFLA) proposes the use of three levels of complexity which are not linked to the levels established in texts for language learning:

- Level I: The easiest, with many illustrations and little text, which text has simple syntactical and linguistic structures.
- Level II: With vocabulary and expressions from everyday life, easy-to-follow actions, and illustrations.
- Level III: The most complex, with longer texts, some unusual words, space-time breaks, and very few illustrations.

Following the conceptual framework above, we tried to unify the linguistic criteria (of the base text) with the semantic aspects (of content, based on the understanding). Complementarily, these texts were compared with a text from the standardized reading comprehension assessment test ECOMPLEC.Sec (León et al., 2012), in order to compare the reading comprehension competence of the adults with IDD with the university student group.

Procedure

The same procedure was applied at all the stages of these research projects. Specifically, these tasks were applied collectively to different samples of adults with IDD. First, a general explanation was given to every group of participants. We started the study once the people responsible for helping the participants were sure that the participants understood the instructions. Then, the participants read different combinations of the texts. They read the texts individually and were asked to answer different multiple-choice questions. All the participants had unlimited time to answer all the questions.

Results

The following different aspects of the results were analyzed: 1) External validity and the results using the standardized ECOMPLEC test; 2) the reading performance by the participants with IDD and the university students, in texts with different levels of difficulty; and 3) the reading performance relative to different levels of IDD (mild, moderate, or severe) in texts with different levels of difficulty (A, B, and C).

1. External validity and results using the standardized ECOMPLEC test

Before analyzing the texts' complexity, a standardized test of reading comprehension (ECOMPLEC.Sec) with a high complexity level (C1–C2) was given in order to compare the reading performance of the two groups (adults with IDD and university students) in a pilot study. A total of 63 of the university students obtained an average of .86 (SD = .11); and 68 adults with IDD scored an average of .39 (SD = .13). Thus, the difference in means between both groups was very large and significant (t = −22.264, gl = 126.056, p < .01). However, as shown in *Figure 1*, there was a notable overlap in the performance of both groups; that is, there
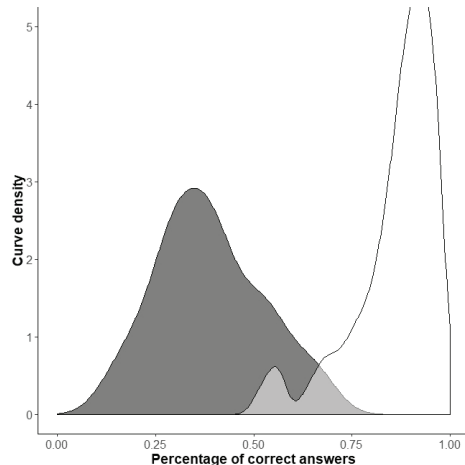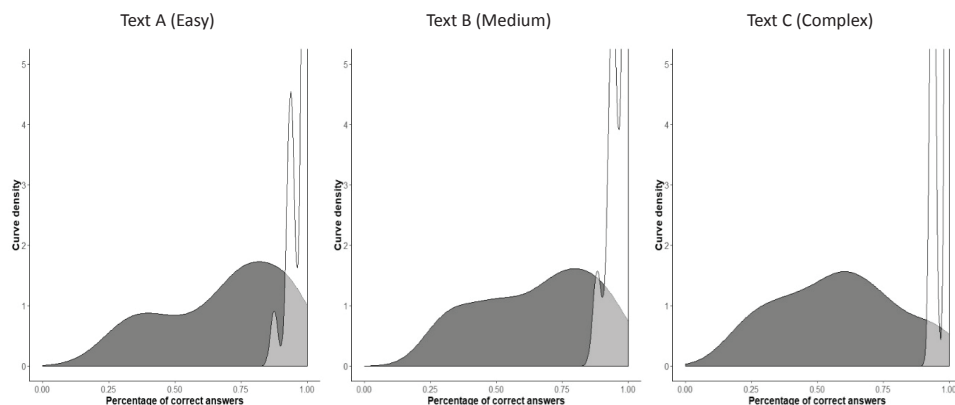

Figure 1. Density curves in the ECOMPLEC Standard test comparing AIDD (black) and university groups (white).

Note. Each of the curves represents the number of people who have obtained a certain percentage of hits (range 0–1) (adapted from León et al., 2018)

were people with intellectual disabilities who even surpassed some of the university students (specifically, the range of performance of people with intellectual or developmental disabilities was .12–.70, compared to the range of university students, which was .52–1.00).

2. Reading performance between adults with IDD and university group in texts with levels different difficulty (A, B, and C)

It is assumed as a criterion for this analysis that a participant reaches a level of competence when his or her performance exceeds 60% on the test, within each level of difficulty of the text (A, B, and C). To calculate the data, a descriptive analysis of the levels of competence of the sample in this study was carried out. The results are shown in *Figure 2.*

Figure 2. Density curves in the tests comparing reading performance between adults with IDD Group (in black) and the university student group (white) in texts with different difficulty.

Note. Each of the curves represents the number of people who have obtained a certain percentage of hits (range 0–1) (adapted from León et al., 2018).

Although all the differences were statistically significant, when the performance of both groups was compared (p<.01), there was a huge spread in the performance of the adults with IDD. As can be seen in *Figure 2*, there was an inverse relationship between the difficulty of the text (A, B and C) and reading performance by the participants. In this way we can show that the easier the text was, the more participants reached a level of reading competence suitable for that level. And *vice versa*: the more difficult the text was, the fewer people reached a level of reading competence suitable for that more complex level. Thus, on the easiest text (text A), which is similar to the texts of Easy Reading, 70% of the adults with IDD obtained a sufficient level of reading competence. On the intermediate level (B), the percentage of people with IDD who passed the test was 53%. However, only 20% of the people with IDD who participated in this study managed to reach a C level of reading competence.

3. Analyzing the influence of the degree of disability on reading performance

In this section we analyzed the influence of the degree of disability (mild, moderate, and severe) on the performance at the different levels of difficulty of the text (A, B, and C) through a univariate ANOVA (see *Table 1*).

Table 1

Reading Performance according to the degree of IDD of the participants (Mild, Moderate and Severe) in the different difficulty levels of the texts (A, B, and C)

Text Difficulty	Effect	Differences relative to the degree of IDD		
		Mild — Moderate	Mild — Severe	Moderate — Severe
A	$F(2,348) = 7.83$, $p < .01$, $\eta^2 = .04$	$p < .01$	$p < .01$	NS
B	$F(2,340) = 5.20$, $p < .01$, $\eta^2 = .03$	$p < .01$	$p < .01$	NS
C	$F(2,318) = 8.57$, $p < .01$, $\eta^2 = .05$	$p < .01$	$p < .05$	$p < .05$

Note. The differences between groups have been calculated from pairwise comparisons of the effects of univariate ANOVA. These multiple comparisons have been corrected with Bonferroni.

The effect of the degree of disability was statistically significant at all levels of difficulty. However, the chief differences that were found occurred between the group with mild disability, versus those with moderate and severe disabilities (while these last two groups do not show differences between them). It is interesting to note that the only significant differences between the groups with moderate and severe disability were found at level of difficulty C (again, see *Table 1*).

Discussion

Our first finding is that there was a great variability within the AIDD group in performance on the reading competence tests, regardless of the level of text complexity. As far as reading competence is concerned, it is also important to note that the same material can be very easy or very difficult for two subjects diagnosed with a similar degree of intellectual disability. With regard to the comparison in reading comprehension and competence between the two groups (AIDD and university students), a good level of reading competence was detected in general, although, as expected, there were great differences between the groups.

Perhaps the most surprising fact is that there was a clear overlap between the groups. There were participants from the AIDD group whose performance equaled or even surpassed that of the university adults in the tests (even in very difficult tasks, such as the text of the ECOMPLEC standardized test).

There are several factors that can explain the considerable overlap between both groups. A determining factor for interpreting the results obtained by the AIDD group against the group of university students was time. The university students took 36 minutes on average to complete all the tests, while the AIDD took 109

minutes, almost three times longer. Thus, it can be said that time is a good ally in facilitating understanding by AIDD. When no time limitation is imposed — that is, when they have enough time to understand the materials — high performance can be achieved on the tests. Thus, AIDD can achieve very high levels of performance when they have the necessary resources (in this case, more time and support), thus compensating for some of their cognitive limitations. AIDD have the potential to improve if they have adequate support or opportunities.

Conclusion

One important conclusion of this study is that adults with IDD are sensitive to the difficulty of the texts and that they have shown a level of reading skills much higher than expected. In fact, their level of reading proficiency is not limited to the comprehension of very simple texts (Level A) as it was believed, but an important proportion of the participants were able to understand texts with a level of medium or high complexity (B or C). This result allows us to consider that their reading skills can be improved both by adjusting the levels of the texts, making them more attractive, and by improving AIDD's reading strategies through establishing specific reading workshops for them.

In this sense, the Easy Reading program is considered a necessary but not sufficient tool for making the world more accessible for AIDD. From the perspective of the current approaches to reading, Easy Reading follows a bottom-up procedure that involves the adaptation of materials and their reading based on the aspects most related to lexical and semantic simplification. That is to say, the contents and the syntactic and grammatical structures are reduced; the more technical words are replaced by more common ones; and parts of the information are eliminated because they are considered too complex, etc., in order to make them easier and more accessible.

However, many of the strategies proposed to improve the understanding of adults with IDD have been questioned. For example, different authors have shown that the positive effects of some Easy Reading rules are not clear (*e.g.,* Chinn & Homeyard, 2016; Sutherland & Isherwood, 2016), and some studies show that the combination of texts or images which have been edited according to Easy Reading rules, do not make them more understandable than the original materials (Hurtado, Jones, & Burniston, 2014). Although these proposals are of great social importance, a necessary step for developing useful tools to improve the understanding of adults with IDD is the investigation of these psychological processes from an operational theoretical framework of reading comprehension.

Limitations

Our important finding of variability in the reading performance of the sample of adults with IDD has some limitations. There were people who obtained a hit ratio of 0, while other people in the same group got a hit ratio of 1 (that is, there were people who didn't answer any questions and others who answered all the questions). This result should lead us to establish a framework that takes into account

the enormous variability of performance in the different tasks shown by adults with IDD because 1) the same material can be very easy or very difficult for the same sample group; and 2) future research is likely to focus on more homogeneous groups of people with intellectual or developmental disabilities, to maximize the results of the study of what support needs to be provided. This last aspect does not refer to homogenizing a future sample, but to collecting more information about the participants so as to be able to make more groupings. Thus researchers will be able to check whether there are some variables that can provide more information than others in order to understand how reading comprehension works, and what aspects can be improved (*e.g.*, These variables might include whether people have previously worked on easy reading; their family's reading habits; whether or not they take medication; and whether they have been involved in inclusive contexts or not, etc.). Such information can be relevant for grouping people.

Practical implications

Independent of all these variables, all the AIDD who participated in this study have a margin for improvement in their reading performance and in the development of their reading strategies. AIDD with high degrees of disability, or with very basic skills, are able to improve their reading performance when they have the time they need or are motivated by the task. A greater degree of motivation can be developed through the improved design of texts, by the inclusion of images and graphics that complement written information, and the use of humor, emotion, and sarcasm (León, 1999; León & Carretero, 1992). This type of design could increase both the interest in reading and the development of strategies related to improving reading competence.

Acknowledgements

References

Belinchón, M., Casas, S., Díez, C., & Tamarit, J. (2014). *Accesibilidad cognitiva en los centros educativos*. Guías prácticas de orientaciones para la inclusión educativa. Ministerio de Educación, Cultura y Deporte.

Chinn, D., & Homeyard, C. (2016). Easy read and accessible information for people with intellectual disabilities: Is it worth it? A meta-narrative literature review. *Health Expectations, 20*(6), 1189–1200. https://doi.org/10.1111/hex.12520

García Muñoz, O. (2012). *Lectura fácil: Métodos de redacción y evaluación*. Madrid: Real Patronato sobre Discapacidad.

Gernsbacher, M.A., Varner, K.R., & Faust, M.E. (1990). Investigating differences in general comprehension skill. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 16*(3), 430–445. https://doi.org/10.1037//0278-7393.16.3.430

Graesser, A.C., León, J.A., & Otero, J.C. (2002). Introduction to the psychology of science text comprehension. In J.C. Otero, J.A. León, & A.C. Graesser (Eds.), *The psychology of science text comprehension* (pp. 1–15). Mahwah, NJ: Lawrence Erlbaum Associates.

Hurtado, B., Jones, L., & Burniston, F. (2014). Is Easy Read information really easier to read? *Journal of Intellectual Disability Research*, *58*(9), 822-829. https://doi.org/10.1111/jir.12097

IMSERSO (2015). Base Estatal de datos de personas con discapacidad. http://www.imserso.es/imserso_01/documentacion/estadisticas/bd_estatal_pcd/index.htm

Kintsch, W. (1988). The use of knowledge in discourse processing: A construction-integration model. *Psychological Review, 95*, 163–182. https://doi.org/10.1037/0033-295X.95.2.163

Kintsch, W. (1998). *Comprehension: A paradigm for cognition*. Cambridge University press.

León, J.A. (1996). *Prensa y Educación. Un enfoque cognitivo*. Buenos Aires: Aique.

León, J.A. (1999). Mejorando la comprensión y el aprendizaje del discurso escrito: estrategias del lector o estilos de escritura. In J.I. Pozo & C. Monereo (Coords.), *El aprendizaje estratégico* (pp. 153-170). Madrid: Santillana.

León, J.A. (2004a). ¿Por qué las personas no comprenden lo que leen? *Psicología Educativa, 10*(2), 101–116.

León, J.A. (2004b). *Un nuevo enfoque en la competencia lectora basado en diferentes tipos de comprensión*. Seminario de primavera 2004, Fundación Santillana, 39-50.

León, J.A. & Carretero, M. (1992). Signals effects on the recall and understanding of expository texts in expert and novice readers. In A. Oliveira (Ed*.), Hypermedia Courseware: Structures of Comunication and Intelligent Help* (pp. 97–111). New York: Springer-Verlag. https://doi.org/10.1007/978-3-642-77702-8_12

León, J.A. & Escudero, I. (2015). Understanding Causality in Science Discourse for Middle and High School Students. Summary task as a Strategy for Improving Comprehension. In K.L. Santi and D. Reed (Eds), *Improving Comprehension for Middle and High School Students* (pp. 75–98). Springer International Publishing Switzerland. https://doi.org/10.1007/978-3-319-14735-2_4

León, J.A. & Escudero, I. (2017). Causal inferences in reading comprehension: State of the art. En J.A. León & I. Escudero (Eds.), *Reading comprehension in educational settings. Series of Studies in Written Language and Literacy* (pp. 63–99). Amsterdam: John Benjamins Publishing Company. https://doi.org/10.1075/swll.16.03leo

León, J.A., Escudero, I., & Olmos, R. (2012). *ECOMPLEC. Evaluación de la comprensión lectora*. Madrid: TEA Ediciones.

León, J.A., Martínez-Huertas, J.A, Jastrzebska, O., & León-López, A. (2019). Informe nacional del proyecto sobre la competencia lectora de personas adultas con Discapacidad Intelectual y del Desarrollo (DID). Plena inclusión. https://doi.org/10.5093/clysa2018a17

León, Jastrzebska, & Martínez-Huertas (2018). Informe del Proyecto "Escalas de competencia lectora en la Comunidad de Madrid" ¿Cómo comprendemos lo que leemos? Retrieved from https://www.plenainclusion.org/sites/default/files/plena_inclusion_-_informe_investigacion_escalas_de_comprension.pdf

León, J.A., Martínez-Huertas, J.A., & Jastrzebska, O. (2018). Un estudio sobre la competencia lectora en adultos con discapacidad intelectual y del desarrollo ante textos con contenidos de clínica y salud. *Clínica y Salud*, 29, 115–123. https://doi.org/10.5093/clysa2018a17

Patel, D.R., Greydanus, D.E., Merrick, J., et al. (2016). Introduction to intellectual and developmental disabilities. In I.L. Rubin, J. Merrick, D.E. Greydanus, et al. (Eds.). *Health care for people with intellectual and developmental disabilities across the lifespan* (pp. 5–14). Dordrecht: Springer. https://doi.org/10.1007/978-3-319-18096-0_1

Schalock, R.L., Borthwick-Duffy, S.A., Bradley, V., Buntix, W.H.E., Coulter, M.D., Craig, E.M., & Yeager, M.H. (2009). *Intellectual disability. Definition, Classification, and Systems of Supports. 11th Edition*. Washington, D.C.: American Association on Intellectual and Developmental Disabilities.

Shapiro, B.K, & Batshaw, M.L. (2013). Developmental delay and intellectual disability. In M.L Batshaw, L. Pellegrino, N.J. Roizen (Eds.). *Children with Disabilities*, 7th edition, (pp. 291–306). Baltimore: Paul Brookes.

Sutherland, R.J., & Isherwood, T. (2016). The Evidence for Easy-Read for People With Intellectual Disabilities: A Systematic Literature Review. *Journal of Policy and Practice in Intellectual Disabilities, 13*(4), 297–310. https://doi.org/10.1111/jppi.12201

van den Broek, P., Rapp, D.N., & Kendeou, P. (2005). Integrating memory-based and constructionist processes in accounts of reading comprehension. *Discourse processes*, 39(2–3), 299–316. https://doi.org/10.1080/0163853X.2005.9651685

van Dijk, T.A. & Kintsch, W. (1983). *Strategies of discourse comprehension*. New York: Academic Press.

Collaborative Game Design with Children with Hemophilia as a Tool for Influencing Opinions about Physical Activity at School

Jérôme Dinet[a*], Capucine Bauchet[a,b], Lara Hoareau[a]

[a]*University of Lorraine, Nancy, France*
[b]*Rectorat de l'Académie de Nancy-Metz, Nancy, France*

*Corresponding author. E-mail: jerome.dinet@univ-lorraine.fr

Background. More than 295,000 people have been identified with bleeding disorders worldwide, the majority being hemophiliacs (184,560; data from the World Federation of Hemophilia, 2017). Hemophilia poses a paradox: Physical activity is recommended for children with hemophilia for the sake of their health and to promote inclusion, but teachers are reluctant to involve them in sports at school. School psychologists play a key role in helping patients and their families adapt and learn to cope with their new reality, and they provide psychosocial support by helping patients and their families develop strategies to cope with physical, mental, emotional, and social challenges related to hemophilia.

Objective. The objective of this study is to include children with hemophilia, and their parents and teachers, in a participatory process to design an innovative digital tool for modifying mental representations of parents and teachers about the importance of physical activity and sports at school for hemophiliacs.

Design. The present study is based on a pre-/post-test design where the mental representation about hemophilia of all individuals concerned (16 children with hemophilia: mean age = 7.8 years, SD = 1.9; their parents; and their teachers) is collected twice: at the beginning (pre-test) and at the end (post-test) of the process of collaborative game design.

Results. Even though fathers, mothers, and teachers perceive some sports as more risky than others (*e.g.*, rugby, soccer, cycling), they modified their opinions positively about the necessity of physical activity and sports at school for children with hemophilia. The results showed that the collaborative design of this prototype of an innovative educational tool positively influenced the opinions of fathers, mothers, and teachers about the role of physical activity and sports at school, for their children with hemophilia.

Conclusion. Although the choice of physical activity or sport must be individual and must be discussed with the psychologist, parents, teachers, and children, this hemophilia "team" must discuss the risks and benefits of different sports, taking account of the physical and psychological conditions, because for all these children, physical activity and exercise have many positive benefits for health and can help self-esteem, learning, and inclusion in schools.

Introduction

Hemophilia poses a paradox: Physical activity is recommended for children, but teachers are reluctant to involve children with hemophilia in sports at school. Because hemophilia (hemophilia A or B) can reduce blood clotting and cause excessive bleeding, and because many people with hemophilia also have joint problems related to chronic bleeding, teachers are afraid of involving children with hemophilia in physical activities and sports. But physical activity can help improve movement for these individuals (Dinet, 2015; Fromme et al., 2007; Gomis et al., 2009), build muscle strength, and maintain physical fitness (Von Mackensen, 2007), especially for young children (Van der Net, 2006). Not all sports are suitable for pupils living with hemophilia, such as those involving collision or physical contact (Heijnen, Mauser-Bunschoten, & Roosendaal, 2000; Manco-Johnson, 2012), but athletic participation with appropriate supervision and precautions should be encouraged in children with hemophilia. This can act as a preventative measure, potentially offering health benefits in an increasingly overweight pediatric population (Ross, Goldenberg, Hund, & Manco-Johnson, 2009). Furthermore, early socialization supported by social physical activity is important for children with chronic illnesses, who may encounter barriers to socialization later on (*e.g.*, missed school, feeling different). Early social interactions help them develop self-confidence and a sense of belonging, and learn how to interact with others.

Hemophilia at School

If teachers in primary schools (and sometimes in secondary schools) are not always comfortable educating pupils with bleeding disorders or allowing them to participate in sports, their reluctance may be related to a lack of knowledge about hemophilia. Caution and injury prevention are important for people with hemophilia; however, it is important to distinguish between injury prevention and overprotection.

One of the main problems is that these children have difficulties describing their conditions, the activities they can or cannot practice, and the cause of their concerns. Physical or functional limitations can make young children with hemophilia feel shy and embarrassed or lead them to be teased by others. It should not be not necessary for children with hemophilia or their teachers to make a special point of telling the class about the disease every year, but it is important for children with hemophilia to be able to explain their bruises or health factors that may cause them to miss school occasionally. Therefore psychosocial support is an important part of comprehensive care for people with hemophilia. Beyond the medical condition, these individuals commonly face a number of psychosocial challenges.

While improving communication about hemophilia within families is important (Gregory et al., 2007), little attention has been paid to communication among young patients, families, and teachers. Yet several studies with school-aged children have identified a significant association between the number of bleeding episodes experienced by children with hemophilia and their academic achievement, in a cohort of school-aged children (Colegrove & Huntzinger, 1994; Shapiro et al., 2001; Usner et al., 1998). One of the main reasons is that absenteeism is a significant factor in the academic and social situation of children with hemophilia. In addition data support the assertion that therapeutic care programs in this population must

be evaluated, not only in terms of the financial cost, to achieve adequate musculo-skeletal outcomes.

The psychological impact of pediatric chronic illness on peer relations and social adjustment in nine school-aged boys with hemophilia was examined by Williams & Chapman (2009) using qualitative interview methods. Three main themes emerged from the interviews: awareness of difference, efforts to conceal difference, and efforts to connect with peers and friends. The findings suggest that hemophilia may be a socially stigmatizing condition for many boys, because it limits gender-typical interactions with same-sex peers.

Socialization is important for many children with chronic illnesses, who may encounter barriers to socialization (*e.g.*, missing school, feeling different). Social interactions help them develop self-confidence and a sense of belonging, and learn how to interact with others. Parents and teachers should be encouraged to take advantage of early opportunities for socialization, such as playing with peers and participating in community events for children, and sports and physical activities at school. Physical exercise and sports constitute a basic premise in the treatment of hemophilia. A child with hemophilia would benefit from exercise and sports, both because good muscle tone can decrease the frequency of bleeds, joint problems, and loss of bone mineral density, and because it can contribute to improving their quality of life. In other words, physical activity should be encouraged, with attention paid to muscle strengthening, coordination, general fitness, physical functioning, healthy body weight, and self-esteem. The school staff and peers should be informed that a child has hemophilia, preferably by the parents, and education of school personnel regarding suitable activities for the child is recommended.

From the Design to the Co-design of Serious Games for Patients

Recent evolution in game design research from a user-centered approach to a collaborative designing is changing the roles of the designer, the researcher, and the end-user (Sanders & Stappers, 2008), especially when end-users are patients (Sanders, 2006).

Over the past six decades, designers have been moving closer to the future users of what they design. The developments are well consolidated in industrial practice and education as the adoption of user-centered designs from an "expert perspective" in which trained researchers observe and/or interview largely passive users, whose contribution is to perform tasks as instructed and/or to give their opinions about product concepts that were generated by others. The user-centered design approach ("user as subject") has been primarily a US-driven phenomenon. Increasingly since the 1970s, people have been given more influence and room for initiative in roles where they provide expertise and participate in informing, imagining, and conceptualizing activities in the early design phases. The participatory approach ("user as partner") has been led by Northern Europeans.

Healthcare professionals often think they have expert knowledge that will improve care and create value for patients (Bates & Roberts, 2006; Gustavsson & Andersson, 2017). Nowadays, patients are becoming important resources in healthcare improvement by contributing with their personal experiences. The first examples of collaborative treatment with patients in healthcare came from a head and neck cancer clinic (Bate & Robert, 2006, 2007; Pickles, Hide, & Maher,

2008). The method was subsequently used elsewhere, such as in emergency health services (Iedema et al., 2010), breast and lung cancer services (Boyd et al., 2012; Tsianakas et al., 2012), neonatal care (Gustavsson, 2014), outpatient services for the elderly (Bowen, Dearden, Wolstenholme, & Cobb, 2011), and mental health (Larkin, Boden, & Newton, 2015). The results of such collaborative design projects included fast access to reliable health advice, effective treatment delivered by trusted professionals, involvement in decisions, respect for preferences, clear and comprehensible information and support for self-care, attention to physical and environmental needs, and assurance that healthcare professionals draw upon the experiences of patients and their families in order to truly reflect patient needs and attitudes (Maher & Baxter, 2009).

While collaborative treatment design has emerged as a useful concept where stakeholders and end-users have a greater stake in designing the end product, few accounts exist of the use of the concept in game design for children with chronic diseases, as Chomutare, Johansen, Hartvigsen, and Arsand (2016) have pointed out. Several papers have, however, described the different steps in collaborative game design for children with type 1 diabetes (Beltrand et al., 2017; Chomutare, Johansen, Hartvigsen, & Arsand, 2016; Godot et al., 2016; Jurdi et al., 2018). In those instances a game does exist for hemophiliacs (*e.g.*, Hemoquest, conceived by Matsunaga et al., 2014), it is intended for use in hospitals by staff who supervise their patients and its role is mainly to give information to children about their illness, the adults involved being the medical staff (i.e., experts).

Main Goals

The impact of digital tools, such as serious games, is generally assessed by analyzing their use, usability, and acceptability. The originality of our research is to concentrate on the impact of the process of collaborative design on opinions of relevant stakeholders, and not on the impact of the use itself.

The study presented here describes the development of an educational game that is aimed at children with hemophilia. The two main objectives of this game and the process of collaborative design are:

- to include children with hemophilia, their parents, and their teachers in a participatory collaborative design process for an innovative digital tool about hemophilia;
- to influence mental representations by parents and teachers about the importance of physical activity and sports at school for hemophiliacs.

Method

This present study is based on a pre-/post-test design, in the sense that mental representations of hemophilia for all individuals concerned (children, parents, and teachers) are collected twice: at the beginning (pre-test) and at the end (post-test) of the collaborative game design process. These two sessions (pre- and post-test) were four months apart (September 2018, January 2019). Between these two sessions, all the participants were asked to enroll in several focus groups for the collaborative design of a game dedicated to hemophilia at school.

Participants

Sixteen French families with children with hemophilia (A and B; age range from 6 to 10 years; mean age = 7.8 years, $SD = 1.9$) were recruited to participate. The 16 teachers of these 16 children also participated in this study as volunteers.

Among the children with hemophilia, 12 children had mild hemophilia — factor VIII or IX level[1] (= 6–50%, moderate hemophilia — factor VIII or IX level) and four children had severe hemophilia — factor VIII or IX level (< 1%). All the participants were distributed among four focus groups, with four participants in each group (one child, one father and one mother, and one teacher).

Focus Group

Focus group interviews were done each month for five months (from September 2018 to January 2019) with the 16 children with hemophilia, their parents (fathers and mothers), and their teachers. As *Table 1* shows, some children and parents were sometimes absent for professional or medical reasons. But the engagement of all the participants was high throughout this study.

Table 1

Presence of the participants (number) during the five sessions dedicated to co-design of the serious game, for each of the four groups

		Sept 2018*	Oct 2018	Nov 2018	Dec 2018	Jan 2019**
Group 1	Children	4	4	3	4	4
	Fathers	2	4	3	3	4
	Mothers	4	4	3	4	4
	Teachers	4	4	4	3	4
Group 2	Children	4	4	2	4	4
	Fathers	4	4	2	3	2
	Mothers	4	4	2	4	4
	Teachers	4	4	3	4	4
Group 3	Children	4	4	2	4	4
	Fathers	4	4	2	3	2
	Mothers	4	4	2	4	4
	Teachers	4	4	3	4	4
Group 4	Children	4	4	2	4	4
	Fathers	2	2	2	2	4
	Mothers	3	4	2	4	3
	Teachers	4	4	3	3	4

*Note: * pre-test session; ** post-test session*

---

[1]   In hemophilia, a blood clotting factor is missing. In hemophilia A, factor VIII is missing, while in hemophilia B, factor IX is missing. Without these factors, blood will not clot well, and the individual may bleed easily or may not stop bleeding once it has started.

Research using focus groups began in the late 1930s and became increasingly popular from the 1950s in social science, owing particularly to the use of focus groups in marketing studies in Scandinavia (for a synthesis, see Wilkinson, 1998; Wilkinson & Kitzinger, 1996). Our focus group interviews aimed to obtain data from a purposively selected group of individuals rather than from a statistically representative sample of a broader population. As Stewart and Shamdasani (1990, p. 102) noted: "The most common purpose of a focus group interview is for an in-depth exploration of a topic about which little is known". Focus groups aim, Kreuger (1994, p. 3) argued, "not to infer but to understand, not to generalize but to determine the range, not to make statements about the population but to provide insights into how people perceived a situation".

In our study, each of the four focus group sessions was video-recorded (*Figure 1*). Each session was composed of two parts:

- First, participants were asked to express their opinions by using cards about the necessity (or non-necessity) to practice sports at school, and whether they think that it is important that hemophiliacs practice sports at school. Card sorting is a method traditionally used to help design or evaluate the information architecture of a website. In a card-sorting session, participants organize topics into categories that make sense to them, and they may also help us label these groups.
- Second, participants were asked to discuss contents from different websites related to relationships between hemophilia and physical activity. There was always the same moderator for each of the four focus group sessions.

In each of the four groups (Table 1), each participant (children, parents, and teachers) was asked to complete a Likert-scale questionnaire twice: During the first focus group (pre-test; September 2018) and the last focus group (post-test; January 2019). The procedure and questionnaire used in the study are described in the following section.

Procedure and Questionnaire

During the first and last sessions of a focus group (September 2018 and January 2019), all participants were asked to give their opinion about two questions: (a) "In your view, is it important to practice sports at school?" (Yes *vs*. No); and (b) "In your view, is it important that hemophiliacs practice sports at school?" (Yes *vs*. No).

Then, each participant was asked individually to assess eight photos related to different physical activities. Using a Likert scale, for each of these eight photos chosen for our study, all participant were asked to indicate their opinion from 1 ("not dangerous for hemophiliacs") to 7 ("very dangerous for hemophiliacs"). Photos were counterbalanced (i.e., the order of presentation is different) between the two sessions (pre- and post-test).

The questionnaire used in our study concerning physical activity and sports at school was specifically created to investigate opinions of individuals about different sports and physical activities. For each of eight photos representing sports (*Figure 1*), each participant was asked to indicate his/her opinion from 1 ("not dangerous for hemophiliacs") to 7 ("very dangerous for hemophiliacs").
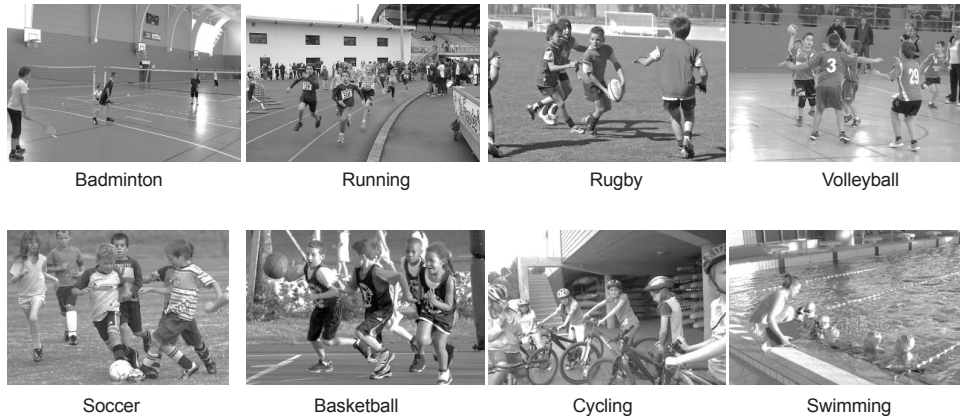
Figure 1. Photos used in the study showing physical activities and sports

Results

First, during the pre-test at the beginning of the study (September 2018), for the question "In your view, is it important to practice sports at school?", 100% of the participants responded "Yes". But, in the same period (pre-test), the distribution of responses was very different for the question, "In your view, is it important that hemophiliac practice sports at school?" As Table 2 shows, while 100% of the children responded "Yes", only 10 fathers (62.5%), 8 mothers (50%), and 7 teachers (43.8%) responded "Yes" to this question.

Table 2

Sports is important for hemophiliacs: Responses "Yes" given by the participants during the pre-test and post-test

Participant		Sports is important for hemophiliacs		Chi square	p
		Pre-test	Post-test		
Child	Yes	16	16	/	/
	%	100%	100		
Father	Yes	10	14	6.48	.06
	%	62.5%	87.5		
Mother	Yes	8	14	11,6	.003
	%	50%	10%		
Teacher	Yes	7	12	13,2	.002
	%	43.8%	75%		
Total	Yes	41	53	10,7	.005
	%	64.1%	82.8%		

Table 3

Opinion (Mean and Standard Deviation) from 1 ("not dangerous for children with hemophilia") to 7 ("very dangerous for children with hemophilia") for eight sports at school, for pre and post-test, for all the participants

	Badminton		Running		Rugby		Volley		Soccer		Basket		Cycling		Swim	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
Participant																
Child	2.88 (0.85)	1.12 (0.91)	1.19 (0.83)	2.02 (0.79)	4.81 (1.22)	4.21 (1.36)	1.63 (1.09)	1.03 (0.95)	3.06 (1.44)	2.98 (1.13)	2.38 (0.71)	1.78 (0.99)	3.19 (0.40)	2.98 (1.11)	1.19 (0.31)	1.21 (0.56)
Father	2.25 (0.57)	2.21 (0.62)	1.94 (0.44)	1.91 (0.56)	4.81 (1.12)	3.86 (1.24)	1.96 (1.37)	1.89 (1.25)	3.31 (0.60)	2.11 (0.97)	2.56 (0.63)	1.67 (1.10)	4.56 (0.60)	2.56 (0.95)	2.01 (0.85)	1.12 (0.72)
Mother	3.21 (0.89)	2.23 (1.18)	2.56 (1.12)	2.98 (1.03)	5.89 (1.17)	4.36 (1.23)	4.53 (1.23)	3.89 (1.17)	5.65 (1.09)	4.23 (1.18)	4.36 (1.44)	3.89 (1.17)	6.12 (1.11)	4.67 (1.56)	2.87 (1.08)	1.56 (0.93)
Teacher	2.77 (1.02)	1.23 (0.89)	2.16 (1.34)	1.89 (0.56)	6.32 (1.18)	4.23 (1.17)	4.76 (0.96)	4.13 (1.28)	4.78 (1.37)	3.89 (1.11)	3.34 (0.65)	2.57 (0.87)	4.42 (1.53)	3.18 (1.22)	1.89 (0.35)	1.78 (0.48)

Second, during the post-test, the responses of the participants were very different: As shown in *Table 2*, the number of respondents who answered "Yes" to the question "In your view, is it important that hemophiliacs practice sports at school?" has increased significantly. While the increase in fathers saying that sports is important for hemophiliacs is not statistically significant ($p = .06$), the increase is, however, statistically significant for mothers ($p = .003$) and for teachers ($p = .002$).

Third, as *Table 3* shows, opinions about the different physical activities and sports are different among the groups. Multivariate analysis of covariance (MANCOVA) showed that mothers have more negative opinions about sports than children do ($F(3-61) = 4.61$, $p < 001$), the difference between the opinions of mothers and fathers being not significant ($F(3-61) = 1.18$, $p = .34$). Moreover, fathers and mothers have more negative opinions about sports than teachers (respectively, $F(3-61) = 4.03$, $p < 001$ and $F(3-61) = 3.65$, $p < 001$).

Four, fathers, mothers, and teachers perceive three sports as more risky than others: rugby, soccer, and cycling. These three sports particularly involve physical contact with others, possible collisions, and the risk of falling. The two sports viewed as the least risky are swimming and running, because physical contact with others is limited and the environment (*e.g.*, water for swimming) is perceived as less dangerous. But whatever the sport, data obtained in the post-test show that opinions become more positive for all the participants, even if the difference is only statistically significant for soccer ($F(3-61) = 5.42$, $p < .001$) and cycling ($F(3-61) = 3.67$, $p < .001$). In other words, fathers, mothers, and teachers modified their opinions positively about the importance and necessity of physical activity and sports at school for children with hemophilia.

Five, one of the main results obtained is to show that in order to design, develop and deploy effective tools for learning (here, a serious game), it is necessary to consider all the stakeholders (here, children, parents, teachers, educators, and researchers). All the participants of our focus groups agreed to create different minigames in the serious game, each minigame being focused on three specific domain related to haemophilia: (i) some basic background about haemophilia; (ii) treatments to improve quality of life for patients; (iii) physical activities with a high and a less risk for injury. In each minigame, the players had to answer questions correctly if they landed on certain spaces to win "Factor cards" (a metaphor for clotting "Factor" in the blood of hemophiliacs) that they could keep and use later to get ahead or protect them from slipping backwards in the game. As many studies based on serious game show, players learn more about the disease through the game (i.e., with a gameplay), which motivates them in an interactive practice. Moreover, five general design factors were formulated based on the analysis of our focus group data: (1) anonymity, which has implications for the use of the future serious game, (2) interactivity, as it facilitates engagement and ensures better uptake of interventions; (3) portability of the technologies, as it ensures privacy and effortless use; (4) source of the information within the application has to be visible and reliable to be perceived as trustworthy and (5) comprehensibility, meaning more visually aided and easily worded information.

Discussion

At the end of all five sessions of the focus group interviews (January 2019), an architecture for the educational game had been produced. A prototype will be developed for testing for 2020. The prototype, based on verbalizations collected during all the four focus groups sessions, will be organized with several distinct parts:

- A general part for parents, teachers and children with contents about "What is haemophilia?" and "General principles of care";
- A specific part about "Fitness and physical activity for haemophiliacs": this second part will be specifically concerned with the serious game. The serious game will provide several activities such as "detection of hazards". In this case, different sports and physical activities will be proposed on images and gamers (*e.g.*, teachers, parents of children) must detect potential hazards in the situation. Some sports will be non-contact sports such as swimming, walking, golf, badminton, archery, cycling, rowing, sailing, and table tennis while other sports will be high contact and collision sports such as soccer, hockey, rugby, boxing, and wrestling, as well as high-velocity activities such as motocross racing and skiing. For each of the situation described in pictures, participants (*e.g.*, teachers, parents or children) will be invited to click by using the mouse (with the PC version) or their fingers (with the tactile tablet version) on the physical of social elements that represent potential hazards in the images. A score (i.e., the number of right responses) and the time response (in seconds) will be computed.

The collaborative design of this prototype of an innovative educational tool was also a way to positively influence opinions about physical activity and sports at school for children with hemophilia, and the present paper has concentrated on opinions of individuals (children, fathers, mothers, and teachers) at the beginning and end of the process of collaborative design.

The ultimate goal of our work is to empower children affected by hemophilia and other bleeding disorders to manage their circumstances and challenges autonomously. Because inactivity and overprotection often bring with them issues such as isolation due to poor social interaction and weight problems due to lack of exercise, helping children with hemophilia in this respect is important. Our study shows that to integrate children, their parents, and their teachers in a participatory co-design process for an educational game related to hemophilia can have a significant and positive impact on their opinions. One of our main objectives was to assert that a child with hemophilia is a normal child who happens to have a bleeding disorder.

Conclusion

Physical activity and exercise have many positive benefits for health and can improve self-esteem, learning, and inclusion in schools, and even if such activity holds particular risks for children with hemophilia, there are also particular benefits for them, such as strong muscles, good balance, and good posture, which in turn help protect the joints from bleeding. In the same way, maintaining a healthy weight

will reduce stress on joints that have already been damaged by bleeding. Physical activity is almost as important from a psychological point of view, because it has positive benefits with respect to inclusion, self-esteem, and social relationships between peers.

Parents and teachers may have some apprehensions as the school years begin. Psychosocial support is an important part of comprehensive care for people dealing with hemophilia (children, parents, teachers). Beyond the medical condition, individuals with hemophilia commonly face a number of psychosocial challenges. School psychologists play a key role in helping new patients and their families adapt and learn to cope with their new reality.

Although the choice of physical activities or sports must be individually assessed and discussed with psychologists, parents, teachers, and the children themselves, the risks and benefits of different sports should be taken into account. Finally, because the main objective of this work is to influence the mental representation of parents and teachers regarding the importance of physical activity and sports at school for hemophiliacs, we are convinced that the inclusion of children, their parents, and their teachers in a participatory co-design process of an innovative digital tool about hemophilia would be beneficial. In future investigations, the acceptability and the impact of its use should be evaluated.

Limitations

Two main limitations prevent us from generalizing the results obtained. First, because our study is based on a single post-test performed at the end of the process of collaborative design, further investigation is needed to evaluate its impact over time (*e.g.*, six months later). Second, further investigation should consider the medical history of each family, such as previous bleeding episodes. Such episodes can influence the opinions and attitudes of fathers and mothers of a child with hemophilia.

Acknowledgements

References

Bate, P., & Robert, G. (2006). Experience-based design: From redesigning the system around the patient to co-designing services with the patient. *Quality and Safety in Healthcare*, *15*, 307–310. https://doi.org/10.1136/qshc.2005.016527

Bate P., & Robert G. (2007) Toward more user-centric OD: Lessons from the field of experience-based design and a case study. *Journal of Applied Behavioral Science 43*, 41–66. https://doi.org/10.1177/0021886306297014

Beltrand, J., Godot, C., Kerbouch, S., Lepage, N., Jourdon, I., Polak, M., & Schmidt, M.E. (2017). Utilisation d'un serious game dans l'éducation thérapeutique des patients d'âges pédiatriques atteints de diabète de type 1 : évaluation de l'intérêt et de l'adhérence chez des patients âgés de 10 à 16 ans. *Annales d'Endocrinologie*, *78*(4), 203–204. https://doi.org/10.1016/j.ando.2017.07.749

Boyd, H., McKernon, S., Mullin B., & Old, A. (2012). Improving healthcare through the use of co-design. *The New Zealand Medical Journal*, *125*, 76–86.

Bowen, S., Dearden, A., Wolstenholme, D., & Cobb, M. (2011). Different views: Including others in participatory health service innovation. In J. Buur (Ed.), *PINC 2011: Participatory innovation conference*, Sonderborg, Denmark, 29 November–3 December 2010. Retrieved from http://shura.shu.ac.uk/3536/ (accessed 30 April 2019).

Chomutare, T., Johansen, S.G., Hartvigsen, G., & Arsand, E. (2016). Serious game co-design for children with type 1 diabetes. *Studies in Health Technology and Informatics*, *226*, 83–86.

Colegrove, R., & Huntzinger, R. (1994). Academic, behavioral, and social adaptation of boys with hemophilia/HIV disease. *Journal of Pediatric Psychology,* *19*(4), 457–473. https://doi.org/10.1093/jpepsy/19.4.457

Dinet, J. (2015. Effet de l'hémophilie sur la perception des risques liés aux activités de plein air à l'âge scolaire. *Enfance*, *2*, 199–223. https://doi.org/10.4074/S0013754515002037

Fromme, A., Dreeskamp, K., Pollmann, H., Thorwesten, L., Mooren, F.C., & Volker, K. (2007). Participation in sports and physical activity of haemophilia patients. *Haemophilia*, *13*(3), 323–327. https://doi.org/10.1111/j.1365-2516.2007.01456.x

Godot, C., Maccini, P., Lepage, N., Jourdon, I., Gonzalez, L., Stupa, A., … Beltrand, J. (2016). CA-211: DIVE : Le premier Serious Game pour l'éducation thérapeutique de l'enfant et de l'adolescent atteint de diabète de type 1. *Diabetes & Metabolism*, *42*(1), a93. https://doi.org/10.1016/S1262-3636(16)30343-3

Gomis, M., Querol, F., Gallach, J.E., Gonzalez, L.M., & Aznar, J.A. (2009). Exercise and sport in the treatment of haemophiliac patients: a systematic review. *Haemophilia*, *15*(1), 43–54. https://doi.org/10.1111/j.1365-2516.2008.01867.x

Gregory, M., Boddington, P., Dimond, R., Atkinson, P., Clarke, A., & Collins, P.W. (2007). Communicating about haemophilia within the family: The importance of context and of experience. *Haemophilia : The Official Journal of the World Federation of Haemophilia,* *13*(2), 189–198. https://doi.org/10.1111/j.1365-2516.2006.01417.x

Gustavsson, S.M., & Andersson, T. (2017). Patient involvement 2.0: Experience-based co-design supported by action research. *Action Research*. https://doi.org/10.1177/1476750317723965

Gustavsson, S. (2014). Improvements in neonatal care; using experience-based co-design. *International Journal of Health Care Quality Assurance*, *27*, 427–438. https://doi.org/10.1108/IJHCQA-02-2013-0016

Heijnen, L., Mauser-Bunschoten, E.P., & Roosendaal, G. (2000). Participation in sports by Dutch persons with haemophilia. *Haemophilia*, *6*(5), 537–546. https://doi.org/10.1046/j.1365-2516.2000.00422.x

Iedema, R., Merrick, E., Piper, D., Britton, K., Gray, J., … Manning, N. (2010). Co-designing as a discursive practice in emergency health services: The architecture of deliberation. *Journal of Behavioral Science*, *46*, 1–19. https://doi.org/10.1177/0021886309357544

Joubert, M., Armand, C., Morera, J., Tokayeva, L., Guillaume, A., & Reznik, Y. (2016). Impact of a serious videogame designed for flexible insulin therapy on the knowledge and behaviors of children with type 1 diabetes: The LUDIDIAB Pilot Study. *Diabetes Technology and Therapeutics*, *18*(2), 52–58. https://doi.org/10.1089/dia.2015.0227

Jurdi, S., Montaner, J., Garcia-Sanjuan, F., Jaen, J., & Nacher, V. (2018). A systematic review of game technologies for pediatric patients. *Computers in Biology and Medicine*, *97*, 89–112. https://doi.org/10.1016/j.compbiomed.2018.04.019

Krueger, R. A. (1994). *Focus groups: A practical guide for applied research*. London: Sage.

Larkin, M., Boden, Z., & Newton, E. (2015). On the brink of genuinely collaborative care: Experience based co-design in mental health. *Qualitative Health Research*, *25*, 1463–1476. https://doi.org/10.1177/1049732315576494

Manco-Johnson, M.J. (2012). Collision sports and risk of bleeding in children with hemophilia. *JAMA*, *308*(14), 1480–1481. https://doi.org/10.1001/jama.2012.13303

Maher L., Baxter H. (2009). Working in partnership with service users. *Service Design*, *15*, 172–175. https://doi.org/10.12968/bjhc.2009.15.4.41719

Matsunaga, R.M., Moraes, R.L., Borges, M.A., Matta, M.A., & Ozelo, M.C. (2014). Development of a serious game for children with hemophilia. *2014 IEEE 3nd International Conference on Serious Games and Applications for Health* (SeGAH), 1–6. https://doi.org/10.1109/SeGAH.2014.7067082

Pickles, J., Hide, E., & Maher, L. (2008). Experience-based design: A practical method of working with patients to redesign services. *Clinical Governance: An International Journal*, *13*, 51–58. https://doi.org/10.1108/14777270810850634

Ross, C.N., Goldenberg, N.A., Hund, D., & Manco-Johnson, M.J. (2009). Athletic participation in severe hemophilia: Bleeding and joint outcomes in children on prophylaxis. *Pediatrics, 124*(5), 1267–1272. https://doi.org/10.1542/peds.2009-0072

Sanders, E.B.-N. (2006). *Nurse and patient participatory workshops for the NBBJ project*. Inpatient tower expansion for H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL, USA.

Sanders, E.B.-N. & Stappers, P.J. (2008) Co-creation and the new landscapes of design. *CoDesign*, *4*(1), 5–18. https://doi.org/10.1080/15710880701875068

Shapiro, A.D., Donfield, S.M., Lynn, H.S., Cool, V.A., Stehbens, J.A., Hunsberger, S.D., … Gomperts, E. (2001). Defining the impact of hemophilia: The Academic Achievement in Children with Hemophilia Study. *Pediatrics, 108*(6), E105. https://doi.org/10.1542/peds.108.6.e105

Stewart, D.W. & Shamdasani, P.N. (1990). *Focus groups: Theory and practice*. Newbury Park, CA: Sage.

Tsianakas, V., Robert, G., Maben, J., Richardson, A., Dale C., & Wiseman, T. (2012). Implementing patient-centered cancer care: Using experience-based co-design to improve patient experience in breast and lung cancer services. *Support Care Cancer*, *20*, 2639–2647. https://doi.org/10.1007/s00520-012-1470-3

Usner, D., Donfield, S.M., Sirois, P.A., Gomperts, E., Bale, J.F., & Mitchell, W.G. (1998). Hemophilia morbidity, cognitive functioning, and academic achievement. *The Journal of Pediatrics, 133*(6), 782–787. https://doi.org/10.1016/S0022-3476(98)70151-9

Van der Net, J., Vos, R.C., Engelbert, R.H., van den Berg, M.H., Helders, P.J., & Takken, T. (2006). Physical fitness, functional ability and quality of life in children with severe haemophilia: A pilot study. *Haemophilia*, *12*(5), 494–499. https://doi.org/10.1111/j.1365-2516.2006.01307.x

Von Mackensen, S. (2007). Quality of life and sports activities in patients with haemophilia. *Haemophilia*, *13*(2), 38–43. https://doi.org/10.1111/j.1365-2516.2007.01505.x

Williams, K.A. & Chapman, M.V. (2009). Social challenges for children with hemophilia: Child and parent perspectives. *Social Work in Health Care*, *50*(3), 199–214. https://doi.org/10.1080/00981389.2010.527790

Wilkinson, S. (1998). Focus group methodology: a review. *International Journal of Social Research Methodology. Theory and Practice*, *1*(3), 181–204. https://doi.org/10.1080/13645579.1998.10846874

Wilkinson, S. & Kitzinger, C. (1996). *Representing the other*. London: Sage.

Well-being and Stress Among Upper Secondary School Pupils in Sweden

Fredrika Henriksson, Embla Küller Lindén, Elinor Schad*

Lund University, Lund, Sweden

*Corresponding author. E-mail: elinor.schad@psy.lu.se

Background. The psychological health of young people in Sweden has declined since measurements began to be taken in 1985. The reasons for the increase in stress and decline in psychological well-being among adolescents have been debated during the past few years.

Objective. The aims of this study were to explore: 1) pupils' experience of student health services, family, friends, recuperation and the learning environment; 2) whether there is a difference between introverted and extroverted pupils' sense of well-being, perceived stress, views of the learning environment, and relationships with friends and family; and 3) the degree to which the different aspects of school life predict well-being and stress.

Design. Data were collected by means of a web survey in which 1045 respondents participated.

Results. The results showed that there are significant differences in perceptions of well-being and stress depending on gender and the type of study program pupils were enrolled in. The results also revealed significant differences between introverts' and extraverts' relationships with family and friends, experience of the learning environment, and reported well-being and stress. A series of hierarchical linear regressions revealed that there were several factors affecting pupils' reported well-being and stress. The learning environment and relationships with family and friends were significant predictors for both outcome variables. Pupils' ability to recuperate from their work was found to be the most impactful predictor for well-being and stress.

Conclusion. Our results suggest that the way in which teachers interact with pupils is an important factor influencing pupils' experience of well-being and stress. Furthermore, our results suggest that pupils would benefit from student health services being made more visible and pro-active in their interaction with students.

Keywords:
extraversion;
well-being;
stress; school;
adolescence;
student health
services;
Sweden

The authors have contributed equally.

Introduction

The psychological health of young people in Sweden has declined since measurements began to be taken in 1985 and pupils have reported an incremental increase in stress and a decline in psychological well-being (Public Health Agency of Sweden, 2018). School is indeed important for the psychological health of adolescents, and is a place where they spend a large portion of their lives. School provides adolescents with an opportunity to develop their social competencies and social relations, as well as their cognitive abilities (BRIS, 2017; Berk, 2012). The mandatory student health services in Sweden (SHS, which includes healthcare professionals such as school nurses and school psychologists, etc.) constitute a support service for the pupils, and are often a pupil's first contact with health care professionals (BRIS, 2018).

Pupils' degrees of well-being and stress — the outcome variables in the current study — are affected by several factors, including demography, the nature of their social relationships, and their environment. The demographic factor of gender has been found to affect both the sense of well-being (Raja, McGee & Stanton 1992; Sentse, Lindenberg, Omvlee, Ormel & Veenstra, 2010) and perceived stress (Ordaz & Luna, 2012; Jose & Brown, 2008). Furthermore, personality traits such as extraversion/introversion[1] also affect the aforementioned aspects (Chu, Ma, Li, & Han, 2015; Jylhä & Isometsä, 2006). In addition, adolescents' relationships with friends and family are extremely important (Greenberg, Siegel, & Leitch, 1983; Navarro et al., 2017; Raja et al., 1992). With respect to the pupils' environment, this study focused on certain characteristics of the learning environment: specifically, how the adolescents experienced their school environment and their relationship to their teachers (BRIS, 2018; García-Moya, Brooks, Morgan, & Moreno, 2015).

Previous research examining adolescents' perceived well-being or stress has mainly considered single factors, such as gender or family, and their correlates. Recent qualitative research by our group in Sweden reported on several important factors influencing the life satisfaction and school experience of adolescents (Schad, 2018), while this study attempted to establish whether these factors remain important when viewed in combination and on a group level. By taking into account several different factors relevant for well-being and stress among adolescents, and compiling them into a comprehensive model, we explored how they together affect the adolescents' sense of well-being and stress. We aim to provide the reader with current knowledge about adolescents' school and life situations, and direct future research toward those factors worth further examination, in order to reverse the trend of declining mental health among adolescents in Sweden and elsewhere.

Well-being

As a concept, well-being, or mental health, encompasses the ability to handle life's ordinary stresses, the ability to work and contribute to society, and to realize one's potential (WHO, 2014). Mental health therefore describes the presence of well-

1   In this study, extraversion refers to the bipolar factor as defined in the *Five Factor* model of personality, where extraversion and introversion are at opposing ends of the trait spectrum (Holt & Passer, 2012).

being, not the absence of illness. Symptoms of mental illness can occur to a degree where no diagnosis is appropriate, or to a degree where one is still able to work and contribute to society (BRIS, 2017). This model of mental health and psychopathology as two continuums which are separate and yet related, is called the *dual factor system* (Greenspoon & Saklofske, 2001).

Using this definition, it is possible for mental health and mental illness to co-exist in the same person. Well-being describes how one feels in relation to life, including aspects of the balance of emotion and joy, as well as the level of contentment; it's also called "life-satisfaction" (Public Health Agency of Sweden, 2018).

Mental illness is not the subject of this study; instead, well-being is examined in terms of pupils' subjective experiences of feeling cheerful, calm, and filled with interest and energy (the WHO-5 scale). The WHO-5 scale used in this study is, however, likely to pick up on symptoms of depression, since depression can be expressed as a lack of positive emotion and energy (American Psychiatric Association, 2013).

During childhood, most children rate life satisfaction as high. However, there is a decrease in this rating as children age (Public Health Agency of Sweden, 2018). International research shows that girls tend to report lower well-being than boys do (Cavallo et al., 2006; Inchley et al., 2016; Torsheim et al., 2006). The same is the case in Swedish, where differences between the genders have been documented in regards to well-being (Public Health Agency of Sweden, 2018), and to the broader sense of subjective health (Jerdén, Burell, Stenlund, Weinehall, & Bergström, 2011), where females rate their well-being and subjective health lower than males do. It has been hypothesized that the socialization process affects girls in such a way that their health is impacted for the worse, leading, for example, to more depression in adolescent girls (Slater, Guthrie, & Boyd, 2001).

Personality traits have also been found to affect well-being, as reflected in the fact that extraversion is positively correlated with high well-being (positive mental health), and negatively correlated with negative mental health, measured as psychopathological symptoms (Tian, Jiang, & Huebner, 2019). Furthermore, extraverts have a tendency to experience more positive emotions than introverts do (Swickert, Hittner, Kitos, & Cox-Fuenzalida, 2004), and introversion is correlated with symptoms of depression (Jylhä & Isometsä, 2006) and anxiety (Eysenck, 1952). It has also been found that extraversion has significant predictive value in relation to resilience, which can be understood as a tendency for positive emotion, maintenance of social relations, and social skills (Ercan, 2017). In addition, the correlation between a sense of well-being and extraversion can be explained as extraverts being better at "pursuing their potentials" (Tommasi et al., 2018, p. 71).

It has been found that the state of the adolescents' relationships with their families significantly impacts their sense of well-being (Di Blasi et al., 2018). A positive attachment between parent and child is found to be connected to well-being during adolescence (Greenberg et al., 1983; Raja et al., 1992). Problematic family environments are indeed factors that can increase the risk of developing mental health in the future (BRIS, 2017). However, a positive relationship with any supportive adult contributes to the mental health of the child, and as children spend a large part of their time in school, the importance of the school environment is clear.

Adolescents have important relationships with friends and teachers in their school something which is connected to their well-being (Greenberg et al., 1983). Moreover, there is a positive relationship between connectedness with teachers and emotional well-being (García-Moya et al., 2015). In fact, a school environment where the teacher understands the needs of the pupil, and where flexible solutions are possible, is important for the well-being of the pupil (Gillberg, 2015). In Sweden, the BRIS Helpline (part of the group Child Helpline International run by Children's Rights in Society) is increasingly contacted by adolescents who do not feel safe in school (BRIS, 2018). BRIS (2018) has reported that school has a negative effect on student well-being and they question whether the school system in Sweden is able to provide the necessary supportive environment for pupils.

Stress

Stress is the body's natural response to demands upon the individual. In the short term, stress can have a positive effect and facilitate performance, but, if prolonged, it will cause exhaustion and an array of physiological symptoms such as trouble sleeping, problems with memory and concentration, headaches, and irritability (Ottosson, 2015). Prolonged stress and its accompanying symptoms are common in settings where ambitions are high, but little support is given, and time to recuperate is scarce (Ottosson, 2015).

Recuperation time appears to be an important for the damaging consequences of stress (Aronsson, Svensson, & Gustafsson, 2003). Slow recuperation appears to signal that the body is strained and the individual's ability to handle stressful events is diminished (Aronsson et al., 2003). The subject of stress was the foremost reason for Swedish adolescents aged 16-18 calling a helpline for children and youth in 2017 (BRIS, 2018). Swedish pupils in upper secondary school report more stress as compared to pupils in other countries (BRIS, 2018). National data further indicate that pupils enrolled in higher education preparatory programs experience significantly more stress than pupils enrolled in vocational programs, although the differences were small (Fröberg & Johansson, 2015).

Research finds that the gender differences in stress response which appear in adulthood emerged during adolescence (Ordaz & Luna, 2012; Jose & Brown, 2008). Girls in Sweden aged 16 to 18 report more stress than boys the same age (Statistics Sweden, 2013). In addition to reporting more symptoms of stress than males do, females experience more demands in school and report poorer sleep (Schraml, Perski, Grossi, & Simonsson-Sarnecki, 2011). Girls also rate ordinary challenges during adolescence as more stressful than boys do (Tolan, Miller, & Thomas, 1988), and women between the ages of 18 and 65 rate stressful events as more stressful and less controllable than men do (Matud, 2004). Research also shows that women tend to use less effective coping styles than men do (Matud, 2004); this has been explained as due to their different socialization patterns (Sigmon & Stanton, 1995).

Extraversion is another factor which influences how stress is perceived by an individual. Extraverted individuals have a naturally low biological arousal level within the brain, while introverted individuals have a naturally high arousal level (Eysenck, as cited in Holt & Passer, 2012, p. 587). Further, extraverted individuals are more sensitive to rewards than they are to punishment, while for introverts it is

often the opposite (Gray, 1970). Extraverted individuals appear to be more ready to handle a stressful situation as they, unlike introverts, do not perceive the stressful situation as threatening to the same degree (Gallagher, 1990). Furthermore, extraverts tend to be more optimistic and expect outcomes of events to be favorable, and with such optimism they are primed to perform better. This leads to a better outcome (Swickert et al., 2004), which likely impacts how extraverted pupils experience school.

Another important factor affecting the stress levels of adolescents is family relationships. Family support acts as a buffer for the effects of stress (Manczak, Skerrett, Gabriel, Ryan, & Langenecker, 2018). A close relationship with a caring parental figure is a factor which contributes to adolescents' resilience in the face of stress (Masten & Coatsworth, as cited in Holt & Passer, 2012, p. 619). Furthermore, relationships with friends seem to be one of the most meaningful aspects of pupils' lives; social support and care are positive qualities mentioned by the pupils themselves (Schad, 2018).

Even so, relationships with friends are also reported to contribute to stress when conflicts arise (Sotardi, 2018). One study found that a main source of stress for school-aged children was disagreements with peers both inside and outside of class (Sotardi, 2018). While peers have been found to add to the stress experienced by children and adolescents, peer support has also been found to be an important protective factor against stress (Waas & Licitra-Kleckler, 1993; Wilhsson et al., 2017). Thus, an environment that lacks support is a significant risk factor for perceived stress among adolescents.

The school environment is yet another factor affecting the stress perceived by adolescents. In addition to friends and family, caring teachers with whom the adolescent can form a bond constitute a protective factor (BRIS, 2017). Teacher support plays an important role in preventing stress among adolescents (Sotardi, 2018). It is important for pupils' experience of support in school that their teacher provides help and a manageable academic workload" (Suldo et al., 2009). Teachers also serve as role models for adolescents to learn coping behaviors; teachers have been found to promote a more effective coping style (Zimmer-Gembeck & Locke, 2007). However, when the relationship between teacher and pupil is faulty, the school experience can negatively impact the psychological health of adolescents and result in increased stress (BRIS, 2018). Adolescents report lack of adult support when they feel unable to reach the goals posed by themselves or those around them (BRIS, 2018).

Stress caused by exams and homework affects young children, and it has been found that school-related stress increases with age (Statistics Sweden, 2013). Demands placed on pupils in the school context limit their free time and ability to recuperate (Schad, 2018). Pupils also report that their free time was scarce or nonexistent due to school-related demands (Schad, 2018). It is in the context of school that stress and its physiological symptoms are more likely to occur (Ottosson, 2015), further underlining the importance of a well-organized school environment which allows pupils time to recuperate well.

The current study

This study was based on our group's previous research, which explored several factors affecting adolescents' experiences of the school environment (Schad, 2018). Our aim in this study was to assess upper secondary pupils' life and school situations and explore the relationships between characteristics which likely impact pupils' perceived well-being and stress. We attempted to establish the importance of these factors when viewed together and on a group level in the school context of today.

Objective

1. Explore upper secondary school pupils' experience of student health services, family, friends, and the learning environment.
2. Explore whether there is a difference in well-being, perceived stress, the learning environment, and relationships with friends and family between introverted and extraverted pupils.
3. Explore the degree to which the different aspects of school life affect well-being and stress in the study population.

Methods

The study context: upper secondary education

The Swedish schooling system consists of three stages. The first stage is compulsory school (*Grundskola*) which consists of 10 mandatory years. The second stage, upper secondary school (*Gymnasium*), consists of three voluntary years which lower secondary school graduates begin the year they turn 16. The upper secondary school programs are divided into two: higher education preparatory programs (56% of pupils) and vocational programs (27% of pupils) (*Skolverket*, The Swedish National Agency for Education, 2018). The third stage is voluntary higher education begun at the earliest at the age of 18. This study concerned only students attending upper secondary school.

Study design

In the interest of generalizability, our sample was drawn from several schools with a varied composition of degree-programs. A cross-sectional design was chosen, utilizing a digital survey as the means of data collection. The participants were recruited through the principals at their respective schools. Some schools made the survey available on their internal network, while others relied on teachers to tell the pupils about the survey and provide them with the link to it. In addition, some teachers were contacted directly and asked to inform their pupils about the survey. The survey was created based on the results of a previous study (Schad, 2018) on pupils' views of school, friends, spare time, and family. Furthermore, care was taken to ensure unambiguously and positively worded questions so that the survey would be easy to understand (Choi & Pak, 2005).

Procedure

Our survey was made available to the pupils using Artologik Survey & Report. An introductory text was posted along with a link to the survey. The participants were informed that participation was voluntary, and that they would remain anonymous.

A pilot study was performed with the help of a group of first-year upper secondary school pupils ($N = 27$). After the pilot survey was completed, the pupils were asked to give feedback on the questions. Due to the stress scale's low alpha-value, the scale was revised, and a second pilot was conducted to verify its reliability. The second pilot was on a convenience sample of individuals, with ages ranging from 17 to 25 ($N = 21$).

The data collection stretched from January to February 2019. Four upper secondary schools posted the survey to their school's internal networks. In addition, teachers in three other schools made the survey available to their respective classes.

At the start of the second week of data collection, a message was sent to the principals and teachers asking them to remind the pupils to fill out the survey. Most schools were accommodating in this regard, by reposting the survey to their internal network, making it accessible to the pupils again.

Participants

All pupils in four upper secondary schools in southern Sweden were invited to participate in the study ($N_1 = 1100$, $N_2 = 2100$, $N_3 = 1128$, $N_4 = 300$). In addition, individual classes from three other schools were invited to participate ($N = 175$). In total, 4813 pupils had access to the survey. One school was excluded due to its low response rate (6%), reducing the total to $N = 4513$.

Table 1

Descriptive background information

	Demographic variables	%	N
Gender	Woman	54.6	571
	Man	44.2	462
	Other	1.1	12
Year	1	45.0	470
	2	26.2	276
	3	28.6	299
Program	Preparatory	85.8	897
	Vocational	13.7	143
	Other	0.5	5
Living	With guardian/guardians	97.9	1023
	Without guardian/guardians	2.1	22

The overall response rate was 23.9% (*N*=1078). Respondents who indicated that they did not attend school regularly (1.8%, *N*=19) and pupils attending the introductory language program (1.4%, *N*=15) were excluded from the analysis, resulting in a total of 1045 participants. The demographic data is reported in *Table 1*.

Measurements

Scales and questions were constructed based on themes in a previous study (Schad, 2018). To ensure answers to all items, each item was set as mandatory, which meant that the participant would be reminded to answer an item left unanswered before being allowed to proceed to the next question. Cronbach's alpha values are reported in *Table 4*.

Data were collected on gender identity (Female, Male, Other), school year (first, second, and third year), chosen program (higher education preparatory program, vocational program, introductory program, and other), school attendance ("I regularly attend school", Yes/No), and whether the student was currently living with his or her guardian/guardians (Yes/No).

Recuperation was measured with 5-item scale constructed for this study (*e.g., Recuperation for me is… to do something that I chose for myself*). Participants responded to the items using a four-point Likert scale (*1 = completely disagree; 2 = disagree to some extent; 3 = agree to some extent;* and *4 = completely agree*).

Performance was measures with a 6-item scale constructed for this study (*e.g., I feel that… I have demands on my own performance*). Participants responded to the items using a four-point Likert scale (*1 = completely disagree; to 4 = completely agree*). No mean was calculated for the responses on this scale because a high score cannot be said to be neither negative nor positive.

Personality was a question constructed for this study to measure self-rated extraversion. The item (*I identify as...*) was a statement to which participants responded by choosing one of two options (*"Introverted"* or *"Extraverted"*). The item was entitled *personality* so as to not prime participants toward either option.

Student Health Services (SHS) was a 5-item scale constructed for this study to measure the pupils' knowledge and view of the Student Health Services at their school (*e.g., I know how to get in contact with student health services*). The items were formulated as statements, and the responses indicated the degree of agreement on a four-point Likert scale (*1 = completely disagree to 4 = completely agree*).

Family was a 6-item scale constructed for this study to measure self-rated experience of family (*e.g., I have a good relationship with my family*). Participants responded to the items using a four-point Likert scale (*1 = completely disagree; to 4 = completely agree*).

Friends was a 5-item scale constructed for t this study to measure self-rated experience of relationships with friends (*e.g., I have a good relationship with my friends*). Participants responded to the items using a four-point Likert scale (*1 = completely disagree; to 4 = completely agree*).

Experience of the Learning Situation was a 7-item scale constructed for this study to measure self-rated experience of the learning environment (*e.g., I feel that… most of my teachers instruct the class so that I understand what is expected of me*). Participants responded to the items using a four-point Likert scale (*1 = completely disagree; to 4 = completely agree*).

Outcome variables

Well-being

Self-rated well-being was measured using a modified version of the 5-item World Health Organization Well-being Index (WHO-5), which measures experienced mood during the previous two weeks (Bech, Olsen, Kjoller, & Rasmussen, 2003). The items were measured on a six-point Likert scale where *0 = never; 1 = sometimes; 2 = less than half of the time; 3 = more than half of the time; 4 = mostly;* and *5 = always* (the original WHO-5 well-being index uses 5 = "all of the time"; this was modified to "always" in the current survey). The items were modified to better suit upper secondary school students (*"I have felt active and vigorous"* was modified to *"I have felt active and engaged,"* and *"my daily life has been filled with things that interest me"* was modified to *"my school day has been filled with things that interest me"*). Topp, Østergaard, Søndergaard, and Bech (2015) conclude that the WHO-5 well-being index measures subjective well-being with adequate validity. Its alpha value has previously been reported as α = 0.83 (Löve, Andersson, Moore & Hensing, 2014).

Stress

Stress was a 7-item scale constructed for this study to measure self-rated stress (*e.g., Over the past two weeks, I have felt stressed*). Participants responded to the items using a four-point Likert scale (*1 = close to never; 2 = less than half the time; 3 = more than half the time;* and *4 = close to always*).

Data analysis

The data collected was analyzed using SPSS version 24.0. The internal consistency for each scale was reported as Cronbach's Alpha coefficients (Cronbach, 1951). Prior to performing statistical analyses, as per the recommendations by Muthén and Kaplan (1992), normality, kurtosis, and skewness were controlled. Outliers were also controlled for; 25 outliers were statistically corrected according to the outlier labelling method (Hoaglin & Iglewics, 1987). The internal validity of the scales was assessed using exploratory factor analysis (EFA). Initially, the bivariate correlations between all scale-items were calculated to assess the appropriateness of the EFA. To be able to obtain fit indices for the EFA, the maximum-likelihood analysis method was used. The sampling adequacy of each scale was assessed using the Kaiser-Meyer-Olkin measure (KMO), Bartlett's test of sphericity, and scree plots. Scales were modified in accordance with results of the EFA.

Actual two-tailed p-values are reported where appropriate. Pearson zero-order correlations were used to explore associations between continuous study variables. Point biserial correlations were used to estimate between binary variables and continuous variables. A series of independent t-tests was performed in order to examine the relationship with family, relationships with friends, experience of the learning environment, well-being, and perceived stress based on reported extraversion. Prior to conducting the independent t-tests, the assumption of normality and homogeneity of variance was controlled in the data.

Two theoretically-driven, 5-step hierarchical regressions were carried out to assess to what degree the independent variables contributed to the variance in self-

reported sense of well-being and stress, respectively. Prior to conducting the hierarchical regressions, the assumptions of normality, linear relationship between variables, homoscedasticity, and multicollinearity were controlled in the data.

Ethical considerations

A Lund University, Department of Psychology ethics declaration was approved prior to commencing the study. The participants were asked for consent after receiving information regarding the study, data treatment, and the purpose of the study. All participants remained anonymous, and the survey program did not record IP-addresses. No sensitive personal information was collected.

Results

Characteristics of the study population

As seen in *Table 2*, a majority of pupils responded positively (*3 = Agree to some extent* or *4 = Agree completely*) regarding their overall knowledge of the SHS, as well as their relationship to family and friends. A majority of the pupils also reported a positive experience in relation to the learning environment.

When the items from the complete scales were examined, the results indicated that most of the pupils had a fair idea of where they could find the SHS and how to get in touch with them. Finally, a majority of the pupils felt that their teachers listened and instructed the class in a way they understood.

As seen in *Table 2*, regarding stress, the responses were balanced around the cut-off between agreement and disagreement (*M* = 2.48, *SD* = 0.71). When examining only the item *"During the past two weeks… I have felt stressed,"* the results indicated that a majority of pupils had felt stressed during the two-week span leading up to participating in the survey (*M* = 2.76, *SD* = 1.0). However, a majority of pupils rated low levels (*1 = Disagree completely, 2 = Disagree to some extent*) of physiological symptoms of stress, such as headaches or difficulties sleeping.

Table 2

All scales

Scale	Total		Women		Men	
	N	M(SD)	N	M(SD)	N	M(SD)
Student Health (1–4)	1045	2.86(0.81)	571	2.98(0.74)	462	2.70(0.86)
Family* (1–4)	1023*	3.15(0.60)	555*	3.08(0.63)	457*	3.22(0.56)
Friends (1–4)	1045	3.31(0.57)	571	3.29(0.54)	462	3.34(0.60
Learning situation (1–4)	1045	2.93(0.52)	571	2.84(0.51)	462	3.05(0.50)
Well-being (0–25)	1045	16.38(5.17)	571	14.88(4.69)	462	18.30(5.13)
Stress (1–4)	1045	2.48(0.71)	571	2.73(0.63)	462	2.16(0.67)

*Note. * Students not currently living with their guardian/guardians are excluded. Other as a gender does not have its own column as there were few responses. In the total, all responses are included.*

T-tests for independent samples were performed to compare female and male pupils' well-being and their perceived stress. The results, as seen in *Table 3*, showed that female pupils reported less favorable experiences on both measures, i.e., their scores indicated less well-being and higher stress.

Similar results were found when comparing vocational programs with higher education preparatory programs on measures of well-being and perceived stress. As presented in *Table 3*, those pupils participating in higher education preparatory programs reported lower well-being and higher perceived stress than pupils participating in a vocational program.

Table 3

T-tests for gender and program differences

Grouping variable		N	M	SD	df	t	p	d
Well-being (0–25)	Preparatory	897	15.94	5.01	1038	−6.846	<.001***	.615
	Vocational	143	19.05	5.28				
	Women	571	14.88	4.69	946.240[a]	−11.053	<.001***	.641
	Men	462	18.30	5.13				
Stress (1–4)	Preparatory	897	2.52	0.70	1038	5.210	<.001***	.469
	Vocational	143	2.19	0.71				
	Women	571	2.73	0.63	1031	14.260	<.001***	.878
	Men	462	2.16	0.67				

Note. [a] Equal variance not assumed. * p < .05; ** p < .01; *** p < .001

General observations

Student Health Services

Out of all pupils, 30.0% responded negatively (*disagree to some extent* or *completely disagree*) to the item *"I know where the student health services are located at my school."* And while 72.6% of students agreed that someone from the student health team had introduced themselves to the class, 47.6% of pupils did not know who was part of the student health team. Finally, 32.8% of pupils responded negatively to the item *"I know how to get in contact with the student health services."* These responses indicated that close to one in three pupils would have difficulty contacting the student health team. While 74.1% felt that they could contact the student health services should they need it, only 67.2% knew how to do so.

Performance

Over 90 percent of the students (90.8%) felt that they placed demands on their own performance, and 35.9% felt that they could not live up to the demands placed on them. Forty-seven percent of pupils agreed with the statement *"I have to work more than my classmates in order to achieve the results I want."* In addition, 76.5% felt that the demand for productivity was stressful, and 68.5% experienced stress if they were not doing something productive.

Recuperation

Regarding recuperation, a majority of pupils, 58.5%, did not feel that they had time to recuperate during an average week. An overwhelming number (89.6%) agreed that recuperation to them meant doing something that they chose for themselves. Further, 54.0% of the pupils agreed that recuperation to them meant not doing anything active at all, and 74.9% felt that recuperation was doing something where there were no demands for performance, while 65.7% felt that recuperation was to do something social.

Family and friends

Out of all the pupils, 22.9% did not agree that they had time to spend with family, and 33.0% did not feel that they had time for their friends. However, 86.6% felt that their family was a good support for them, and 86.8% felt that their friends were a good support for them. Nearly the same percentages of pupils felt that they could ask both family and friends for help if they should need it.

Experience of the learning situation

When the pupils' experiences of the learning environment were examined, it was found that 84.5% felt that their teachers "see" them in class, 85.5% felt that their teachers listened to them, and 90.7% felt that the teachers helped them when they needed it. However, 43.4% felt that their teachers lacked an understanding of what was a reasonable amount of time to spend on their subject. A full 32.5% did not feel that the curricular demands placed on them were reasonable, and in response to the item *"Most of my teachers instruct the class so that I understand what is expected of me,"* 26.0% responded negatively (*completely disagree* or *disagree to some extent*).

Exploratory Factor Analysis

A series of maximum likelihood analyses was used to assess the reliability of the scales. Individual items lacking satisfactory loadings were removed. The fit indices and sampling adequacies of each respective scale are reported in *Tables 4* and *5*.

Table 4

Exploratory factor analysis

Scale	%	M	SD	α	Skew	Kurtosis	KMO	p
SHS (1–4)	66.50	2.86	0.81	0.87	−0.629	−0.485	0.849	<.001***
Family (1–4)	44.67	3.14	0.61	0.79	−0.761	0.318	0.814	<.001***
Friends (1–4)	59.72	3.31	0.57	0.81	−1.007	1.266	0.808	<.001***
Learning situation (1–4)	43.59	2.93	0.52	0.84	−0.380	0.363	0.873	<.001***
Well-being (0–5)	50.50	16.38	5.17	0.83	0.121	−0.472	0.841	<.001***
Stress (1–4)	45.38	2.48	0.71	0.85	0.012	−0.667	0.884	<.001***

Note. % indicates initial Eigenvalues percent of variance.
[a]*KMO values of 0.6 indicate inadequate sampling and EFA is not appropriate.*
* *p < .05* ** *p < .01* *** *p < .001*

Table 5

Goodness of fit

Scale	Factor matrix	χ^2	df	p
SHS (1–4)	0.682–0.853	88.296	5	<.001***
Family (1–4)	0.333–0.912	71.101	9	<.001***
Friends (1–4)	0.480–0.866	82.597	05	<.001***
Learning situation (1–4)	0.538–0.765	181.899	14	<.001***
Well-being (0–5)	0.560–0.787	35.274	05	<.001***
Stress (1–4)	0.597–0.767	117.035	14	<.001***

*Note. * p < .05 ** p < .01 *** p < .001*

Extraversion/introversion in relation to other factors

Of respondents, 60.2% viewed themselves as introverted ($N=629$), while the other 39.8% ($N=416$) viewed themselves as extraverted. A series of t-tests for independent samples were performed to examine possible differences between extraverts and introverts on all measures. As seen in *Table 6*, significant differences were found on all measures, with extraverts consistently giving responses indicating a more positive experience. The results showed that extraverts scored higher on well-being, and lower on stress, as well as reporting a more favorable experience in relation to their friends, family, and the learning environment.

Table 6

T-tests for Personality differences

Scale	Personality	N	M	SD	df	t	p	d
Family[a] (1–4)	Introverts	609	3.10	0.60	1021**	−2.848	.004**	.182
	Extraverts	414	3.21	0.61				
Friends*(1–4)	Introverts	629	3.20	0.60	1013.029	−8.497	<.001***	.495
	Extraverts	416	3.48	0.47				
Learning situation [b] (1–4)	Introverts	629	2.90	0.50	820.354	−2.492	.013*	.121
	Extraverts	416	2.98	0.55				
Well-being (0–5)	Introverts	629	15.46	5.00	1043	−7.272	<.001***	.459
	Extraverts	416	17.78	5.12				
Stress (1–4)	Introverts	629	2.54	0.70	1043	3.621	<.001***	.227
	Extraverts	416	2.38	0.71				

Note.[a] Students not currently living with their guardian/guardians are excluded.
*[b] Equal variance not assumed. * p < .05 ** p < .01 *** p < .001*

Correlations

Table 7 gives an overview of correlations between all scales. A significant correlation of moderate size was found between the dependent variables. The assumptions necessary for performing a hierarchical regression were met. Most data points achieved $r>.2$, which is the recommended level.

Table 7

Correlation matrix

	Gender	Programme	Extraversion	Recuperation	Family	Friends	Learning situation	Well–being	Stress
Gender	1	0.229**	0.062*	0.287**	0.105**	0.033	0.174**	0.293**	−0.379**
Program		1	0.050	0.111**	0.024	0.019	0.060	0.198**	−0.110**
Extraversion			1	0.094**	0.089**	0.243**	0.079*	0.220**	−0.101**
Recuperation				1	0.269**	0.243**	0.467**	0.513**	−0.545**
Family					1	0.374**	0.308**	0.434**	−0.400**
Friends						1	0.334**	0.360**	−0.294**
Learning Situation							1	0.483**	−0.455**
Well-being								1	−0.673**
Stress									1

*Note. *= p<.05, **= p<.01*

Hierarchical Linear Regression

A hierarchical regression analysis was conducted in order to examine how pupils' gender, educational program attended, extraversion/introversion rating, recuperation during a normal week, and relationship to family and friends, as well as their experience of the learning environment, related to their sense of well-being (*Table 8*).

   In the first model, gender and program were entered as predictors, which explained 10.8% ($p<.001$) of the variance. In the second model, extraversion was added as a predictor. The second model explained 14.4% ($p<.001$) of the variance. The third model added recuperation as a predictor, explaining 33.1% ($p<.001$) of the variance. In the fourth model, the relationship to family and friends was added as a predictor, which raised the proportion of explained variance to 43.1% ($p<.001$). The final model included the pupils' experience of the learning situation as a predictor, which explained 46.3% ($p<.001$) of the variance. The most impactful predictor in the final model was recuperation, which explained 27.2% ($p<.001$) of the variance in the pupils' well-being, followed by the relationship to family (23.4%,

Table 8

Hierarchical multiple regression analysis on the dependent variable Well-being

Predictor	Model 1			Model 2			Model 3			Model 4			Model 5		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Gender	2.657	0.300	0.269***	2.555	0.294	0.259***	1.357	0.270	0.137***	1.353	0.250	0.137***	1.254	0.243	0.127***
Program	1.756	0.390	0.137***	1.676	0.383	0.131***	1.414	0.339	0.110***	1.481	0.313	0.115***	1.474	0.304	0.115***
Personality				1.989	0.304	0.190***	1.653	0.270	0.158***	1.167	0.256	0.112***	1.222	0.248	0.117***
Recuperation							2.691	0.160	0.452***	2.091	0.154	0.351***	1.619	0.162	0.272***
Family										2.226	0.221	0.262***	1.987	0.217	0.234***
Friends										1.243	0.246	0.135***	0.860	0.244	0.093***
Learning situation													2.103	0.269	0.213***
R^2	0.108			0.144			0.331			0.431			0.463		
F change for R^2	61.790***			42.818***			284.368***			89.197***			61.155***		

Note. All variables are centered at their means.
*$* p<.05$ ** $p<.01$ ***$p<.001$.*

Table 9

Hierarchical multiple regression analysis on the dependent variable Stress

Predictor	Model 1			Model 2			Model 3			Model 4			Model 5		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Gender	-0.552	0.042	-0.391***	-0.545	0.042	-0.386***	-0.359	0.038	-0.255***	-0.357	0.035	-0.253***	-0.340	0.035	-0.241***
Program	-0.122	0.060	-0.060*	-0.117	0.060	-0.058	-0.055	0.052	-0.027	-0.056	0.049	-0.028	-0.061	0.048	-0.030
Personality				-0.095	0.041	-0.066*	-0.054	0.036	-0.037	-0.001	0.034	-0.001	-0.007	0.034	-0.005
Recuperation							-0.392	0.021	-0.487***	-0.322	0.021	-0.396***	-0.272	0.022	-0.335***
Family										-0.285	0.030	-0.244***	-0.258	0.030	-0.222***
Friends										-0.119	0.033	-0.094***	-0.079	0.033	-0.062*
Learning situation													-0.225	0.037	-0.166***
R^2	0.168			0.173			0.383			0.459			0.479		
F change for R^2	101.487***			5.268*			341.378***			70.488**			37.257***		

Note. All variables are centered at their means.
* $p < .05$ ** $p < .01$ ***$p < .001$.

$p < .001$), and the experience of the learning environment (21.3%, $p < .001$). All predictors remained significant throughout the analysis.

A second hierarchical regression analysis was conducted in order to examine how pupils' gender, educational program, extraversion/introversion rating, recuperation during a normal week, and relationship with family and friends, as well as their experience of the learning environment related to perceived stress (*Table 9*).

In the first model, gender and program were entered as predictors, which explained 16.8% ($p < .001$) of the variance. In the second model, extraversion was added. The second model explained 17.3% ($p < .001$) of the variance. This step rendered the program attended by the pupils non-significant ($p = 0.051$). The third model added recuperation as a predictor. This model explained 38.3% ($p < .001$) of the variance, but rendered extraversion non-significant ($p = 0.134$). In the fourth model, the relationships to family and friends were added as predictors, which raised the proportion of explained variance to 45.9% ($p < .001$). The final model included the pupils' experience of the learning environment as a predictor, which explained 47.9% ($p < .001$) of the variance. The most impactful predictor in the final model was recuperation, which explained 33.5% ($p < .001$) of the variance in perceived stress, followed by gender (24.1%, $p < .001$) and relationship to family (22.2%, $p < .001$).

Discussion

Student Health Services, Gender and Program

In this study, the pupils' views of the SHS were examined. Not all pupils were familiar with or had knowledge of the SHS, as nearly one in three pupils did not know how to contact the student health team, and reported that the SHS had not introduced themselves to their class. This finding is important, given that the SHS often serves as the first contact with health care for pupils (BRIS, 2018). As the student health services' aim is to promote health (the Swedish National Agency for Education, 2012), this cannot be optimally achieved if pupils are not familiar with their services. It is possible that if the student health services are made more visible in the schools, the knowledge of how to reach their services may increase.

Furthermore, the results of this study point to important connections which gender and educational program have with the outcome variables: well-being and stress. With regard to gender, females reported a significantly lower sense of well-being, as well as higher levels of stress. These results are in line with previous research in Sweden regarding well-being (Jerdén et al., 2011) and stress (Schraml et al., 2011). Furthermore, the results are consistent with research done internationally (Cavallo et al., 2006; Inchley et al., 2016; Matud, 2004; Tolan et al., 1988; Torsheim et al., 2006).

These results draw our attention to an ongoing problem area as discussed, for example, by Slater, Guthrie, and Boyd in their 2001 review, which pointed to gender specific expectations of women as a possible explanation for girls' low psychological health. Women are also socialized to handle stressors using certain coping strategies (Sigmon & Stanton, 1995), which are found to be less effective (Matud, 2004), which in turn has been linked to depression (Slater et al., 2001). Given the

results of the current study, there is reason to conclude that female adolescents are at a higher risk of experiencing lower well-being and higher stress. Gender is an especially impactful factor in relation to stress, since it explains a large proportion of the variance in this study, something which is supported by similar findings as reported in a review article by Ordaz and Luna (2012).

While the relationship between gender and well-being (Public Health Agency of Sweden, 2018) is supported by previous research, the relationship between program of study and well-being has been less fully researched. Previous research has indeed found that pupils attending a preparatory program are more stressed than those attending a vocational program (Fröberg & Johansson, 2015). No previous research on Swedish upper secondary school programs in relation to pupils' well-being has been found. In this study, which program the pupils attended explained a small but significant proportion of the variance in pupils' well-being.

Extraversion

In this study, extraverted pupils rated their well-being higher, and stress lower than introverts did. In line with previous research on the subject, extraverts' experiences seemed altogether more advantaged (Swickert et al., 2004; Tian et al., 2019). Extraversion has, in this study, been found to be important for the experience of relationship to family, relationship to friends, and finally, to the learning environment, while introverted pupils score lower and thus report a less favorable experience in all three areas.

We found that extraversion explained a small but significant proportion of the variance of self-reported well-being, but not stress. Previous research on stress in relation to extraversion has, on the other hand, shown that extraverts are less vulnerable to stress (Chu et al., 2015; Gallagher, 1990).

In this study, we found that extraverts reported a more favorable experience of the learning environment when compared with introverts. These findings can be understood in light of previous research which showed that extraversion appears advantageous in a school context as it entails an orientation toward rewards (Smits & Boeck, 2006), optimism, and positive affect (Swickert et al., 2004).

Performance and recuperation

Nearly eight out of ten pupils felt that the demand for productivity was stressful, and seven out of ten pupils experienced stress if they were not doing something productive. These results, when contrasted with the fact that seven out of ten pupils agreed with the item *"Recuperation for me is to do something where there's no performance demand,"* points to a difficult pattern where recuperation itself can be stressful.

In this study, recuperation was found to be an important factor affecting well-being and stress. We also found that nearly six in ten pupils did not feel that they had the time to recuperate during an average week. Our results indicate that when pupils' recuperation needs are not met, it affects their experience negatively. Recuperation has not been sufficiently researched in relation to pupils' well-being and stress, despite the fact that the factor appears important (Schad, 2018), a point with which others who have examined recuperation appear to agree (Aronsson et al., 2003).

Family and friends

Our study found that family was yet another important factor affecting well-being and stress. These findings are in line with previous research, which suggests that a good relationship with one's parents has a positive effect on well-being (Navarro et al., 2017; Sentse et al., 2010) and stress (Greenberg et al., 1983; Manczak et al., 2018; Waas & Licitra-Kleckler, 1993). Similarly, friends were found to be another factor affecting well-being and stress. The relationship with friends proved an important factor in relation to both outcome variables. These findings seem appropriate when compared to previous research on the topic, indicating that the relationship with friends is an important factor affecting adolescents' well-being (Greenberg et al., 1983; Navarro et al., 2017) and stress (Waas & Licitra-Kleckler, 1993).

In this study, the results showed that one in five pupils felt that they did not have enough time to spend with their family, and one in three pupils felt that they did not have time to spend with their friends, which could suggest that the pupils might miss out on the benefits of a good family or friend relationship, including getting available help when it was needed.

Experience of the learning environment

In this study, the pupils' experience of the learning environment was an important factor affecting the pupils' well-being and stress. In relation to previous research, relationships between the learning environment and our outcome variables were to be expected (García-Moya et al., 2015; Suldo et al., 2009; Sotardi, 2018). School gives pupils access to a social context where they can find friends and support from adults outside their immediate family, which are two other important factors in relation to pupils' psychological health (BRIS, 2017). Furthermore, teachers promote a more effective coping style (Zimmer-Gembeck & Locke, 2007), which is thought to be beneficial in relation to well-being and perceived stress (Matud, 2004).

Practical implications

An important finding of this study was that the student health services are not optimally visible. It is possible that if the student health services were made more visible in classes, more pupils would contact them, and possibly, be helped. As stated above, the student health services are often the first contact that pupils have with health care professionals, further underlining the importance of their availability.

Another important aspect in relation to pupils' well-being and stress is recuperation. Our results point to a lack of time for recuperation among pupils. Recuperation is the factor with the most predictive value for both well-being and stress. If pupils had the time and/or strategies to recuperate between school days, it is likely, given our results, that well-being would increase, and stress would decrease. The student health services could provide the pupils with strategies to recuperate through such interventions as education regarding time management or sleep routines. Furthermore, the learning environment should be better organized according to student's needs.

Our results show that a majority of pupils reported experiencing stress. As previous research showed that prolonged stress has adverse effects, schools and the

student health services should work preventatively to pre-empt the adverse effects of stress among pupils. Furthermore, our results show that the pupils' experience is likely influenced by the way in which their teachers interact with them. If the pupils feel that they are seen and heard by their teachers, it is likely their experience is impacted for the better.

Conclusion

The aims of the current study were to assess upper secondary school pupils' life situations and examine factors affecting pupils' sense of well-being and perceived stress.

Our findings suggest that the gender differences found in previous research persist within the sample, where girls have a lower sense of well-being and experience more stress. Extraverted individuals appear to have a more favorable experience than introverted individuals, where they experience higher well-being and less stress, as supported by previous findings. There is also a significant difference depending upon which educational program the pupils were enrolled in, where those pupils who attended a higher education preparatory program were found to have lower well-being and more perceived stress than those who attend a vocational program. These findings suggest that future research should examine possible interactions, or additive effects, between these groups since low well-being and high stress are both risk factors for further psychological distress.

When examining factors affecting well-being and stress, we found that recuperation is the most impactful factor for both outcome variables. We also found that family is a constant positive factor, favorably affecting both outcome variables. The learning environment appears to be more influential with regards to well-being, while gender differences are more impactful with regards to stress.

There are aspects of the learning situation that were not covered in this study, such as the school culture; how the students perceive the atmosphere in the school; and whether there are occurrences of bullying, threats, or violence. Another aspect of the learning environment is the much criticized grading system in Sweden which this study does not examine. Results of this study show that 32.5 % of pupils don't feel that the curricular demands placed on them are reasonable. Whether these pupils' experiences can be attributed to the grading system would be interesting to examine.

Other organizational aspects of the school experience ought to be further examined as well. While a majority of pupils in this study were found to agree with statements such as *"most of my teachers listen to me,"* and *"most of my teachers 'see me' in class,"* the current study also found that one in four pupils did not think that their teachers instructed them in a way that allowed them to understand what was expected of them, and 43.4 % did not think that their teachers knew what amount of time was reasonable to spend on their subject.

In this study, female gender, introversion, and enrolment in a preparatory program were risk factors for less well-being and higher stress. Given this, one is led to think that, with a supportive environment and time to recuperate, the inevitable demands of the school context could be made less stress-inducing.

Limitations

One limitations of this study is the low response rate, which means that it cannot be said for certain that the pupils who chose to participate didn't not differ systematically from pupils who did not participate. Furthermore, the number of respondents enrolled in vocational programs was low, which makes conclusions drawn about this group less reliable. The group of pupils in a vocational program should ideally have constituted around 27% of the sample (The Swedish National Agency for Education, 2018) instead of the 13.7% involved in this study, in order to be representative of the population.

In addition, due to the study design, it was not possible to perform a non-response analysis to examine whether there was bias in the data based on participants who chose to submit an incomplete survey.

Finally, although causality is implied, as this study is cross-sectional, no inferences can be drawn regarding causality.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: American Psychiatric Association. https://doi.org/10.1176/appi.books.9780890425596

Aronsson, G., Svensson, L., & Gustafsson, K. (2003). Unwinding, Recuperation, and Health Among Compulsory School of High School Teachers in Sweden. *International Journal of Stress Management*, *10*(3), 217–234. https://doi.org/10.1037/1072-5245.10.3.217

Berk, L.E. (2012). *Infants, children, and adolescents*. Boston, MA: Pearson Education, Inc.

BRIS [Children's rights in society]. (2017). Barns psykiska ohälsa — det är dags att bryta trenden [Children's psychological issues — it is time to break the trend]. Retrieved from https://www.bris.se/globalassets/pdf/rapporter/bris-rapport-2017_1.pdf?fbclid=IwAR3hR7e3Uvo9wX7Nl-zovSDfqAHr7SR7mWo6XoWzsVE_bbDB2kmxtQo2cQn0

BRIS [Children's rights in society]. (2018). Skola. Vård. Omsorg. Och den psykiska ohälsan. [School. Care. Welfare. And the psychological issues]. Retrieved from https://www.bris.se/globalassets/om-bris/bris-rapport-2018/bris_arsrapport_2017.pdf

Cavallo, F., Zambon, A., Borraccino, A., Raven-Sieberer, U., Torsheim, T., & Lemma, P. (2006). Girls growing through adolescence have a higher risk of poor health. *Quality of Life Research Journal*, *15*(10), 1577–1585. https://doi.org/10.1007/s11136-006-0037-5

Choi, B.C.K., & Pak, A.W.P. (2005). A catalog of biases in questionnaires. *Preventing Chronic Disease*, *2*(1), A13.

Chu, X., Ma, Z., Li, Y., & Han, J. (2015). Agreeableness, Extraversion, Stressor and Physiological Stress Response. *International Journal of Social Science Studies*, *3*(4), 79–86. https://doi.org/10.11114/ijsss.v3i4.857

Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297–334. https://doi.org/10.1007/BF02310555

Depue, R.A., & Iacono, W G. (1989). Neurobehavioral Aspects of Affective Disorders. *Annual Review of Psychology*, *40*(1), 457–492. https://doi.org/10.1146/annurev.ps.40.020189.002325

Di Blasi, M., Torres, D., Duca, I., Tosto, C., Muccioli, P., & Alagna, M. (2018). Self-image and psychological distress in treatment-seeking adolescents. *Child & Adolescent Mental Health*, *23*(3), 258–265. https://doi.org/10.1111/camh.12255

Ercan, H. (2017). The Relationship between Resilience and the Big Five Personality Traits in Emerging Adulthood. *Eurasian Journal of Educational Research*, (70), 83–103. https://doi.org/10.14689/ejer.2017.70.5

Eysenck, H.J. (1952). *The scientific study of personality*. Oxford, England: Macmillan.

Folkhälsomyndigheten [The Public Health Agency of Sweden] (2018). Därför ökar psykisk ohälsa bland unga [Why psychological issues are increasing among youth]. Retrieved from https://www.folkhalsomyndigheten.se/livsvillkor-levnadsvanor/psykisk-halsa-och-suicidprevention/darfor-okar-psykisk-ohalsa-bland-unga/?fbclid=IwAR0Aa52w-JRq3Y_Wlkok8un7LnoQ9A-DOcw3v5_nQ-A7dqTyP6bcwNuwOuN4

Fröberg, K., & Johansson, H. (2015). Vuxenblivande och upplevd stress hos tredje årets gymnasieelever [Becoming an adult and perceived stress among third year upper secondary school pupils]. Örebro University. Retrieved from http://www.diva-portal.org/smash/get/diva2:838495/FULLTEXT01.pdf

Gallagher, D.J. (1990). Extraversion, neuroticism and appraisal of stressful academic events. *Personality and Individual Differences*, *11*(10), 1053–1057. https://doi.org/10.1016/0191-8869(90)90133-C

García-Moya, I., Brooks, F., Morgan, A., & Moreno, C. (2015). Subjective Well-Being in Adolescence and Teacher Connectedness: A Health Asset Analysis. *Health Education Journal*, *74*(6), 641-654. https://doi.org/10.1177/0017896914555039

Gillberg, C. (2015). *Barn- och ungdomspsykiati* [Child and Adolescent Psychiatry]. Stockholm: Natur & kultur.

Gray, J.A. (1970). The psychophysiological basis of introversion–extraversion. *Behaviour Research and Therapy*, *8*(3), 249–266. https://doi.org/10.1016/0005-7967(70)90069-0

Gray, J A. (1987). *The psychology of fear and stress.* (2ed). Cambridge: Cambridge University Press.

Greenberg, M.T., Siegel, J.M., & Leitch, C.J. (1983). The nature and importance of attachment relationships to parents and peers during adolescence. *Journal of Youth and Adolescence*, *12*(5), 373–386. https://doi.org/10.1007/BF02088721

Greenspoon, P., & Saklofske, D. (2001). Toward an Integration of Subjective Well-Being and Psychopathology. *Social Indicators Research*, *54*(1), 81–108. https://doi.org/10.1023/A:1007219227883

Hoaglin, D.C., & Iglewicz, B. (1987) Fine-tuning some resistant rules for outlier labeling. *Journal of the American Statistical Association,* *82*(400), 1147–1149. https://doi.org/10.1080/01621459.1987.10478551

Holt, N., & Passer, M.W. (2012). *Psychology: the science of mind and behaviour*. Maidenhead: McGraw-Hill Higher Education.

Inchley, J. et al. (Eds.) (2016). *Growing up unequal: gender and socioeconomic differences in young people's health and well-being. Health Behaviour in School-aged Children (HBSC) study: international report from the 2013/2014 survey*. Copenhagen: WHO Regional Office for Europe. Retrieved from http://alkoholdialog.dk/wp-content/uploads/2016/08/HBSC-2016.pdf

Jerdén, L., Burell, G., Stenlund, H., Weinehall, L., & Bergström, E. (2011). Gender Differences and Predictors of Self-Rated Health Development Among Swedish Adolescents. *Journal of Adolescent Health*, *48*(2), 1430-50. https://doi.org/10.1016/j.jadohealth.2010.06.005

Jose, P.E., & Brown, I. (2008). When Does the Gender Difference in Rumination Begin? Gender and Age Differences in the Use of Rumination by Adolescents. *Journal of Youth and Adolescence*, *37*(2), 180-192. https://doi.org/10.1007/s10964-006-9166-y

Jylhä, P., & Isometsä, E. (2006). The relationship of neuroticism and extraversion to symptoms of anxiety and depression in the general population. *Depression & Anxiety (1091–4269)*, *23*(5), 281–289. https://doi.org/10.1002/da.20167

Kalat, J.W. (2013). *Biological psychology* (11th Ed). Belmont, CA: Wadsworth.

Manczak, E.M., Skerrett, K.A., Gabriel, L.B., Ryan, K.A., & Langenecker, S.A. (2018). Family support: A possible buffer against disruptive events for individuals with and without remitted depression. *Journal of Family Psychology.32*(7), 926–935. https://doi.org/10.1037/fam0000451

Matud, M.P. (2004). Gender differences in stress and coping styles. *Personality and Individual Differences*, *37*(7), 1401–1415. https://doi:10.1016/j.paid.2004.01.010

Muthén, B., & Kaplan, D. (1992). A comparison of some methodologies for the factor analysis of non-normal Likert variables: A note on the size of the model. *British Journal of Mathematical and Statistical Psychology ,45*(1), 19–30. https://doi.org/10.1111/j.2044-8317.1992.tb00975.x

Navarro, D., Montserrat, C., Malo, S., González, M., Casas, F., & Crous, G. (2017). Subjective well-being: what do adolescents say? *Child & Family Social Work*, *22*(1), 175–184. https://doi:10.1111/cfs.12215

Ordaz, S., & Luna, B. (2012). Review: Sex differences in physiological reactivity to acute psychosocial stress in adolescence. *Psychoneuroendocrinology*, *37*(8), 1135–1157. https://doi.org/10.1016/j.psyneuen.2012.01.002

Ottosson, J.-O. (2015). *Psykiatri* [Psychiatry]. Stockholm: Liber.

Raja, S.N., McGee, R., & Stanton, W.R. (1992). Perceived attachments to parents and peers and psychological well-being in adolescence. *Journal of Youth and Adolescence*, *21*(4), 471–485. https://doi.org/10.1007/BF01537898

Schad, E., & Levin, K. (2018). Elevkårsengagerade ungdomars syn på skola, vänner, fritid och familj. Första delrapport, Projektet UNG. Stockholm: Sveriges Psykologförbund.

Schraml, K., Perski, A., Grossi, G., & Simonsson-Sarnecki, M. (2011). Stress symptoms among adolescents: The role of subjective psychosocial conditions, lifestyle, and self-esteem. *Journal of Adolescence*, *34*, 987–996. https://doi.org/10.1016/j.adolescence.2010.11.010

Sentse, M., Lindenberg, S., Omvlee, A., Ormel, J., & Veenstra, R. (2010). Rejection and Acceptance across Contexts: Parents and Peers as Risks and Buffers for Early Adolescent Psychopathology. The TRAILS Study. *Journal of Abnormal Child Psychology*, *38*(1), 119–130. https://doi.org/10.1007/s10802-009-9351-z

Sigmon, S.T., & Stanton, A.L. (1995). Gender Differences in Coping: A Further "Test of Socialization and Role Constraint Theories. *Sex Roles*, *33*(9–10), 565–587. https://doi.org/10.1007/BF01547718

Skolverket [The Swedish National Agency for Education] (2018). Preliminär statistik om gymnasieskolans elever [Preliminary statistics about the upper secondary school's students]. Retrieved from https://www.skolverket.se/skolutveckling/statistik/arkiverade-statistiknyheter/statistik/2018-11-08-preliminar-statistik-om-gymnasieskolans-elever

Slater, J.M., Guthrie, B.J., & Boyd, C.J. (2001). A feminist theoretical approach to understanding health of adolescent females. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, *28*(6), 443–449. https://doi.org/10.1016/S1054-139X(00)00207-X

Sotardi, V.A. (2018). Bumps in the Road: Exploring Teachers' Perceptions of Student Stress and Coping. *Teacher Educator*, *53*(2), 208–228. https://doi.org/10.1080/08878730.2017.1422826

Statistiska centralbyrån [Statistics Sweden]. (2013). Barn stressade av läxor och prov [Children stressed by homework and exams]. (Article 2013:75). Retrieved from https://www.scb.se/sv_/Hitta-statistik/Artiklar/Barn-stressade-av-laxor-och-prov/

Suldo, S.M., Friedrich, A.A., White, T., Farmer, J., Minch, D., & Michalowski, J. (2009). Teacher Support and Adolescents' Subjective Well-Being: A Mixed-Methods Investigation. *School Psychology Review*, *38*(1), 67–85.

Swickert, R., Hittner, J.B., Kitos, N., & Cox-Fuenzalida, L.-E. (2004). Direct or indirect, that is the question: a re-evaluation of extraversion's influence on self-esteem. *Personality and Individual Differences*, *36*(1), 207–217. https://doi.org/10.1016/S0191-8869(03)00080-1

Tian, L., Jiang, S., & Huebner, E.S. (2019). The Big Two Personality Traits and Adolescents' Complete Mental Health: The Mediation Role of Perceived School Stress. *School Psychology*, *34*(1), 32–42. http://dx.doi.org/10.1037/spq0000257

Tolan, P., Miller, L., & Thomas, P. (1988). Perception and experience of types of social stress and self-image among adolescents. *Journal of Youth and Adolescence*, *17*(2), 147–163. https://doi.org/10.1007/BF01537964

Tommasi, M., Grassi, P., Balsamo, M., Picconi, L., Saggino, A. & Furnham, A. (2018). Correlations Between Personality, Affective and Filial Self-Efficacy Beliefs, and Psychological Well-Being in a Sample of Italian Adolescents. *Psychological Reports*, *121*(1), 59–78. https://doi.org/10.1177/0033294117720698

Torsheim, T., Ravens-Sieberer, U., Hetland, J., Välimaa, R., Danielson, M., & Overpeck, M. (2006). *Cross-national variat*ion in gender differences in adolescent subjective health in Europe and North America. *Social Science & Medicine*, *62*(4), 815–827. https://doi.org/10.1016/j.socscimed.2005.06.047

Waas, G.A., & Licitra-Kleckler, D.M. (1993). Perceived social support among high-stress adolescents: The role of peers and family. *Journal of Adolescent Research*, *8*(4), 381–402. https://doi.org/10.1177/074355489384003

World Health Organization. (2014). Mental health: a state of well-being. Retrieved from https://www.who.int/features/factfiles/mental_health/en/

Wilhsson, M., Svedberg, P., Högdin, S., & Nygren, J.M. (2017). Strategies of Adolescent Girls and Boys for Coping with School-Related Stress. *Journal of School Nursing*, *33*(5), 374–382. https://doi.org/10.1177/1059840516676875

Zimmer-Gembeck, M.J., & Locke, E.M. (2007). The socialization of adolescent coping behaviours: Relationships with families and teachers. *Journal of Adolescence*, *30*(1), 1–16. https://doi.org/10.1016/j.adolescence.2005.03.001

Adolescent Social Emotional Health, Empathy, and Self-esteem: Preliminary Validation of the Lithuanian Version of the SEHS-S Questionnaire

Ala Petrulytė[a*], Virginija Guogienė[b], Vaiva Rimienė[a]

[a] *Vytautas Magnus University, Vilnius, Lithuania*
[b] *Švenčionėliai progymnasium, Vilnius, Lithuania*

*Corresponding author. E-mail: ala.petrulyte@vdu.lt

Background. The priority for today's educational psychologists in Lithuanian schools is to promote psycho-educational activities aimed at fostering children's well-being. School psychologists are to provide services for, and consult with, children and adolescents with mental health challenges, in order to facilitate their transitions to positive developmental trajectories. Therefore, it is important to test the construct validity of the adolescent social emotional health survey (SEHS-S) in a Lithuanian sample.

Objective. To investigate the social emotional health, empathy, and self-esteem of a Lithuanian adolescent sample using the adolescent Social Emotional Health Survey (SEHS-S), as well as to perform regression and confirmatory factor analysis.

Design. We used the Social Emotional Health Survey-Secondary (SEHS-S) (Furlong et al., 2014), the Interpersonal Reactivity Index (*IRI*) (Davis, 1980), and the Rosenberg Self-Esteem Scale (SES) (M. Rosenberg, 1989). The sample was comprised of 935 students (12–18 years old) from various Lithuanian schools: 482 boys and 453 girls.

Results. The self-esteem of the adolescent boys was higher than that of the adolescent girls. A positive correlation between the adolescents' social emotional health and their self-esteem and empathy was identified. The strongest predictors of the adolescents' social and emotional health included empathic concern, self-esteem, and perspective-taking. The confirmatory factor analysis confirmed the validity of the structural model of the Lithuanian version of the SEHS-S survey.

Conclusion. The findings of the regression and confirmatory factor analysis supported the use of the SEHS-S as a valid and reliable instrument for mental health research with Lithuanian adolescents. School psychologists will be able to use the Lithuanian version of SEHS–S survey to monitor adolescent social emotional health.

Introduction

At present psychologists working in Lithuanian schools have been encountering increasing rates of various dependencies and suicide, a growing number of bullying incidences, and more instances of adolescent behavioral and emotional problems. Currently educational psychologists have been prioritizing psycho-educational and preventive activities targeted at the emotional and social well-being of children. Some scholars (Kalpokienė, 2005; Ramanauskienė, Matulionienė, & Martinkienė, 2002; Valantinas, 2009; Petrulytė & Guogienė, 2018) have stated that adolescent mental health has been mainly investigated from the deficit-oriented perspective, *i.e.,* the investigated factors are related to the youth's problems, various impairments, or related risks. It is particularly relevant to conduct research on the positive development of adolescents, paying specific attention to their ability to address the crises of psychosocial development in adolescence. Strengths developed in adolescence lead to an increased sense of happiness and improvement in their academic achievements (Park & Peterson, 2008). The more strengths an adolescent gains, the more positive development that individual exhibits.

The present research study was carried out from the perspective of a positive psychological and holistic approach to mental health, which focuses on the emotional social health domains of the family, the school, and peers. Our approach treats adolescents' emotional and social health as a multi-dimensional construct, which embraces a combination of psychological strengths, or positive dispositions possessed by an individual: belief-in-self, belief-in-others, emotional competence, and engaged living (Furlong, You, Renshaw, Smith, & O'Malley, 2014; Furlong, 2015). The concepts of adolescent social and emotional health include the adolescent's relations with family, school, and peer group, and the formation of a sense of identity together with self-respect and belief-in-self, not excluding their interaction and synergy. Scientific research conducted in the USA, Australia, Japan, Korea, and Turkey showed the model of social and emotional health to be appropriate (You, Furlong, Felix, & O'Malley, 2014; Furlong, 2015). Our surveys revealed that the construct of social emotional health and strengths is interrelated with a high level of mental health, psychological resilience, and well-being. The value of enhancing the mental health of children and adolescents has been prioritized all over the world.

Over recent years M. Furlong has been the principal investigator in theoretical and practical research studies striving to design and implement the use of a universal and convenient psychometric tool for predicting the social emotional health of adolescents (Furlong et al, 2014; Furlong, 2015). We are partners at the international "Project CoVitality", a school-based mental wellness and thriving student development initiative (Project CoVitality, 2018). More than 20 countries worldwide have been applying the Social Emotional Health Survey (SEHS) to evaluate adolescents. The social emotional measures of adolescents positively correlate with measures of subjective well-being, life satisfaction, and the Big 5 personality constructs; they are negatively correlated with measures of internal emotional distress and involvement in-risk behavior. The Social Emotional Health Survey System includes three conceptually-linked measures that assess the core psychological and social mindsets associated with positive youth development from childhood through the post-high

school transition (primary, secondary, and higher education). All three SEHS measures assess the general construct called "CoVitality" (Project CoVitality, 2018).

A large number of researchers refer to *empathy* as a relevant aspect of social emotional health. Our study approaches empathy as a multi-dimensional construct, which embraces emotional and cognitive processes (Davis, 1980; Batson, 2009; Decety & Cowell, 2014). A high level of empathy in an adolescent creates favorable conditions for that adolescent to express positive emotions and is a signal of prosocial behavior (Pukinskaitė & Guogienė, 2010).

The positive correlation between adolescents' emotional competence and various aspects of empathy has been previously identified (Petrides, Frederickson, Sangareau, & Furnham, 2006; Hoffman, 2000; Kradin, 2005; Carr & Lutjemeier, 2005, and others). Adolescent girls' understanding of their own feelings, their playfulness, and their ability to easily establish conversation and communicate with people more frequently, as well as the level of girls' empathy, are greater than those of boys (Strayer and Roberts, 2004; Katyal & Awasthi, 2005; Shulte-Rüther, Markowitsch, Shah, Fink, & Piefke, 2008; Žukauskienė, Malinauskienė, & Erentaitė, 2011). Petrulytė & Guogienė (2018) found that empathy is higher among senior adolescents (16-18 years old) compared to younger ones (12–15 years old), and in the group of girls compared to boys.

Positive self-esteem is of particular importance to adolescent well-being, and is linked to better social relations and higher levels of academic achievement (Bos, Muris, Mulkens, & Schaalma, 2006), emotional intelligence (Schutte, Malouff, Simunek, Hollander, McKenley, & Hollander, 2002; Žukauskienė, et al., 2011), and lower levels of emotional problems (Dutton & Brown, 1997). Self-esteem in adolescence becomes a motivating factor and encourages an adolescent to act and seek self-realization.

The research studies on the strengths of adolescents' positive development, and adolescents' social emotional health, empathy, and self-esteem are few, and the above-mentioned dimensions can be successfully developed. The results of the present study will provide additional evidence about the utility of the SEHS-S model in Lithuania, and will contribute to cross-cultural research on adolescent social emotional health.

Objective

The main goal of our research was to investigate the social emotional health of Lithuanian adolescents and its links with their empathy and self-esteem, and to obtain additional evidence about the utility of the SEHS-S model in a Lithuanian sample.

The specific objectives of the research were:

1. To investigate and compare the self-esteem of adolescents in Lithuanian groups of younger (12–15 years old) and senior (16–19 years old) adolescents, as well as to compare that of girls and boys.
2. To investigate the links of adolescents' dispositions of social emotional health with empathy and self-esteem.
3. To carry out a regression analysis on adolescents' social emotional health, empathy, and self-esteem.
4. To perform a confirmatory factor analysis of adolescent social emotional health in a Lithuanian sample.

Methods

Participants

Our sample was comprised of 935 adolescents from secondary schools in various Lithuanian regions (cities and districts): 483 junior adolescents (12–15 years old) and 452 senior adolescents (16–18 years old); 482 boys and 453 girls.

Procedures

The Social Emotional Health Survey-Secondary (SEHS-S) (Furlong et al., 2014). This questionnaire survey includes a wide range of social emotional psychological dispositions associated with the positive development of young people. The construct validity of this questionnaire was confirmed after a factor analysis of its invariance in groups based on sociocultural and gender principles (You et al., 2015). The permission to use the questionnaire was granted to A. Petrulytė and V. Guogienė. The double translation was done by A. Petrulytė and J. Bagdonavičiūtė.

The questionnaire consists of four dispositions/scales: belief-in-self, belief-in-others, emotional competence, and engaged living. Each disposition embraces three unique sub-scales of mental health. The belief-in-self consists of *self-efficacy, self-awareness,* and *persistence*; the belief-in-others comprises *school support, peer support,* and *family support*; emotional competence consists of *emotion regulation, empathy,* and *behavioral self-control*; and engaged living embraces *gratitude, zest,* and *optimism*.

This instrument (SEHS-S) was validated using samples of students from California (Furlong et al., 2014; You et al., 2015), Korea (Lee, You & Furlong, 2015), and Japan (Ito, Smith, You, Shimoda, & Furlong, 2015). M. Furlong emphasizes that this research is directed toward the optimal exploration of human functions on the basis of the hypothesis that the combination of the first-order positive psychological dispositions (*belief-in-self, belief-in-others, emotional competence,* and *engaged living*) builds a second-order synergic meta-construct of "covitality," which is a good tool for understanding the quality of teenagers' and youth's lives, as well as predicting their success and well-being now and in later life (Furlong et al., 2014).

The SEHS-S questionnaire includes 36 items. The students' self-reports are completed using a four-point scale (1 = not at all true of me; 2 = a little true of me; 3 = pretty much true of me; and 4 = very much true of me). The following are examples of SEHS-S items: "I enjoy reading books;" "I usually expect to have a good day." The internal reliability of the results from the Lithuanian adolescent group (Cronbach's alpha) is presented in *Table 1*.

Table 1

Cronbach's alpha indicators of SEHS-S constructs in the Lithuanian adolescent group.

SEHS-S constructs	Cronbach's alpha
Belief-in-self	.73
Belief-in-others	.76
Emotional competence	.73
Engaged living	.85
General index	.80

Interpersonal Reactivity Index (IRI), (Davis, 1980). This scale investigates various aspects of empathy and evaluates emotional reactions to the negative experiences of other people. The scale consists of 28 items. The respondents were asked to rate every item on a 4-point scale (from 0 to 4) in respect to their suitability for characterization of own attitude and feelings. The respondents evaluated the statements while the supervisor was reading additional instructions. The scores of the sub-scales were calculated and the evaluations of all 7 items added up.

The scale of *Interpersonal Reactivity Index* (IRI) consists of four sub-scales that aim to evaluate different aspects of empathy:

1. *Empathic concern scale*. This scale assesses emotional empathy, *i.e.,* the ability to feel compassion for others, or express tenderness toward them;
2. *Perspective-taking scale*. The scale establishes the cognitive aspect of empathy, *i.e.,* the ability to understand and adopt the attitude of other people;
3. *Personal distress scale*. This scale evaluates the ability to experience distress and discomfort in reaction to the distress of others;
4. *Fantasy scale*. This scale evaluates the ability of respondents to transpose themselves imaginatively into the feelings of others.

The sum of the sub-scales of perspective-taking and empathic concern makes up the index of empathy. The author M.H. Davis granted permission to use the *Scale of Interpersonal Reactivity Index* to V. Guogienė. The internal reliability of the scores of the Lithuanian adolescent group (Cronbach's alpha) is as follows (see *Table 2*).

Table 2

Cronbach's alpha indicators of empathy (IRI) in the Lithuanian adolescent group

IRI constructs	*Cronbach's* alpha
Empathic concern	.62
Perspective-taking	.67
Personal distress	.58
Fantasy	.66
Empathy index	.77

*Rosenberg Self-Esteem Scale (RSE)***.** M. Rosenberg (1989) defined global self-esteem as the overall attitude one has toward oneself. High self-esteem entails the belief that one is "good enough," whereas low self-esteem is associated with self-rejection and a general lack of self-respect. There are 10 RSE items with a 4-point rating scale. Cronbach's alpha coefficients for scores based on the 10 Rosenberg items are usually above .80, and values above .90 have been reported in the literature (Boyle, Saklofske, & Matthews, 2014). Self-esteem is positively correlated with psychological well-being and life satisfaction. These coefficients range from .30 to .60 or higher (*e.g.,* Buhrmester et al., 2011; Robins et al., 2001; Rosenthal et al., 2011). The internal compatibility of the Lithuanian adolescent group's scores on self–esteem (Cronbach's alpha) is .72.

Microsoft Excel 2003, SPSS (17.0 for Windows), and LISREL were used for data processing. To establish the link between the adolescents' social emotional health (SEHS-S), empathy, and self-esteem, correlation analysis was applied, and the coefficient of Spearman's rank correlation was calculated. The regression analysis was performed to examine the relationship and influence of independent variables on the dependent variable, *i.e.*, on adolescent social emotional health (SEHS-S). The confirmatory factor analysis was carried out to verify the structure of the adolescents' social emotional health survey (SEHS-S) (Brown, 2015; Čekanavičius, 2009).

Results

In the previous research on adolescents' *social emotional health* (SEHS-S) conducted by the two authors of this article (Petrulyte & Guogiene, 2018), statistically significant higher values in the dispositions of *belief-in-self* ($p \leq 0.01$), *engaged living* ($p \leq 0.01$), and general index of *social emotional health* were found among *junior* adolescents (12–15 years old) compared to *senior* ones (16–18 years old). Also, higher values of *social emotional health* (SEHS-S), dispositions of *belief-in-others, emotional competence,* and *general index of social emotional health* ($p \leq 0.01$) were observed among adolescent *girls* compared to *boys*. The indicators of adolescents' *empathy* (IRI) revealed statistically significantly higher values of the *fantasy, personal distress,* and *empathy* indices among *senior adolescents* ($p \leq 0.000$), compared to those of *junior adolescents*; the higher values of the indicators of *empathic concern, perspective-taking, personal distress, and general index* (IRI) ($p \leq 0.000$) were disclosed in the group of girls compared to that of boys.

However, in this research the comparison of self-esteem indicators of junior (12–15 years old) and senior (16-18 years old) adolescents did not show any statistically significant differences (see *Table 3*).

Table 3

Self-esteem of junior (12-15 years old) and senior (16-18 years old) adolescents (Mann-Whitney U test)

	Age	N	Mean Rank	Z	P
Self-esteem	12–15 years	483	454.74	−1.55	0.120
	16–18 years	452	482.17		

Statistically significant differences were identified in the values of self-esteem in the groups of girls and boys: the self-esteem of adolescent boys was higher than that of girls (see *Table 4*).

Table 4

Self-esteem of boy and girl adolescents (Mann-Whitney U test)

	Gender	N	Mean Rank	Z	P
Self-esteem	boys	482	506.10	−4.46	0.000
	girls	453	427.46		

The correlation analysis of the adolescents' *social emotional health* (SEHS-S) and *empathy* (IRI) allowed us to conclude that the scales of *empathic concern, perspective-taking,* and the *empathy index* positively correlate with all the dispositions of SEHS-S (p ≤ 0.01), whereas *fantasy* (IRI) and *personal distress (IRI)* demonstrated *positive correlations* only with the scale of *emotional competence* (SEHS-S) (r = 0.22; p ≤ 0.01) (see *Table 5*).

Table 5

Correlations of the adolescents' social emotional health (SEHS-S) and empathy (N=935)

SEHS-S	Belief-in-self	Belief-in-others	Emotional competence	Engaged living	General index
Empathic concern scale	0.17**	0.27**	0.49**	0.23**	0.35**
Perspective-taking scale	0.13**	0.17**	0.45**	0.23**	0.30**
Fantasy scale	0.00	0.05	0.22**	0.01	0.06
Personal distress	−0.25**	-0.06	0.10**	−0.12**	−0.10**
Empathy index	0.03	0.16**	0.44**	0.12**	0.21**

*Note. **p ≤ 0.000*

On the basis of the correlation analysis, it was established that adolescents' self-esteem significantly positively correlates with the following dispositions of social emotional health (SEHS-S): *belief-in-self* (r = 0.38; p ≤ 0.00), *engaged living* (r = 0.35; p ≤ 0.00), *belief-in-others* (r = 0.29; p ≤ 0.00) and *emotional competence* (r = 0.09; p ≤ 0.00) (see *Table 6*).

Table 6

Correlation of adolescents' social emotional health (SEHS-S) and self-esteem (N=935)

SEHS-S	Belief-in-self	Belief-in-others	Emotional competence	Engaged living	General index
Self-esteem	0.38**	0.29**	0.09**	0.35**	0.39**

*Note. **p ≤ 0.000*

To examine the relationship and influence of independent variables on the dependent variable, *i.e.,* on adolescent social emotional health, a regression analysis on the data was performed which tested various models to identify the most suitable one. It was determined that adolescents' empathic concern, perspective-taking, personal distress, and self-esteem had an impact on their overall social emotional health. The formula for a regression line is as follows:

$$Y = 86.232 + 0.665*X1 + 1.276*X2 + 0.486*X3 + 0.614*X4,$$

where Y = social emotional health, X1 = self-esteem, X2 = empathic concern, X3 = perspective-taking, and X4 = distress.

The coefficient of determination (R^2) for this model is 0.36. Y is significantly more influenced by the variable X2 (its standardized Beta value is 1.276) than by others: for X1 the standardized Beta value is 0.665; for X3 it is 0.486; and for X4 it is -0.614.

The confirmatory factor analysis aimed to test the construct validity of the adolescent social emotional health survey (SEHS-S). Its first stage focused on testing the appropriateness of the SEHS-S questionnaire model, which consists of 12 latent (12 sub-scales loaded on to the four dispositions – belief-in-self, belief-in-others, emotional competence, and engaged living – and 36 observed factors (questionnaire statements/questions). The obtained results confirmed the structure of the questionnaire: χ^2 (DF = 528, N = 935) = 2411.78, p>0.05; RMSEA = 0.062; SRMR = 0.06; CFI = 0.93; NFI = 0.91; and GFI = 0.92.
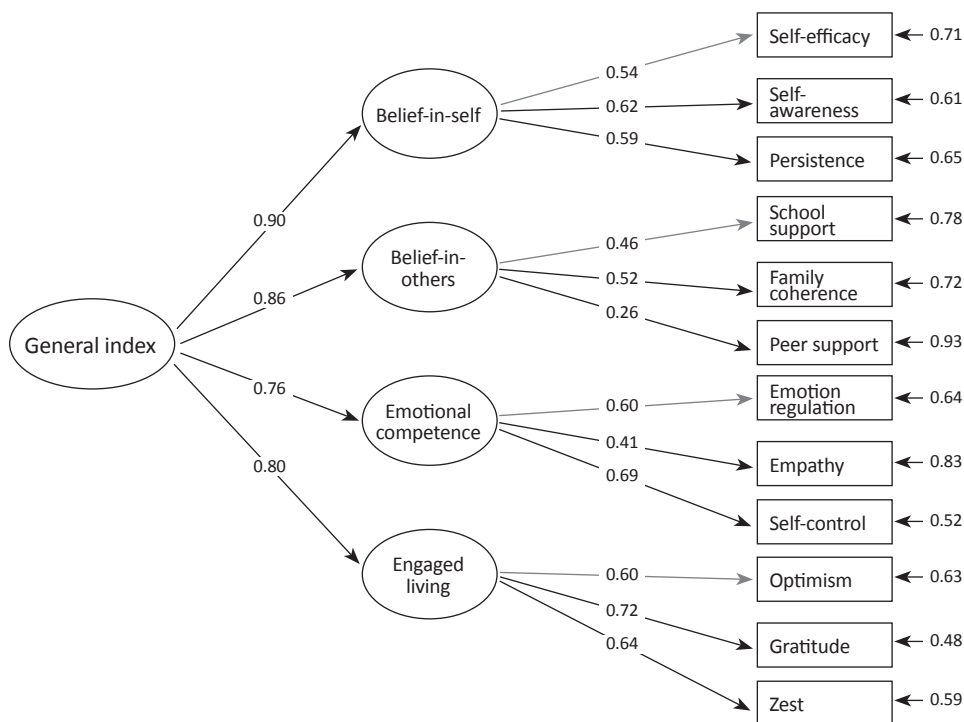
Figure 1. Social Emotional Health Survey-Secondary (SEHS-S) measurement model in a Lithuanian sample.

In the second stage, 12 sub-factors as measured variables (self-efficacy, self-awareness, persistence, school support, family coherence, peer support, emotion regulation, empathy, self-control, optimism, gratitude, zest) and four latent factors (belief-in-self, belief-in-others, emotional competence, engaged living) were employed. The degree of model fit was assessed using several criteria, the combination of which brought informed judgments about the overall adequacy of the model fit: χ^2 (DF = 50, N = 935) = 351.64, p>0.05; the standardized root-mean-square error of approximation (RMSEA) = 0.079; standardized root mean square residual (SRMR)=0.053; comparative fit index (CFI) = 0.94; normed fit index (NFI) = 0.95; and goodness of fit index (GFI) = 0.94.

Discussion

The data resulting from the SEHS-S taken by the 12–18 year-old Lithuanian adolescents presented in this study coincide with the results obtained by M. Furlong et al. (2014) and S. Lee et al. (2015), and with those from the previous research by the authors of this article (Petrulytė & Guogienė, 2018).

The data obtained only partially corresponded to the data acquired by T. Timofejeva, G. Svence, and A. Petrulyte (2016). The statistically significant difference in adolescents' social emotional health (SEHS-S) in terms of age and gender are in line with trajectories of adolescent development: a growing need for peer support and independence. The adolescent girls' emotional competence, self-confidence, and social relations are higher, whereas activity, sports, and other social competencies are better expressed in the group of boys (Cheng & Chan, 2004; Way & Greene, 2006; Mayer, Salovey, Caruso, & Sitarenios, 2001; Petrides, Frederickson, Sangareau, & Furnham, 2004; Petrides, Frederickson, Sangareau, & Furnham, 2006; Pukinskaitė, 2006; Strayer & Roberts, 2004; Katyal et al., 2005, Schulte-Rüther et al., 2008; Furlong, et al, 2014; Žukauskienė et al., 2011). These results allow us to conclude that girls tend to attach more importance to interpersonal relations and emotions in socialization than do boys.

The present research has not disclosed any statistically significant differences in adolescents' self-esteem according to age, but the self–esteem of adolescent boys was higher than that of adolescent girls. When analyzing adolescents' *self-esteem* in terms of gender and age, it can be noticed that a considerable number of research studies on gender- and age-related differences in self-esteem have been conducted over the last two decades (Feingold, 1994; Kling, Hyde, Showers, & Buswell, 1999; Orth, Robins, & Widaman, 2012; Orth, Trzesniewski, & Robins, 2010; Robins et al., 2002; Shaw, Liang, & Krause, 2010; Trzesniewski, Donnellan, & Robins, 2003; Twenge & Campbell, 2001; Orth, Robins, & Roberts, 2008; Mares, Leeuw, Scholte, & Engels, 2010; Kularski, 2010; Buhrmester, Blanton, & Swann, 2011), which have shown that men demonstrate higher levels of self-esteem than women. This gender-based difference appears in adolescence and continues throughout early and middle adulthood until it declines and even disappears in old age (Kling, et al., 1999; Robins, et al., 2002; Zeigler-Hill & Myers, 2012). Other authors claim that the self-esteem of girls and boys does not statistically differ (Galambos, Barker & Krahn, 2006; Tam, Lee, Har, & Pook, 2011; Orth, Maes, & Schmitt, 2015). Thus, slightly contradictory results are available.

The positive correlations between the dimensions of adolescents' social emotional health and *empathy*, as well as positive correlations with *self-esteem* revealed in the present research, are in line with the data of other studies on the development of *emotional competence of mental health, emotional intelligence,* and *self-esteem* and correlations of these dimensions (Petrides et al., 2006; Hoffman, 2000; Marsh, Parada, & Ayotte, 2004; Kradin, 2005; Carr et al., 2005; Abbas, 2011; Petrulytė & Guogienė, 2017, 2018).

The findings of the regression analysis and confirmatory factor analysis supported the use of the SEHS-S as a valid and reliable measurement instrument in mental health research with Lithuanian adolescents. The results replicated the findings reported in previous studies (Telef & Furlong, 2017). The results of the re-

gression analysis revealed the main factors predicting adolescent social emotional health: empathic concern, perspective-taking, self-esteem, and personal distress (negative). Similar results were obtained in other studies as well (Stern & Cassidy, 2017; Telef & Furlong, 2017).

Limitations and future research

The research presented in this article possesses some limitations**:** the authors of the methodology conducted their research with much larger groups of respondents (Furlong et al., 2014), whereas the sample size of the respondents is smaller in the present study. The age norms for the use of the SEHS-S survey have not been specified in Lithuania yet, and this is the initial stage of SEHS-S survey adaptation procedures in Lithuania. More precise support for the methodology would require a much wider survey of respondents from Lithuanian cities and regions, including not only general and secondary schools, but also other types of educational institutions; we need to produce exploratory factor analysis and collect information about adolescents' academic achievement, their observable school and family behavior, and their participation in class activities.

In our opinion, in future research, after all the validation and adaptation of the SEHS-S as a tool in Lithuania, it would be necessary to identify a risk group of adolescents with a low SEHS-S general index, as well as a group with potentially high scores. This could enable school counsellors to work on specific measures to facilitate improvement in the indicators in the group with a low SEHS-S general index, as well as to provide more opportunities for the development of the group with the high SEHS-S index. School psychologists will be able to apply the version adapted for Lithuania in monitoring the mental health of adolescents.

Conclusions

First, the *self–esteem* of adolescent boys was higher than that of adolescent girls, but the analysis of the adolescents' self-esteem did not reveal any statistically significant differences in terms of age (younger and senior adolescents).

Second, the correlation analysis allowed us to conclude that the *social emotional health* (SEHS-S) dispositions of adolescents positively correlate with *self-esteem: belief-in-self* ($r = 0.38$; $p \leq 0.01$); *belief-in-others* ($r = 0.29$; $p \leq 0.01$); *engaged living* ($r = 0.35$; $p \leq 0.01$); and social emotional health in general ($r = 0.39$, $p \leq 0.01$). The sub-scales of *empathic concern, perspective-taking,* and *empathy index* positively correlate with all the dispositions of SEHS-S ($p \leq 0.01$), whereas *fantasy* (IRI) and *personal distress* (IRI) demonstrated *positive correlation* only with the scale of *emotional competence* (SEHS-S) ($r = 0.22$; $p \leq 0.01$).

Third, the regression analysis of the research data allowed us to select the model where the impact of independent variables was most significant. The strongest social and emotional health predictors included empathic concern, self-esteem, and perspective-taking. Distress had a negative impact.

Fourth, the confirmatory factor analysis, conducted in two stages, confirmed the structural model of the Lithuanian version of the SEHS-S questionnaire. All the indices indicated a good model fit.

On the basis of the research data, we can state that developing adolescents' empathy and self-esteem, and promoting their social emotional health, can be achieve at the same time, thus creating the prerequisites for positive development of young people into adulthood.

References

Abbas, I.A. (2011). Relationship between Emotional Intelligence and Self Esteem: study in universities of Pakistan. *Arts and Design Studies*. *1,* 2011. Retrieved from https://www.academia.edu/1788454/A_Relationship_between_Emotional_Intelligence_and_Self_Esteem_study_in_universities_of_Pakistan

Batson, C.D. (2009). These Things Called Empathy: Eight Related but Distinct Phenomena. In J. Decety & W. Ickes (Eds.). *The Social Neuroscience of Empathy.* Cambridge: MIT press. https://doi.org/10.7551/mitpress/9780262012973.003.0002

Boyle, G.J., Saklofske, D.H., & Matthews, G. (2014). (Eds.), *Measures of personality and social psychological constructs.* Elsevier/Academic Press.

Brown, T.A. (2015). *Confirmatory Factor Analysis for Applied Research*, Second Edition (Methodology in the Social Sciences). The Guilford Press.

Buhrmester, M.D., Blanton, H., & Swann, W.B. Jr. (2011). Implicit self-esteem: Nature, measurement, and a new way forward. *Journal of Personality and Social Psychology,* 100, 365–385. https://doi.org/10.1037/a0021341

Carr, M.B., & Lutjemeier, J.A. (2005). The relations of facial affect recognition and empathy to delinquency in youth offenders. *Adolescence*, *40*(159), 601–19.

Cheng, S.T., & Chan, A.C.M. (2004). A Brief Version of the Geriatric Depression Scale for the Chinese. *Psychological Assessment*, 16, 182–186. https://doi.org/10.1037/1040-3590.16.2.182

Čekanavičius, V. (2009). *Statistika ir jos taikymai III* [Statistics and its applications]. Vilnius, TEV.

Davis, M.H. (1980). A Multidimensional Approach to Individual Differences in Empathy. *JSAS Catalog of Selected Documents in Psychology*, *10*, 85.

Decety, J., & Cowell, J.M. (2014). The Complex Relation Between Morality and Empathy. *Trends in Cognitive Sciences*, *18*(7), 337–339. https://doi.org/10.1016/j.tics.2014.04.008

Dutton, K.A., & Brown, J.D. (1997). Global self-esteem and specific self-views as determinants of people's reactions to success and failure. *Journal of Personality and Social Psychology, 73*(1), 139–148. https://doi.org/10.1037/0022-3514.73.1.139

Feingold, A. (1994). Gender differences in personality: A meta-analysis. *Psychological Bulletin,* 116*,* 429–456. https://doi.org/10.1037//0033-2909.116.3.429

Furlong, M.J., You, S., Renshaw, T.L., Smith, D.C., & O'Malley, M.D. (2014). Preliminary Development and Validation of the Social and Emotional Health Survey for Secondary Students. *Social Indicators Research*, 117, 1011–1032. https://doi.org/10.1007/s11205-013-0373-0

Furlong, M.J. (2015). *Social Emotional Health Survey System*. University of California, Santa Barbara Center for School-Based Youth Development Counselling, Clinical, and School Psychology Department. Retrieved from http://www.michaelfurlong.info/social-emotional-health.html

Galambos, N.L., Barker, E.T., & Krahn, H.J. (2006). Depression, self-esteem, and anger in emerging adulthood: Seven-year trajectories. *Developmental Psychology,* 42, 350–365. https://doi.org/10.1037/0012-1649.42.2.350

Hoffman, M.L. (2000). *Empathy and Moral Development: Implications for Caring and Justice.* New York University. Cambridge University Press. https://doi.org/10.1017/CBO9780511805851

Ito, A., Smith, D.C., You, S., Shimoda, Y., & Furlong, M.J. (2015). Validation and Utility of the Social Emotional Health Survey–Secondary for Japanese Students. *Contemporary School Psychology*, *19*, 243–252. https://doi.org/10.1007/s40688-015-0068-4

Kalpokienė, V. (2005). Paauglių raida ir psichikos sutrikimai Ego psichologijos požiūriu [An Attitude of Ego Psychology Towards Development and Mental Disorders of Adolescents]. *Psichologija*, *31*, 75–85. https://doi.org/10.15388/Psichol.2005..4337

Katyal, S., & Awasthi, E. (2005). Gender Differences in Emotional Intelligence Among Adolescents of Chandigarh. *Journal of Human Ecology*, *17,* 153–155. https://doi.org/10.1080/09709274.2005.11905771

Kling, K.C., Hyde, J.S., Showers, C.J., & Buswell, B.N. (1999). Gender differences in self-esteem: A meta-analysis. *Psychological Bulletin, 125,* 470-500. https://doi.org/10.1037/0033-2909.125.4.470

Kradin, R. (2005). The Roots of Empathy and Aggression in Analysis. *Journal of Analytical Psychology*. *50*(4)*,* 431–449. https://doi.org/10.1111/j.0021-8774.2005.00547.x

Kularski, C., (2010). Gender differences in self-esteem. Retrieved from https://www.academia.edu/1141988/Gender_Differences_in_Self_Esteem

Lee, S., You, S., & Furlong, M.J. (2015).Validation of the Social Emotional Health Survey for Korean School Students. *Child Indicators Research, 9*(1*),* 73-92. https://doi.org/10.1007/s12187-014-9294-y

Mares, S.H.W., De Leeuw, R.N.H., Scholte, R.H.J., & Engels, R.C.M.E. (2010). Facial attractiveness and self-esteem in adolescence. *Journal of Clinical Child & Adolescent Psychology, 39*(5), 627–637. https://doi.org/10.1080/15374416.2010.501292

Marsh, H.W., Parada, R.H., & Ayotte, V. (2004) A Multidimensional Perspective of Relations Between Self-Concept (Self-Description Questionnaire II) and Adolescent Mental Health (Youth Self-Report). *Psychological Assessment*, *16*(1), 27–41. https://doi.org/10.1037/1040-3590.16.1.27

Mayer, J.D., Salovey, P., Caruso, D.L., & Sitarenios, G. (2001). Emotional Intelligence as a Standard Intelligence. *Emotion, 1(3),* 232–42. https://doi.org/10.1037//1528-3542.1.3.232-242

Orth, U., Maes, J., & Schmitt, M. (2015). Self-Esteem Development Across the Life Span: A Longitudinal Study with a Large Sample from Germany. *Developmental Psychology*, *51*(2), 248-259. https://doi.org/10.1037/a0038481

Orth, U., Robins, R.W., & Roberts, B.W. (2008). Low self-esteem prospectively predicts depression in adolescence and young adulthood. *Journal of Personality and Social Psychology, 95*(3), 695–708. https://doi.org/10.1037/0022-3514.95.3.695

Orth, U., Robins, R.W., & Widaman, K.F. (2012). Life-span development of self-esteem and its effects on important life outcomes. *Journal of Personality and Social Psychology, 102,* 1271–1288. https://doi.org/10.1037/a0025558

Orth, U., Trzesniewski, K.H., & Robins, R.W. (2010). Self-esteem development from young adulthood to old age: A cohort-sequential longitudinal study. *Journal of Personality and Social Psychology, 98,* 645–658. https://doi.org/10.1037/a0018769

Park, N., & Peterson, Ch. (2008). Positive Psychology and Character Strengths: Application to Strengths-Based School Counselling. *Professional School Couseling*, *12*(2), 85–92. https://doi.org/10.5330/PSC.n.2010-12.85

Petrides, K.V., Frederickson, N., & Furnham, A. (2004). The Role of Trait Emotional Intelligence in Academic Performance and Deviant Behavior at School. *Personality and Individual Differences*, *36*, 277–293. https://doi.org/10.1016/S0191-8869(03)00084-9

Petrides, K.V., Frederickson, N., Sangareau, Y., & Furnham, A. (2006). Trait Emotional Intelligence and Children's Peer Relations at School. *Social Development*, *15*(3), 537–547. https://doi.org/10.1111/j.1467-9507.2006.00355.x

Petrulytė, A., & Guogienė, V. (2017). Paauglių psichologinės sveikatos stiprinimas, vykdant tiriamąją ir prevencinę veiklą mokykloje [Enhancement of Adolescents' Psychological Health Using Investigative and Preventive Activities at School]. *Pedagogika*, *126*(2), 99–114. https://doi.org/10.15823/p.2017.22

Petrulytė, A., & Guogienė, V. (2018). Adolescents' social emotional health and empathy in a Lithuanian sample. *International Journal of Psychology: Biopsychosocial Approach*, 22. https://doi.org/10.7220/2345-024X.22.4

Project Covitality (2018). UC Santa Barbara, International Center for School-Based Youth Development. Retrieved from https://www.project-covitality.info

Pukinskaitė, R. (2006). Empatijos ir psichosocialinio funkcionavimo ypatybės paauglystėje [Empathy and Psychosocial Functioning in Adolescence]. *Socialinis darbas*. 5(2), 55–62.

Pukinskaite, R., & Guogiene, V. (2010). Vyresniuju paaugliu pykcio ekspresijos ir kontroles bei psichosocialiniu sunkumu analize [Analysis of Anger Expression and Control and Psychosocial Problems in Older Adolescents]. *Visuomenes sveikata*, *2*(49), 104–113.

Ramanauskienė, T., Matulionienė, V., & Martinkienė, V. (2002) Paauglių depresiškumas ir savižudybės pavojus (lyginamoji analizė Klaipėdos, Kauno ir Šiaulių miestuose). [Depressive Symptoms and Threat of Suicide Among Adolescents (Comparative Analysis in Klaipėda, Kaunas and Šiauliai)]. *Medicina*, *38*(4), 393–397.

Robins, R.W., Trzesniewski, K.H., Tracy, J.L., Gosling, S.D., & Potter, J. (2002). Global self-esteem across the life span. *Psychology and Aging, 17,* 423–434. https://doi.org/10.1037/0882-7974.17.3.423

Rosenberg, M. (1989). *Society and the adolescent self-image*. Revised edition. Middletown, CT: Wesleyan University Press.

Rosenthal, S.A., Matthew Montoya, R., Ridings, L.E., Rieck, S.M., & Hooley, J.M. (2011). Further evidence of the Narcissistic Personality Inventory's validity problems: A meta-analytic investigation — Response to Miller, Maples, and Campbell (this issue). *Journal of Research in Personality*, *45,* 408–416. https://doi.org/10.1016/j.jrp.2011.06.004

Schutte, N.S., Malouff, J.M., Simunek, M., Hollander, S., McKenley, J., & Hollander, S. (2002) Characteristic emotional intelligence and emotional well-being. *Cognition and Emotion. 16*(2), 769–78. https://doi.org/10.1080/02699930143000482

Schulte-Rüther, M., Markowitsch, H.J., Shah, N.J., Fink, G.R., & Piefke, M. (2008). Gender differences in brain networks supporting empathy. *NeuroImage*, *42*(1), 393–403. https://doi.org/10.1016/j.neuroimage.2008.04.180

Shaw, B.A., Liang, J., & Krause, N. (2010). Age and race differences in the trajectories of self-esteem. *Psychology and Aging, 25*, 84–94. https://doi.org/10.1037/a0018242

Stern, J.A., & Cassidy, J. (2017). Empathy from infancy to adolescence: An attachment perspective on the development of individual differences. *Developmental Review*, 47, 1–22. https://doi.org/10.1016/j.dr.2017.09.002

Strayer, J., & Roberts, W. (2004). Children`s Anger, Emotional Expressiveness, and Empathy: Relations with Parents` Empathy, Emotional Expressiveness, and Parenting Practices. *Social development, 13*(2), 229–254. https://doi.org/10.1111/j.1467-9507.2004.000265.x

Tam, C.L., Lee, T.H., Har, W.M., & Pook, W.L. (2011). Perceived Social Support and Self-Esteem Towards Gender Roles: Contributing Factors in Adolescents. *Asian Social Science* 7(8), 49–58. https://doi.org/10.5539/ass.v7n8p49

Telef, B.B., & Furlong, M.J. (2017). Adaptation and Validation of the Social and Emotional Health Survey-Secondary into Turkish Culture. *International Journal of School and Educational Psychology, 5*(4), 255–265. https://doi.org/10.1080/21683603.2016.1234988

Timofejeva, T., Svence, G., & Petrulyte, A. (2016). Theoretical and Practical Study of the Concept of Social and Emotional Health by Michael J. Furlong and Applied to the Selection of Teenagers and Youth. *Problems of Psychology in the 21st Century*, *10* (2), 98–107.

Trzesniewski, K.H., Donnellan, M.B., & Robins, R.W. (2003). Stability of self-esteem across the life span. *Journal of Personality and Social Psychology, 84,* 205–220. https://doi.org/10.1037/0022-3514.84.1.205

Twenge, J.M., & Campbell, W.K. (2001). Age and birth cohort differences in self-esteem: A cross-temporal meta-analysis. *Personality and Social Psychology Review, 5,* 321–344. https://doi.org/10.1207/S15327957PSPR0504_3

Valantinas, A. (2009). Socialinis emocinis ugdymas. Kas tai? Kuo gali mums padėti? [Social Emotional Education: What is It? How can it Help Us?] *Švietimo problemos analizė*, 10(38). Retrieved from http://www.nmva.smm.lt/wp-content/uploads/2012/12/Socialinis-emocinisugdymas.-Kas-tai-Kuo-gali-mums-pad%C4%97ti-2009-gruodis.pdf

Way, N., & Greene, M. (2006). Trajectories of Perceived Friendship Quality during Adolescence: The Patterns and Contextual Predictors. *Journal of Research on Adolescence*, *16*(2), 293–320. https://doi.org/10.1111/j.1532-7795.2006.00133.x

You, S., Furlong, M., Felix, E., & O'Malley, M. (2015). Validation of the Social and Emotional Health Survey for Five Sociocultural Groups: Multigroup Invariance and Latent Mean Analyses. *Psychology in the Schools*, *52*(4), 349–362. https://doi.org/10.1002/pits.21828

Zeigler-Hill, V., & Myers, E.M. (2012). A review of gender differences in self-esteem. In S.P. McGeown (Ed.), *Psychology of gender differences*, Hauppauge, NY, US: Nova Science Publishers, 131–143.

Žukauskienė, R., Malinauskienė, O., & Erentaitė, R. (2011). Tėvų auklėjimo stiliaus ir emocinio intelekto sąsajos su vyresniųjų paauglių saviveiksmingumu bei saviverte pagal lytį [Effects of Parenting Styles and Emotional Intelligence on Self-Efficacy and Self-Esteem in Late Adolescence: Gender Differences]. *Psichologija*, *44,* 22–41. https://doi.org/10.15388/Psichol.2011.44.2550

The Wellbeing Toolkit Training Programme: A Useful Resource for Educational Psychology Services?

Helena Bunn*, Georgina Turner, Ellice Macro

Norfolk County Council, Educational Psychology and Specialist Support, Norwich, United Kingdom

*Corresponding author. E-mail Helena.bunn@norfolk.gov.uk

Background. Supporting pupils' social, emotional, and mental health (SEMH) development is a task that schools are expected to undertake in England, yet many staff members find it challenging due to their belief that they don't possess the necessary skills.

Objective. To evaluate a commercially available, training resource, The Wellbeing Toolkit, aimed at raising the skills of adults working with children in the SEMH area.

Design. The Toolkit was adapted and used as training material by a professional team comprised of educational psychologists, clinical psychologists, and specialist teachers, for schools within an eastern region in England. A mixed methodology was employed to evaluate the usefulness of the Toolkit as a training resource, as well as its perceived effectiveness in raising the skills of school professionals working within the SEMH area. Qualitative as well as quantitative data was gathered from the two groups participating in training, as school staff delegates, and as facilitators of training delivery. Descriptive statistics and content analysis were used for data analysis.

Results. The findings suggest evidence of improved skills and knowledge in the area of SEMH, with some specific impact on delegates' practice. Implications for practice are discussed.

Keywords:
Wellbeing
Toolkit, school,
training,
emotional
wellbeing,
mental health,
psychology

Introduction and Context

Social, emotional, and behavioural difficulties of children are a continuing and rising concern in the UK. In the local authority in which the study took place, mental health problems are estimated to affect 9.4% of children and young people, equating to 10,160 people aged 5–16 (Gummerson, 2015). This is not a far stretch from national statistics, whereby 9.6% of children aged 5–16 had a mental health condition a decade ago (Children's Commissioner for England, 2018), and 2.6% of the age 5–17 population received targeted interventions via Child and Adolescent Mental Health Services in 2017. Some believe that such figures represent only a minority of the 20–25% of children with an impairing mental health condition who are estimated to have contact with mental health services (Children's Commissioner for England, 2018), whether inside the school or with external services (Ford, Vostanis, Meltzer, & Goodman, 2007).

With health resources continuing to be squeezed, educational settings are increasingly expected to support the SEMH of pupils. Schools' consistent contact with their pupils implies that they could influence the pupils' mental health (DfE & DoH, 2017) and SEMH is increasingly seen as relevant to schools, as it has an unequivocal impact on learning (Hagell, Coleman, & Brooks, 2013).

The Special Educational Needs and Disability (SEND) Code of Practice: 0 to 25 years (DfE & DoH, 2015) introduced mental health, alongside earlier social emotional terminology, to the schools' agenda. More recently, "Transforming Children and Young People's Mental Health Provision: A Green Paper" (DfE & DoH, 2017) continued this trend, underlining that schools play a key role in SEMH early intervention and prevention work.

With current and emerging legislation that emphasizes the role of schools in promoting mental health and emotional wellbeing, it falls to schools to adopt strategies and approaches to support SEMH as well as to initiate pathways into mental health care. Yet while a number of non-statutory guidelines have been published for schools since, there is less evidence about which specific training programmes in the SEMH area are effective for school staff.

Literature Review

A literature search in the area of mental health training in schools was undertaken in 2017 as part of the current study. The search brought up relevant literature within three areas, explored below: training children for their own mental health, training staff to support child mental health, and training staff for their own wellbeing.

1. Training Children for Their Own Mental Health

The recent years appear to have brought a focus on student-led interventions whereby children are taught the skills to manage and support their own emotional wellbeing. Boniwell, Osinc, and Martinez (2015) looked into the effectiveness of 18 bi-weekly lessons in the promotion of happiness and wellbeing skills, delivered by teachers to eight groups of 20–30 students. They concluded that the sessions had a buffering effect for students, protecting them against known risk factors (such as decline in satisfaction with self or with friends) as well as increasing their positive

affect. Another study which investigated the impact of a positive psychology course on student wellbeing, depressive symptoms, and stress, stated that this may be an effective way to improve students' mental health (Goodmon, 2016). Interventions such as mindfulness courses are known to be effective in improving mental health, wellbeing, and academic attainment (Bennett & Dorjee, 2016).

2. Training Staff for Child Mental Health

In the task of embedding mental health support in schools, studies have shown the importance of children and young people having teacher support for both academic and social-emotional outcomes. Interestingly, the limited literature available in this area suggests that interventions led and implemented by school staff are as effective as those involving external professionals (Durlak, Weissberg, Dymnickj, Taylor, & Schellinger, 2011) and enable a more sustainable delivery. Jorm et al. (2010) found that after a mental health first aid training course, high school teachers showed increased knowledge and reduced stigma and changed some aspects of their behaviour with respect to mental health. Students also reported receiving more mental health information from their teachers.

Other types of programme have trained teachers in running a wellbeing curriculum to teach skills in mental health and wellbeing to their students. A meta-analysis of 213 school-based, universal social and emotional learning (SEL) programmes involving 270,034 kindergarten through high school students demonstrated that SEL participants had significantly improved social and emotional skills, attitudes, behaviour, and academic performance, when compared to those not receiving the intervention (Durlak et al., 2011). Other surveys on teachers' experiences of applying what they have learned in a training course have suggested increased empathy and confidence, and feeling better able to handle crises (*e.g.*, Jorm, Kitchener, Sawyer, Scales, & Cvetkovski, 2005). A study by Viera et al. (2014) seems to indicate that child development and general mental health topics in teacher training curricula should be part of a teacher's continuing education.

3. Training Staff for Staff Mental Health

Recent years have seen an emphasis on staff wellbeing as having an impact on outcomes for children and young people. A survey of 160 schools in Birmingham showed, for instance, that high levels of work-related stress in teachers can have a serious impact on their mental health and affect their ability to provide effective early intervention to support their students' emotional wellbeing, causing them to withdraw from student support or leave teaching altogether (Palmer, Connor, Newton, Patterson, & Birchwood, 2015). Teachers seem to feel that their emotional needs are often neglected (*e.g.*, Kidger, Gunnell, Biddle, Campbell, & Donovan, 2010) and this might suggest that schools should endorse whole school approaches to mental health, and encourage awareness in staff and students. A recent programme for educators, the Community Approach to Learning Mindfully (CALM) (Harris, Jennings, Katz, Abenavoli, Greenberg, 2016) has shown significant benefits for educators' social-emotional competence and wellbeing, prevention of stress-related problems, and support for classroom management.

Overall, the literature seems to suggest that schools can, with appropriate training, be involved in early identification and work with children and young people in the area of SEMH. There appear to be some school-based programmes to enhance the mental health and wellbeing of children and young people, through working with the children and the school staff, which have beneficial effects. In this climate, the Wellbeing Toolkit was produced, with the promise of adding to this body of resources. A local authority educational psychology service agreed to incorporate the Toolkit as part of their training offer and to evaluate its effectiveness by a variety of means. Description of the journey from design to delivery and evaluation of the Toolkit constitutes the body of this paper, which will hopefully add to the existing knowledge about SEMH programmes and will inform the reader in making a decision among mental health programmes available on the market.

The Wellbeing Toolkit

The key aims of the Toolkit are to allow professionals and staff who work with children and young people to:

- "Learn relevant therapeutic approaches and skills;
- "Feel confident that they have developed the appropriate skills and knowledge base to identify at-risk students;
- "Help prevent the escalation of any perceived difficulties and problems; and
- "Fulfil Inclusion (Section 4) of the National Curriculum (2014) — by enhancing the emotional wellbeing of students and providing particular support for those experiencing social, emotional and/or behavioural difficulties, lessons can be planned to ensure that there are no barriers to every pupil achieving" ("The Wellbeing Toolkit", n.d.).

Method

The Educational Psychology Service, which delivered the Toolkit, is a multi-disciplinary service consisting of a number of professionals, including educational psychologists, specialist teachers, and clinical psychologists. As SEMH is on the forefront of its service delivery, it contacted the Toolkit's publishers and, in agreement with them, proceeded to deliver the Toolkit to school staff, making any amendments that its trainers considered necessary. A total of 110 participants were exposed to one or more of the Toolkit sessions. Participants included staff from 36 schools. Exact demographics of the schools were not obtained; however, 46 participants attended from primary, 11 from infant, 20 from junior, 27 from secondary, and 6 from specialist, schools. The majority of the participants attended four sessions, whereas 11 participants attended nine or more sessions.

A multi-method approach for data gathering was used and included information related to:

1. Recording of changes each facilitator made to the initial Toolkit sessions;
2. Written records produced by each facilitator; they focused on their reflections on:

    a. Delegates' confidence about implementing information and strategies from the sessions;

    b. Delegates' overall response to information and activities;

    c. Usefulness of information; and

    d. Usefulness of skills learned.

3. Delegates' evaluations following each training session included:

Quantitative information on:

    a. Overall satisfaction;

    b. Most useful aspects of session;

    c. Aspects that could be improved upon;

    d. Overall presentation;

    e. Information transmitted;

    f. Skills practiced;

    g. Materials provided;

    h. Degree that expectations were met through the session;

Qualitative accounts focused on:

    a. Most useful aspects of session;

    b. Aspects that could be improved upon;

    c. Comments on how the session met expectations;

    d. What delegates need more of to assist understanding.

4. Delegates' views four months after the final session, captured via online survey and related to:

    i. Overall rating of the Toolkit;

    j. Skills acquired;

    k. Skills, strategies, or resources implemented in school following the programme;

    l. Skills that were not gained from the programme, but would have been useful to gain;

    m. Further support needed to implement learning in school;

    n. Three main strengths of the programme;

    o. Whether they would recommend the programme to other schools.

The evaluation methods were produced by the Educational Psychology Service working group. Schedules used for data gathering are available in the Appendix.

A total of 306 evaluation sheets were completed over the 19 sessions. Thirty-nine participants consented to take part in the follow-up survey, although only 10 completed it. Data collected was evaluated using descriptive statistics and content analysis (Krippendorff, 2013).

Results

The findings are presented within the four areas relevant for the Toolkit delivery and presentation: (1) session changes the facilitators made; (2) delegates' immediate evaluation of the sessions; (3) delegates' follow-up survey; and (4) facilitators' reflections.

1. *Session Changes the Facilitators Made*

Out of the 19 sessions delivered, five sessions (26%) incurred no changes to the presentations; slides were added to presentations for eight sessions (42%) and were removed from presentations for six sessions (32%). Figure 1 is a visual representation of the types and frequency of slide changes.
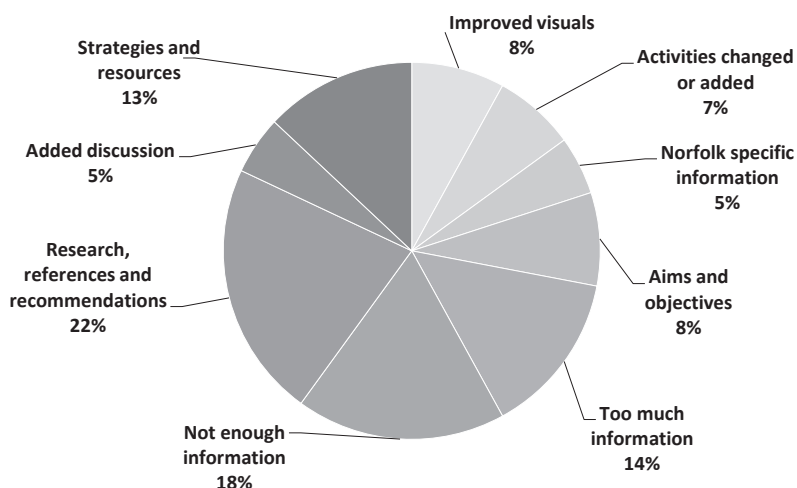
Figure 1. Percentage of the types of slide changes

2. *Delegates' Immediate Evaluations*

Delegates were asked to comment on whether each session met their expectations and their overall satisfaction with the session. With regards to all the sessions delivered, 95.75% of delegates found the materials offered either very useful or useful; 98.95% found the presentation of information to be very useful or useful; and 73.5% considered the skills they practiced during the sessions either very useful or useful. Finally, 97.7% found the information transmitted during the sessions very useful or useful. Overall, 78.1% of delegates felt that the sessions met their expectations and 19.6% felt that the sessions partially met expectations.

Delegates were asked to rate their overall satisfaction with the sessions, with the result that 38.9% said they were very satisfied with the sessions; 58.2% felt they were satisfied, and 1.6% were dissatisfied. Figure 2 is a visual representation of the prominence of themes relating to aspects of the session delegates found useful.

3. *Qualitative Analysis*

a) *Most useful aspects of the session*

Further content analysis of the qualitative data suggested that themes such as *strategies*, *information received,* and *resources* shared in the sessions were most useful for delegates, alongside some less prominent themes such as *discussion*, *signposting to other services*, *assessment tools,* and *making referrals. Strategies* related to "how to involve families", "developing a school policy", "practical activities to use in class", and "a reminder of good practice" were the most useful to apply in schools. *Infor-*

mation received was also a prominent theme across all 19 sessions. Here *statistics*, *government guidelines*, *theory behind practice,* and *background information* relating to the tools, strategies, and models discussed were most useful for the delegates to apply in schools and enhance their learning. *Resources* distributed within the sessions was also a prominent theme across most sessions, with delegates valuing resources in the form of "handouts", "online support/info", and "new info, books, services available". Delegates also valued the *discussions* in the sessions, as they felt that these allowed "sharing with other professionals", "sharing best practices", and "great self-reflection and thoughts on how this can impact our children". Advice about how and when to *make referrals*, *signposting* to other services, and receiving information relating to the use of *assessment tools* in schools were also clear themes in the feedback for particular sessions.
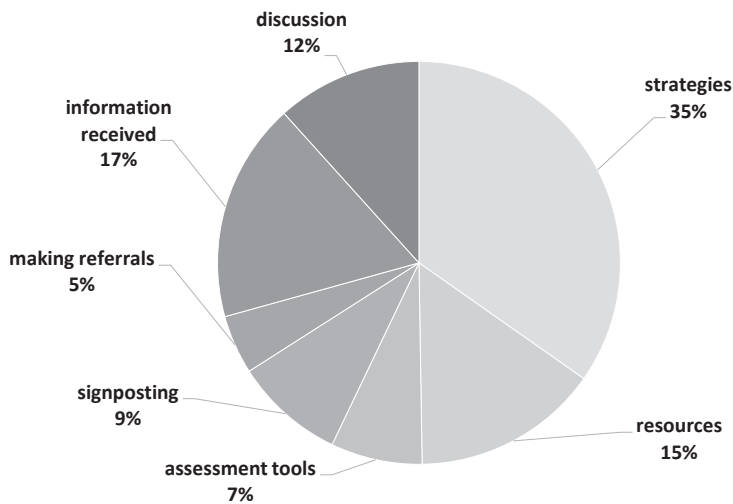
Figure 2. Prominence of themes relating to aspects of the session that delegates found useful

b) *Aspects that could be improved upon*

Delegates evaluated how the sessions could be improved upon. The following themes were most prominent: *the venue or facilitator, more time,* and *more practical strategies and resources*. Figure 3 offers a visual representation of the themes identified. Issues relating to the practicalities of the session, such as the *venue or facilitator,* accounted for 34% of the feedback received; however, these reflections relate to environmental and technical hazards (e.g. too cold in the room, technology not functional). Delegates felt that *more time* was required for each session, as there was "so much information to take in in a short period of time" and "so much interesting stuff – need more time". More *practical strategies and resources* was an equally prevalent theme. Delegates suggested that it "would have been useful to have a few more direct links and practical applications in school" and would be beneficial to have "more time spent on practical tools". Less dominant themes included *repetitive or outdated information* and *more detailed information*. A few delegates found in

one instance that there was "out-of-date data – 10 years old", which was "repetitive on quite a few slides". Comments relating to *more detailed information* correspond with comments relating to the lack of time available in each session and hopes for "greater explanation/focus on general application". Many fewer participants reflected that *case studies* (6%) and *opportunities for discussion* (5%) would have enhanced the sessions; 3% of delegates felt that *no improvements were needed*.
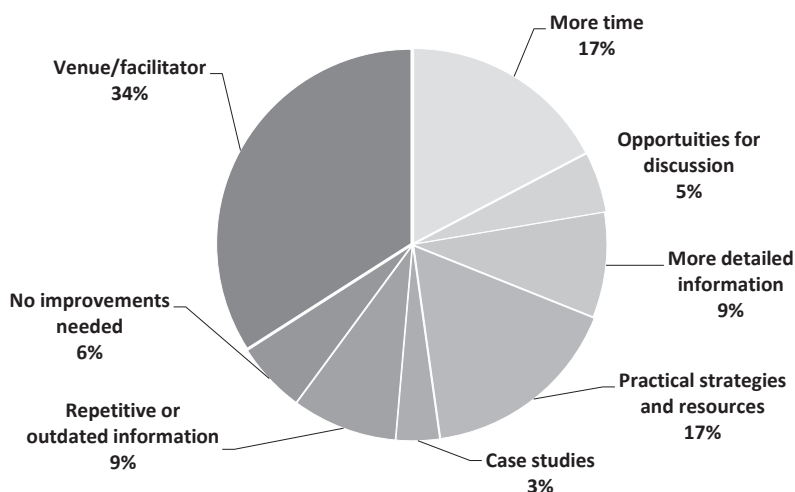

Figure 3. Prominence of themes relating to aspects of the session that could be improved upon

c) *How the sessions met expectations*

The participants' responses on how the sessions met expectations generated a number of themes, visually represented in Figure 4. They found *useful information* throughout the sessions, as 19% of comments related to "very interesting information" and "very positive session with info that can be easily distributed and made use of". However, in equal measure (19%), some delegates felt that *information was repeated* or not pitched at the right level with regards to the delegate's previous knowledge or level of training: "no new information or assessments learned from this session" and "very similar to previous training I have attended". The *presentation*, in terms of style and delivery, was positively commented upon by 15% of responses, with comments including "presenter's knowledge and sharing of it and proactive approach to solving problems" and "great presentation, clear and concise with very helpful content". Thirteen percent of participants said that they would expect *more resources and strategies* from the sessions, with suggestions such as "probably more practical ideas and examples" and "I was hoping for websites to assist my learning". Other themes included *useful resources* (10%), *more activities or discussion* (10%), and *more time* (10%), common throughout the evaluations. Finally, 4% of comments related to the audience, in terms of information being more suited to a specific age group, or regarding the practicalities of getting staff to implement their learning.
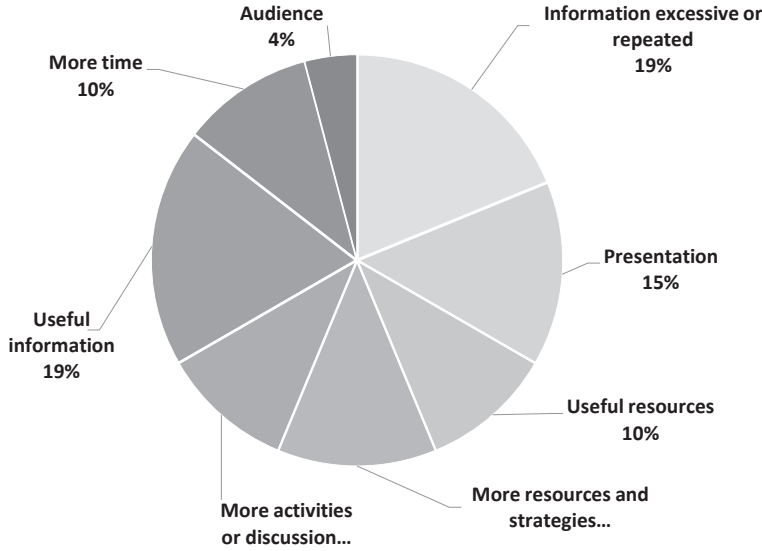
Figure 4. Prominence of themes relating to how sessions met delegates' expectations

d) *What more to assist understanding?*

An emerging theme was that *more examples and case studies* would assist the train-ees' understanding. They felt that "more time spent on specific examples/case stud-ies so we could see them in action", "more practical solutions", and "more strate-gies that could be used in the classroom" would assist their understanding of the session. *Further training* was a second prominent theme (represented by 20% of responses) in the form of "possible INSET ([INSErviceTraining] INSErviceTrain-ing) day" or "more courses targeted towards TA's" and "follow-up sessions will be of great help". Delegates also identified needing *more practice* to assist their un-derstanding of what they had learned during the sessions, as this would give them experience, and "simply to practice some more of the skills and activities". *Time*
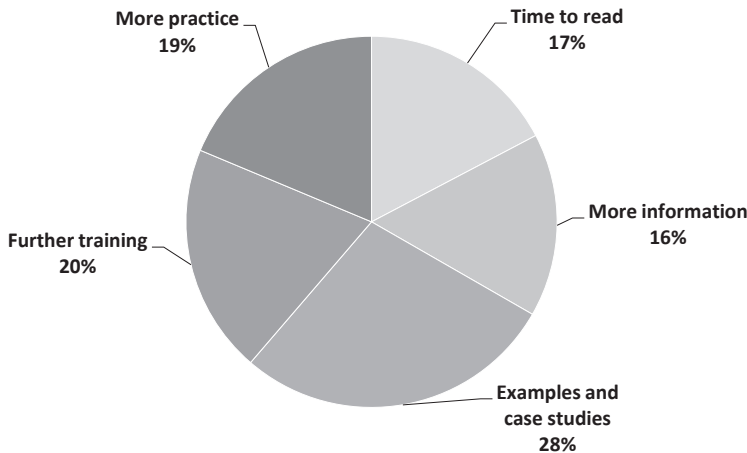
Figure 5. Themes showing what delegates need more of to assist understanding

for further reading to "digest all of the full size information (in my own time)" and "read suggested materials" was another theme identified in 17% of the responses. *More information* on particular topics, get "more in-depth knowledge", or "further research" was the last theme identified.

e) *Any other comments*

This contained generally positive comments, with delegates offering their thanks and praise relating to the usefulness of the Toolkit sessions. Comments included, "Good session, lots of areas covered, just needed more time", "Will be good for other schools", and "Plenty of pointers to good websites". Other comments reflected the criticisms highlighted in other questions, such as "lots of listening – will need to spend lots of time looking these up (skills) – time is precious", "having some scenarios of problems", and "useful information, allowing for time constraints may have been useful to do some more practical tasks (but I understand why!)".

4. *Delegates' Follow-Up Survey*

Although there was a reduced response rate (25.6%) to the online follow-up survey, some information can still be usefully drawn. Participants belonged to primary (70%), secondary (10%), and specialist schools (20%).

A largely positive appreciation of the Toolkit was expressed, with 20% rating it as "very good" and 60% as "good". The high positive appreciation straight after the sessions was moderated four months later. Eighty percent of delegates said they would recommend that the programme be delivered to schools locally and nationally.

The answers to "What skills did you acquire following the sessions you attended?" largely related to "ideas to use with groups of children and staff", "knowledge about assessment and resources available", and "great links to further reading and research". The participants appreciated the practical information and resources from the sessions and these responses correlate with themes identified from their responses to "aspects of the sessions you found useful" in the previous section. This is further supported by responses to the survey question: "Did you implement any skills strategies or resources in your school following the programme?" Participants implemented a wide range of skills, strategies, and resources that they had gained from the programme, including art therapy skills, strategies around supporting children with SEMH difficulties, facts and figures on mental health in children, and "adapting our supervision system, and will take into account the training we had as part of this plan going forward".

The participants indicated in retrospect what skills they felt would have been useful to gain from the Toolkit. Their answers were largely similar to the post-session evaluation forms, highlighting themes related to: deepening understanding through receiving *more information,* "some of the issues such as family breakdown … I would have liked to look at in further depth"; the opportunity to *practice skills,* or *further training*, e.g., "Lego training". Similarly, the answers to "What further support would you need in order to implement your learning?" included *engagement of other agencies*, which links to delegates' appreciation for support in understanding how to *make referrals* and also where to refer children. One participant

considers the need for "periodic workshops to keep updated", which mirrors post-session feedback related to further *training*. Other delegates offered more practical suggestions: "to have online access to the kit" and "it would be nice to have more time for planning sessions with children…". Others expressed the feeling that no further support is required.

The main strengths of the Toolkit described were that it was "well planned", had "up-to-date facts and figures", "enthusiastic and knowledgeable trainers", "very good presenters", "short sessions", "supporting materials", and was "accessible to those with basic understanding".

5. *Facilitators' Reflections*

The last aspect of the Toolkit's evaluation is the facilitators' written reflections, produced shortly after the session. This data was gathered in terms of *confidence and knowledge* and *practical strategies/suggestions*. The median for all features measured was 4 (on a 5-point Likert scale, where 5 is best). The features included delegates' overall satisfaction, usefulness of information, and usefulness of skills learned. This seems to complement what the delegates expressed.

Confidence and Knowledge of Delegates

Facilitators' responses related to the *confidence and knowledge* that participants gained from the sessions are visually represented in Figure 6. One of the most prominent themes was the *usefulness of the information* given to delegates (24%). Facilitators felt that the information improved delegates' confidence by increasing their knowledge, added to their understanding, and gave them evidence on which to base their practice. Twenty-three percent of facilitators' reflections related to *strategies*. Facilitators referred to strategies in the general sense, in terms of whole school approaches, such as "I think it helps set the tone of what we are encouraging staff to do, which is to become good observers, active listeners, … and to know
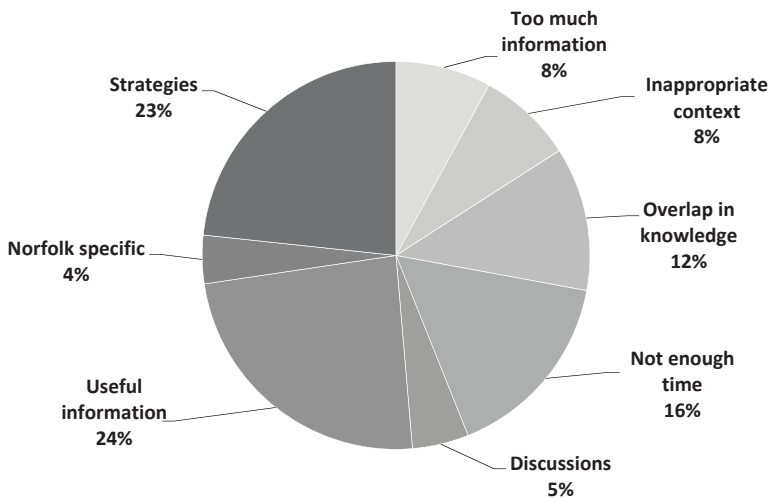
Figure 6. Confidence and knowledge gained by delegates, as perceived by facilitators

when and where to refer [the student to another practitioner]"; others were more specific, for example, "We discussed strategies such as active listening and how to do it … and most staff understood this and seemed confident about its usage". The facilitators also felt that there was *not enough time* (16%) to give the required level of information and skill development to allow for participants to feel confident in using some of the information. An *overlap in delegates' knowledge* (12%) was identified by some, who felt that "some parts of the presentation had been seen in previous sessions of the programme" and "there was lots of material in the session which participants were familiar with".

Practical Strategies/Suggestions

The facilitators were asked to reflect on the practical strategies provided during their session. Their reflections were split into two areas, related to either the *type of strategies* delivered or their *reflections about the delivery and delegates' understanding of the strategies* (see Figures 7 and 8).

The strategies given to delegates were related to either *practical strategies* (35%), *communication* (23%), *resources and signposting* (18%), *whole school strategies* (18%), or *referrals* (6%). *Practical strategies* relates to intervention, assessment, or activities that can be used in schools. *Communication* was another prominent theme and an important strategy for schools to adopt to develop relationships and enhance skills in working with not only children, but also with other adults. Strategies relating to *resources and signposting* were commonly referred to: "I also mentioned contacting their Duty Officer at CAMHS [Child and Adolescent Mental Health Services] for enquiries…". Whole school strategies were also well represented: "There were some Heads [of schools] in the audience, so after explaining risk and resilience factors, I included an activity on how a school could develop protective factors". Finally, strategies relating to *referrals* were discussed in one particular session: "One of the things I focused on was how to make a good referral to a Tier 2…".
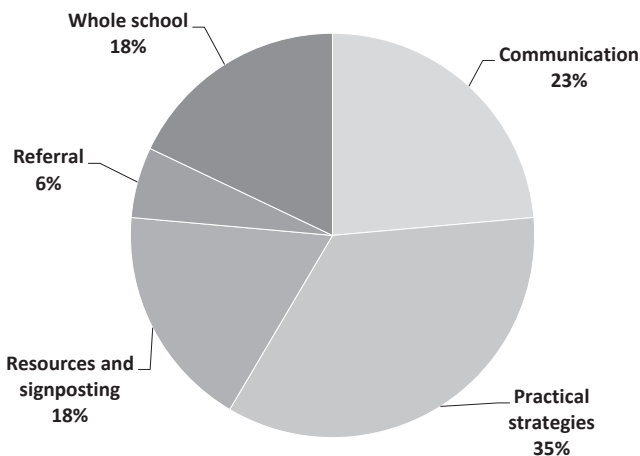
Figure 7. Types of strategies delivered, as perceived by facilitators
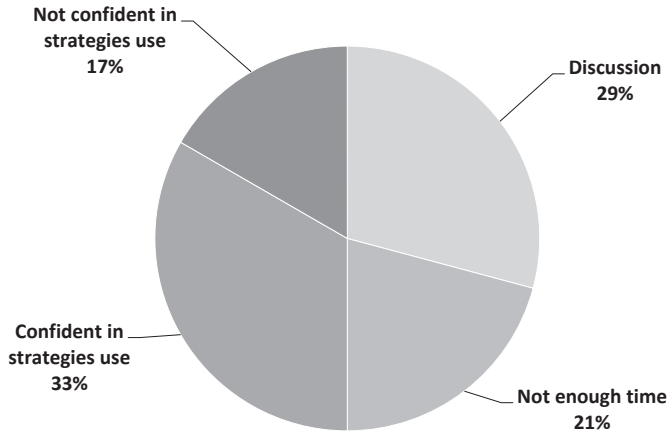
Figure 8. Reflections about delivery and delegates' understanding of strategies

Additionally, 33% of the facilitators felt that the strategies they presented were useful to the delegates; however, 17% of them were less confident. One facilitator reflected, "I don't think this session allowed time for useful practice or understanding of any of the practical strategies"; this is echoed in the delegates' evaluations, where they said they needed more opportunities to practice their skills. *Not enough time* was a theme reflected upon by facilitators, with some commenting, "This session felt like it was trying to do too many things in too short a period". Last but certainly not least, *discussion* was a prominent theme throughout facilitators' reflections, as represented by comments such as "… there were good ideas generated from the discussion points made, indicating a good grasp of the importance of whole school development". Discussions were well received by participants, evident in their post-session evaluation forms, and the facilitators clearly found this element of the session to be equally useful, not only to demonstrate understanding, but also to learn from colleagues and share experiences.

Conclusions

The Toolkit is a significant SEMH training delivery resource, targeted to raise the skills of adults working with children and young people. The current study seems to suggest that, although the delivery of the training requires some significant resources from any specific service, its effectiveness may compensate for the professional effort related to time required for session attendance and delivery.

Both the facilitators and delegates involved in this project identified some significant strengths in the Toolkit training, related to school staff becoming more confident and knowledgeable in the area of SEMH, both issues having been previously identified in other studies as areas of weakness in school staff. It appears that the school staff participating in this study became more knowledgeable about other provisions out there and how to refer specific cases to Child and Adolescent Mental Health Services, if necessary. Even four months after the training, at least a quarter of the delegates still benefited from the teaching provided within the Toolkit ses-

sions. Apart from matters related to environment and presentation format, it looks like substantive improvements in the delivery of the SEMH training could be related to organising follow-up workshops and discussions, and access to the Toolkit.

Overall, the study is suggestive that the Toolkit has been effective in providing theoretical and practical skills to the school staff in their work in the SEMH area. The Toolkit is broadly universal in its application, making it attractive as a training tool for mainstream schools. As such, the authors believe that educators in mainstream schools could undertake training in the Toolkit, which is an efficient way of raising the skills of school staff in working with SEMH students. The findings have been disseminated to a couple of regional and national conferences in the UK, and there were a number of educators and educational psychologists who enquired further about the Toolkit, with the view of using it in education.

An identified limitation of the study is that a relatively high proportion of school staff who initially consented to participation did not complete the follow up survey. This may have biased the survey results, favouring those participants who had strong opinions about the Toolkit. Additionally, it is acknowledged that, although the training was delivered to a diverse school staff population, it had, nonetheless, captured only those who were interested in taking part in the training. This means, yet again, that school staff attending the training might have already been attracted to such a programme, hence more likely to implement the training.

This said, it is likely that the Toolkit training was indeed effective, and that its effectiveness can be attributed, at least partly, to the materials taught as well as those delivering the training. It is possible that the educational psychology practitioners have the unique skills of combining SEMH knowledge with educational setting knowledge to effectively train school practitioners in identifying and dealing with low-level SEMH difficulties in schools.

Acknowledgments

References

Bennett, K. & Dorjee, D. (2016). The impact of a Mindfulness-Based Stress Reduction Course (MBSR) on well-being and academic attainment of sixth-form students. *Mindfulness, 7*(1), 105–114. https://doi.org/10.1007/s12671-015-0430-7

Boniwellab, I., Osinc, E.N., & Martinez, C. (2015). Teaching happiness at school: Non-randomised controlled mixed-methods feasibility study on the effectiveness of Personal Well-Being Lessons. *The Journal of Positive Psychology: Dedicated to furthering research and promoting good practice, 11*(1), 85–98. https://doi.org/10.1080/17439760.2015.1025422

Children's Commissioner for England (2018). Children's mental health briefing. A briefing by the Office of the Children's Commissioner for England. Retrieved from https://www.childrenscommissioner.gov.uk/wp-content/uploads/2019/02/childrens-mental-health-briefing-nov-2018.pdf

DfE & DoH (Department for Education & Department of Health) (2017). Transforming children and young people's mental health provision: A Green Paper. Retrieved from https://www.gov.uk/government/consultations/transforming-children-and-young-peoples-mental-health-provision-a-green-paper

DfE & DoH (Department for Education & Department of Health) (2015). Special educational needs and disability code of practice: 0 to 25 years. Statutory guidance for organisations which work with and support children and young people who have special educational needs or disabilities. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/398815/SEND_Code_of_Practice_January_2015.pdf

Durlak, J.A., Weissberg, R.P., Dymnickj, A.B., Taylor, R.D., & Schellinger, K.B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*(1), 405–432. https://doi.org/10.1111/j.1467-8624.2010.01564.x

Ford, T., Vostanis, P., Meltzer, H., & Goodman, R. (2007). Psychiatric disorder among British children looked after by local authorities: Comparison with children living in private households. *The British Journal of Psychiatry: The Journal of Mental Science, 190*, 319–325. https://doi.org/10.1192/bjp.bp.106.025023

Goodmon, L.B., Middleditch, A.M, Childs, B., & Pietrasiuk, S.E. (2016). Positive psychology course and its relationship to well-being, depression, and stress. *Teaching of Psychology, 43*(3), 232–237. https://doi.org/10.1177/0098628316649482

Gummerson, C (2015, July). *Health profile of children and young people in Norfolk. Key health-related issues for people aged 0–19 years.* Retrieved from: http://www.norfolkinsight.org.uk/resource/view?resourceId=1106

Hagell A., Coleman, J., & Brooks, L. (2013). Key Data on Adolescence 2013. The latest information and statistics about young people today. Retrieved from http://www.ayph.org.uk/publications/457_AYPH_KeyData2013_WebVersion.pdf

Harris, A., Jennings, P., Katz. D., Abenavoli, R., & Greenberg, M. (2016). Promoting stress management and wellbeing in educators: Feasibility and efficacy of a school-based yoga and mindfulness intervention. *Mindfulness, 7*(1), 143–154. https://doi.org/10.1007/s12671-015-0451-2

Jorm, F., Kitchener, B., & Mugford, S. (2005). Experiences in applying skills learned in a mental health first aid training course: A qualitative study of participants' stories. *BMC Psychiatry.* https://doi.org/10.1186/1471-244X-5-43

Jorm, A., Kitchener, B., Sawyer, M., Scales, H., & Cvetkovski, S. (2010). Mental health first aid training for high school teachers: A cluster randomized trial. *BMC Psychiatry, 10.* https://doi.org/10.1186/1471-244X-10-51

Kidger, J., Gunnell, D., Biddle, L., Campbell, R., & Donovan, J. (2009). Part and parcel of teaching? Secondary school staff's views on supporting student emotional health and well-being. *British Educational Research Journal, 36*(6), 919–935. https://doi.org/10.1080/01411920903249308

Krippendorff, K (2013). Content Analysis: An Introduction to Its Methodology. 3rd Edition. Thousand Oaks: SAGE Publications.

Kutcher, S., Wei, Y., McLuckie, A., & Bullock, L. (2013). Educator mental health literacy: A programme evaluation of the teacher training education on the mental health & high school curriculum guide. *Advances in School Mental Health Provision, 6*(2), 83–93. https://doi.org/10.1080/1754730X.2013.784615

Office for National Statistics (2018). Counts and percentages of adults with a mental illness, by various breakdowns, May–July 2012 to 2017, UK. Retrieved from https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/mentalhealth/datalist on 18.3.2018

Palmer, C., Connor, C., Newton, B., Patterson, P., & Birchwood, M. (2015). Early intervention and identification strategies for young people at risk of developing mental health issues:

Working in partnership with schools in Birmingham, UK. *Early Intervention in Psychiatry.* https://doi.org/10.1111/eip.12264

Reinke, W. M., Herman, K. C., & Sprick, R. (2011). *Motivational interviewing for effective classroom management: The classroom check-up*. New York: Guilford Press.

The Wellbeing Toolkit (n.d.). Retrieved from https://nurturegroups.org/news/wellbeing-toolkit-0

Vieira, M.A., Gadelha A.A., Moriyama, T.S., Bressan, R.A., & Bordin, I.A. (2014). Evaluating the effectiveness of a training program that builds teachers' capability to identify and appropriately refer middle and high school students with mental health problems in Brazil: An exploratory study. *BMC Public Health, 14.* https://doi.org/10.1186/1471-2458-14-210

Vostanis, P., Humphrey, N., Fitzgerald, N., Deighton, J. & Wolpert, M. (2013). How do schools promote emotional wellbeing among their pupils? Findings from a national scoping survey of mental health provision in English schools. *Child and Adolescent Mental Health*, *18*(3), 151–157. https://doi.org/10.1111/j.1475-3588.2012.00677.x

Appendix

Pro-forma for gathering specific data relevant to this study

1. *Amendments to Wellbeing Toolkit slides*

Topic title:

Amendments to slides	Comment	Slide number/s
Removing slide/s (give reason)		
Inserting new slide/s (give reason)		
Reducing written information		
Adding written information		
Removing out-of-date research		
Adding up-to-date research		
Removing photographs		
Adding photographs		
Removing tables/graphs		
Adding tables/graphs		
Removing drawings		
Adding drawings		
Removing websites		
Adding websites		
Removing references		
Adding references		
Removing activities		
Adding activities		

Any other points

2. Delegates' evaluations

Educational Psychology continually seeks to review and enhance the quality of its training delivery. The purpose of this questionnaire is to enable us to use your opinion when reviewing the training. Additionally, Educational Psychology is also involved in evaluating the Wellbeing Toolkit and suggesting improvements to be implemented at national level.

Your responses are highly valued and the questionnaire should only take a few minutes to complete. No individual responses will be identified and your contribution will be aggregated with others. The aggregated responses will be analysed, alongside other data from surveys and our own evaluation.

1. Overall, how satisfied were you with this session (tick the response which best describes your opinion)?

☐   Very satisfied   ☐   Satisfied   ☐   Dissatisfied   ☐   Very dissatisfied

2.   Please comment on up to three aspects of the session which you found useful:

3.   Please comment on up to three aspects of the session which could be improved:

4.   Please rate each of the following:

Overall Presentation:

☐ Very useful   ☐ Useful   ☐ Not so useful   ☐ Not at all useful

Information transmitted in the session:

☐ Very useful   ☐ Useful   ☐ Not so useful   ☐ Not at all useful

Skills practiced in the session:

☐ Very useful   ☐ Useful   ☐ Not so useful   ☐ Not at all useful

Materials provided:

☐ Very useful   ☐ Useful   ☐ Not so useful   ☐ Not at all useful

Other (please specify): _____

☐ Very useful   ☐ Useful   ☐ Not so useful   ☐ Not at all useful

5. Did the session meet your expectations?

☐ Yes   ☐ Partially   ☐ No

Any comments on this?

6. What do you feel you need more of to assist you in your understanding of the area?

7. Any other comments?

Consent and Permissions

I agree for the information I provided in this form to be used in the Wellbeing Toolkit evaluation study.

☐ Yes   ☐ No

I wish to take part in a future survey.

☐ Yes   ☐ No

If *Yes*, please provide the following:

Print Name: _____

Email address: _____

We will only use this information to invite you to complete a survey at the end of your training.

I understand that all the information I provide will be anonymised. I can withdraw my agreement to take part in the study at any time and I do not have to give a reason. If I want to withdraw I will email Helena Bunn (information provided) to ask not to be involved.

I agree for this information, as part of the study, to be used in future events, such as presentations or publications.

☐ Yes   ☐ No

Your school: ☐ Infant   ☐ Junior   ☐ Primary   ☐ High

☐ Other (please specify):_____

Your role: ☐ Teaching Assistant/LSA   ☐ Teacher   ☐ SENCo   ☐ Pastoral Manager

☐ Other (please specify):_____

Date _____

Thank you for your time and consideration!
The team

3. Facilitator's reflections

Trainer's evaluation

Name of the session: _____

Please provide in no more than a page your reflections on how you evaluate the session, in terms of:

1. How **confident** you think the participants feel about implementing some of the information and ideas of the session to make changes in the way they/their setting supports children and young people's mental health for your specific area of focus? (state what this was)

2. How confident you think the participants feel about implementing some of your **practical strategies/suggestions** to be able to support children and young people's mental health for your specific area of focus? (state what this was)

Please rate the session (on a scale from 1 to 5, where 5 is best) in terms of:
How well the session went overall in terms of **delegates' response to information and activities**:

Usefulness   ☐   of information:

Usefulness of skills learned (where   ☐   applicable):

Please email the document to the research coordinator.

By completing and sending this document it is assumed that you give consent to take part as a participant in the study evaluating the Wellbeing Toolkit. All the information will be anonymised and you can withdraw your agreement to take part in the study without giving a reason. If you want to withdraw after submitting this document please email Helena to ask not to be involved.
This information, as part of the study, will be used alongside other information from the school staff to produce a final analysis. The findings will be shared with the national partners and might be used in future events, such as presentations or publications.

Thank you.

Panel of Referees

We express our sincere gratitude to our reviewers who contributed to the quality of our publications in 2019.

Olga V. Almazova, Lomonosov Moscow State University, Russia

Christopher Arnold, Tavistock and Portman NHS Trust, UK

Tanja Azul, Universidad del Norte, Colombia

Anastasia K. Belolutskaya, Moscow City Teachers' Training University, Russia

Ekaterina V. Bitutskaya, Lomonosov Moscow State University, Russia

Irina V. Blinnikova, Lomonosov Moscow State University, Russia

Natalia V. Bogacheva, I.M. Sechenov First Moscow State Medical University, Russia

Marc Brysbaert, Ghent University, Belgium

Daria A. Bukhalenkova, Lomonosov Moscow State University, Russia

Pavel N. Ermakov, Southern Federal University, Russia

Anna Fam, National Research University Higher School of Economics, Russia

Michael Furlong, University of California, USA

Tamara Gordeeva, Lomonosov Moscow State University, Russia

Elena L. Grigorenko, University of Houston, USA

Sophie Havigherst, University of Oslo, Norwey

Paul Ben Ishai, Ariel University, Israel

Andrey A. Kiselnikov, Lomonosov Moscow State University, Russia

Svetlana N. Kostromina, St. Petersburg State University, Russia

Sergey V. Leonov, Lomonosov Moscow State University, Russia

Anna V. Leybina, Lomonosov Moscow State University, Russia

Martin F. Linch, University of Rochester, USA

Liudmila Liutsko, Instituto de Salud Global de Barcelona, Spain

Andrey V. Lovakov, National Research University Higher School of Economics, Russia

Marcela Mansur-Alves, Federal University of Minas Gerais, Brazil

Varvara Morosanova, Psychological Institute of Russian Academy of Education, Russia