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The first number of *The New Educational Review* in 2018 is the fifty-first issue of our journal since the start of its foundation in 2003. In this issue there are mainly papers from: the Czech Republic, Indonesia, Iran, Jordan, Malaysia, Pakistan, Poland, the Slovak Republic, Serbia, Slovenia, Taiwan, and Thailand, because our journal is open for presentation of scientific papers from all over the world.

In the present issue the International Editors’ Board have proposed the following subject sessions: General Didactics, Social Pedagogy, Pedeutology, Special Pedagogy, and Chosen Aspects of Psychology.

In the subject session “General Didactics” we publish ten articles. The research presented by Leo Agung Sutimin and his co-workers develops a deconstructive learning history model to promote the Higher Order Thinking Skill of university students. The objective of the study by Nazarudin Ali Basyah and his co-workers is to investigate whether the use of the Jigsaw model in the teaching-learning of Economics could improve the results of Senior High School Students in Banda Aceh, Indonesia. Surintorn Satiansirwiwat, together with his co-workers, describes the research on academic achievement and the effects of attitudes towards agriculture on teaching and learning through the integration of agricultural knowledge with the Thai language, mathematics, and science subjects of the first grade of elementary school in Thailand. The purpose of the study by Cheng-Chang Tsai is to compare traditional English flashcards with the vocabulary learning method of Augmented Reality to find which English vocabulary learning is more efficient for elementary school students. In their article, Faisal Azeem Abbassi and his co-workers suggest the best model to predict students’ academic performance at university level. The text by Lucyna Kopciewicz and Hussein Bougsiaa presents and discusses results of empirical research on the introduction of tablets (iPads) to didactic design and aimed at the observation of learning processes of the entire school community in connection with the appearance of a new educational actor. In his paper, Grzegorz Adamczyk analyses the relations between students’ cultural
and social capital and their competence test results in the field of the Polish language. The primary purpose of the research by Salah Hailat, Yousef Eyadat, and Khaleda Zaid is to investigate the effect of using a virtual history strategy on the development of historical thinking skills among a sample of undergraduate classroom teachers from one public university, located in the middle part of Jordan. The work by Kamila Majewska includes a discussion of the frequency, as well as ways, of using ICT devices by early education teachers.

In the subject session “Social Pedagogy” we publish six articles. The aim of the study by Beata Žitniaková Gurgová and Simona Slačková is to determine relationships between adolescents’ perfectionism and their parents’ parenting. In their article, Miriam Niklová and Jana Makúchová present results of empirical research conducted at selected elementary and secondary schools in Slovakia in 2017 in order to elucidate the most frequent cyber-bullying platforms and occurrence of individual forms of cyber-bullying with regard to cyber-victims. The paper by Amirullah Abduh and co-workers aims to explore internationalization awareness and commitment of higher education in Indonesia. Kokom Komalasari, with his co-workers, aims to describe a culture-based social studies learning model to foster student multiculturalism. The purpose of the study by Naser Nastiezaie and Seyed Hoseyn Musavinejad is to predict the effectiveness of Zahedan elementary school principals based on the triple factors of position in the Fiedler leadership model. In their article, Ewa Ogrodzka-Mazur and her co-workers present the results of exploring the purposes of using digital tools to support student learning at universities.

In the subject session “Special Pedagogy” we publish three articles. The purpose of the article by Marta Licardo is to determine on which domain teachers focus most while providing additional professional support for children with special needs and what differences there are among the groups. The study by Sabina Pawlik was conducted as participatory action research, in which the main areas of social exclusion of people with intellectual disabilities were exposed. The paper by Anna Nowak examines a number of issues related to undertaking social roles by adults with disabilities and the problem of their postponed transition to adulthood, restricting or delaying developmental tasks typical of adulthood, which has negative implications and may exacerbate disability.

In the subject session “Pedeutology” we publish two articles. The aim of the study by Lawrence Aloysius Aeria and his co-workers is to report on the burnout syndrome among teachers during the implementation of the curriculum in Malaysia, namely Integrated Secondary School Curriculum. The main problem of
the research by Predrag Živković and his co-workers is to examine self-reported attitudes toward student teachers’ professional identity dimensions.

In the subject session “Chosen Aspects of Psychology” we publish one article, by Marcin Moroń, Karolina Glinka and Agnieszka Doktor, which presents a study of the relationships between attention to emotion and clarity of emotion and prosocial behaviour examined with gender as a moderator.

We hope that this edition, like previous ones, will encourage new readers not only from the Central European countries to participate in an open international discussion. On behalf of the International Editors’ Board I would like to invite representatives of different pedagogical sub-disciplines and related sciences to publish their texts in *The New Educational Review*, according to the formal as well as essential requirements placed on our website: www.educationalrev.us.edu.pl – For Authors.
The Development of Deconstructive Learning History Model to Promote the Higher Order Thinking Skill of University Students

DOI: 10.15804/tner.2018.51.1.01

Abstract
The presented research develops a deconstructive learning history model to promote the Higher Order Thinking Skill (HOTS) of university students. According to Thiagarajan, Semmel, & Semmel’s (1974) approach, the model was developed in four stages: defining, design, development, and dissemination. The research participants were 120 students of the History Education Department, Sebelas Maret University, Indonesia. The authors found the main problems related to the aspects of chronological thinking, students’ passive attitude, and the availability of learning path. Based on those problems, the author designed a deconstructive learning history model, consisting of four learning stages: problem statement, deconstruction, construction, and articulation. At the development and summative evaluation stages, the learning model proved feasible and effective in promoting the HOTS, thus, the learning model can solve the problems of time orientation and students’ passive attitude. Considering the findings and results of the research, the authors state that the learning model becomes a decisive factor in provoking students to reach the higher cognitive level in Bloom’s taxonomy.

Keywords: higher order thinking skill, learning history, learning model, deconstructive
Introduction

One of the primary objectives of the higher education learning system in the 21st century is to develop students’ higher order thinking skill (HOTS) (Collins, 2014). The HOTS can be defined in the framework of the cognitive level of Bloom’s taxonomy (1965), which later was revised by Anderson and Anderson (2001). The HOTS is achieved when the student has reached three high levels in the cognitive domain: analyze, evaluate, and create (Yen & Halili, 2015).

In learning history, the HOTS is similar to the concepts of historical thinking and history reasoning skill (Drie & Boxtel, 2007; Ercikan & Seixas, 2011). Some researchers dealing with the development of the process of learning history, have developed their own concepts, either intertwined or unrelated to Bloom’s framework.

Seixas, Morton, Colyer, and Fornazzari (2013) constructed six levels of historical thinking, encompassing establishment of historical significance, using primary source evidence, identifying continuity and change, analyzing cause and consequence, taking historical perspectives, and understanding the ethical dimension of historical interpretations. In the same spirits, Masood, and Abdullah (2016) adapted Bloom’s taxonomy for assessment purposes in learning history. They generated six levels of taxonomy encompassing example, pre-structural, uni-structural, multi-structural, relational and extended abstract.

Although the HOTS has been described theoretically, in many practical cases the HOTS is hard to achieve. Weay and Masood (2014) stressed the problem in promoting the HOTS, which ironically lies on the time orientation paradigm of teachers and students, which emphasizes memorizing the chronological facts. Meanwhile, Seixas (2017) mentioned local problems, which relate to the differences of temporal orientation, learning environment conditions, and the uniqueness of students and teachers.

In facing those problems, some researchers have been trying to promote the HOTS by developing the role of teachers (Dorren, 2004), students’ activity (Pattiz, 2004), student examination (Demircioglu, 2009), or students’ educational experiences (Kim & Seo, 2015). Meanwhile, Drake and Brown (2003) suggested a systematic way by emphasizing the enrichment of learning material and using more than one book reference to present more perspectives in the classroom.

Following those endeavors, this research takes another approach by designing a deconstructive learning history model. The basic idea is to transform Bloom’s taxonomy into a learning model that consists of classroom practice and student activities. Following Joyce, Weil, and Calhoun’ (1972) work, the authors believe
that the learning model will become one of the exponents in the development of the HOTS. The design of learning stages should support students in mastering each level of the taxonomy by providing a learning path.

**Research Method**

The design of the instructional development by Thiagarajan, Semmel and Semmel (1974) was adopted to develop a deconstructive learning history model. The authors modified the design according to the local conditions and research purposes. At the defining stage, the authors focused on the problems and analysis of student characteristics related to their level of HOTS. The design stage was focused on generating the prototype of a deconstructive learning history model in the form of learning stages. The development stage consisted of two steps: expert appraisal and developmental testing. Small group and large group testing was used in the developmental testing to measure the feasibility and consistency of the learning model. The last stage was dissemination, consisting of summative evaluation to prove the effectiveness of the learning model in promoting the HOTS of students.

The research participants were 120 students of the History Education Department, Sebelas Maret University, Surakarta, Indonesia. The data were collected with the use of interviews, open questionnaires, feasibility forms, and HOTS test. At the defining stage, 30 students were interviewed and asked to fill the questionnaire in order to find the problems and contextual factors that influence the level of students’ HOTS. At the development stage, a feasibility form was used to collect responses from experts and students in expert appraisal, small group testing, and large group testing. The feasibility form consisted of the holistic indicator of the learning model arranged by Joyce and Weil (1972), encompassing learning stages, social system, lecturer and student roles, supporting system, and nurture effects. The feasibility of the prototype was measured according to the following criteria:

<table>
<thead>
<tr>
<th>Range</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.26–4.00</td>
<td>Very feasible</td>
</tr>
<tr>
<td>2.51–3.25</td>
<td>Feasible</td>
</tr>
<tr>
<td>1.76–2.50</td>
<td>Feasible enough</td>
</tr>
<tr>
<td>1.00–1.75</td>
<td>Not feasible</td>
</tr>
</tbody>
</table>
In the summative evaluation, 60 students were involved to measure the effectiveness of the learning model. They were divided into a control group and an experimental group, each group consisted of 30 students. At this stage, a HOTS test was used with t-test analysis to measure the effectiveness of the learning model. The HOTS test was designed by the authors following the revised version of the cognitive levels of Bloom's taxonomy, the six-levels of historical thinking, and the adaptation of Bloom's taxonomy in learning history. The authors then generated the indicators into a questionnaire and validated it by the SPSS 17.0 program.

**Research Findings and Results**

**The Findings of the Defining Stage**

The authors found several student characteristics in the classroom. The majority of the students mostly recite historical data and information that was presented during the learning process as the construction of their historical argumentation and reasoning. They have an assumption that all of the historical data, which were presented in the classroom, were generally true. Other students not only reiterate but also try to use historical data, whether partially or fully, to construct their historical argumentation and reasoning. However, the students have a tendency to emphasize the chronological aspect of the historical events explanation. The authors also found that few students are able to produce argumentation or historical reasoning based on their analysis and evaluation of historical data. Based on those data, the authors emphasise that the differences in the students’ abilities are affected by how the students organize their existing as well as new knowledge during the learning process.

**The Design Stage**

The findings of the define stage become an empirical foundation to design the deconstructive learning history model. The framework of the prototype of the learning model was generated from Bloom’s revised taxonomy (Anderson & Anderson, 2001), the six levels of historical thinking (Seixas, Morton, Colyer, & Fornazzari, 2013), and the adaptation of taxonomy in learning history (Weay, Masood, & Abdullah, 2016). Vygotsky’s (1986) approach, particularly the concept of scaffolding, was adopted to design the social system of the learning model, in order to help the students to reach their zone of proximal development by
providing a space for collective discussion, problem solving, and articulate their finding in the classroom.

The authors also adopted problem-based learning (PBL) in contextualizing the learning model. PBL could improve the HOTS by posing present and complex problems to solve (Tan, Chye, & Teo, 2009; Duch, 2001), which in the context of learning history must be interrelated with historical events (White, 2008). Meanwhile, the deconstruction approaches of Derrida (1997) and the concept of continuity and discontinuity of Foucault (1972) were adopted as a tool of the heuristic phase to analyze the genealogy of the present problems in the past. It affected the design of the learning stages that emphasize the profound analysis of genealogy of problems in order to find a new concept or argumentation from its process. The prototype of the deconstructive learning history model is as follows:

### Table 2. Prototype of Deconstructive Learning History Model

<table>
<thead>
<tr>
<th>Learning Stages</th>
<th>Learning activities</th>
<th>Competences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1:</td>
<td>• Lecturer explains present problems as the main topic of learning</td>
<td>• Remembering and understanding the concept of continuity and discontinuity</td>
</tr>
<tr>
<td>Problem</td>
<td>• Lecturer makes a link between the present problems and the past problems</td>
<td></td>
</tr>
<tr>
<td>statement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 2:</td>
<td>• Students discuss the problems collectively</td>
<td>• Applying the concept of continuity and discontinuity</td>
</tr>
<tr>
<td>Deconstruction</td>
<td>• Students compare and analyze the problems in historical perspectives</td>
<td>• Analyzing similarities and differences between the present problems and past problems</td>
</tr>
<tr>
<td></td>
<td>• Students find and describe roots of the problems</td>
<td></td>
</tr>
<tr>
<td>Stage 3:</td>
<td>• Students give critiques to the existing assumptions, perspectives, and concepts</td>
<td>• Produce new findings by evaluating old assumptions, perspectives, and concepts based on</td>
</tr>
<tr>
<td>Construction</td>
<td>based on their findings</td>
<td>historical evidence and reasoning</td>
</tr>
<tr>
<td></td>
<td>• Students construct new assumptions, perspectives, and concepts looking at the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>problems</td>
<td></td>
</tr>
<tr>
<td>Stage 4:</td>
<td>• Students articulate and share their findings with other students</td>
<td>• Acknowledge and take ethical aspect of the learning process</td>
</tr>
<tr>
<td>Articulation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### The Result of the Development Stage

The result of expert appraisal and developmental testing proved that the prototype is feasible. The average result of expert appraisal is presented in Table 3.
After expert appraisal, the prototype was tested in small group testing and large group testing, in order to find the consistency of its feasibility. The result of small group testing and large group testing is presented in Table 4.

**Table 4. The result of development testing**

<table>
<thead>
<tr>
<th>Evaluation Aspect</th>
<th>Small Group Testing</th>
<th>Large Group Testing</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Stages</td>
<td>3.25</td>
<td>3.5</td>
<td>Very Feasible</td>
</tr>
<tr>
<td>Social system</td>
<td>3</td>
<td>3.25</td>
<td>Feasible</td>
</tr>
<tr>
<td>Lecturer and student roles</td>
<td>2.75</td>
<td>3.10</td>
<td>Feasible</td>
</tr>
<tr>
<td>Supporting system</td>
<td>3.25</td>
<td>3.5</td>
<td>Very Feasible</td>
</tr>
<tr>
<td>Nurture effects</td>
<td>3</td>
<td>3.10</td>
<td>Feasible</td>
</tr>
</tbody>
</table>

The result of expert appraisal and development testing has proven the feasibility and consistency of the prototype. It means the prototype could be tested for its effectiveness at the dissemination stage.

**The Result of the Dissemination Stage**

The post-test average score and independent sample t-test score of the control class and the experimental group have proved the effectiveness of the learning model. The results are shown in Tables 5 and 6 below:

**Table 5. The post-test average score**

<table>
<thead>
<tr>
<th>Groups</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Order Thinking Skill</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Group</td>
<td>30</td>
<td>33.17</td>
<td>1.913</td>
<td>.349</td>
</tr>
<tr>
<td>Experimental Group</td>
<td>30</td>
<td>35.73</td>
<td>3.129</td>
<td>.571</td>
</tr>
</tbody>
</table>
The post-test average score showed differences between the control group and the experimental group. The mean of the control group (33.17) was smaller than that of the experimental group (35.73). It proved that the score of experimental group was better than that of the control group. The result of the independent sample t-test is shown in Table 6.

Table 6. The result of independent sample t-test

<table>
<thead>
<tr>
<th>HOTS</th>
<th>Levene's test for equality of variances</th>
<th>t-test for equality of means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>4.980</td>
<td>.030</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>-3.833</td>
<td>48.030</td>
</tr>
</tbody>
</table>

The result of the independent sample t-test proved that the control group and experimental group were not an identical population. It showed the sig. value of Levene’s test for equality of variances was 0.030 < 0.05. The values proved that the deconstructive learning history model was effective in promoting the students’ HOTS.

Discussion

The presented study discusses a common problem in the development of the HOTS, particularly in the subject of learning history. The student’s challenge is to think beyond the chronological thinking and make connections among historical events in a wider contexts. The problem lies in how students organize their knowledge in its relation to time perceptions and historical sequences. This problem is similar to the time orientation problem found by Weay and Masood (2014) in the context of learning history in Malaysia.

Moreover, as stressed by Seixas (2017), the authors also found local problems related to students’ passive learning attitude, which was constructed by the students’ assumption of historical data in learning history. The students tend to acquire all historical data and do not have a path to retrace and organize all the
historical data acquired during the learning process. The facts that there were differences in the HOTS levels among the students in one classroom, as an epistemic community that intermingled and received the same knowledge, reflected the uniqueness and locality aspect in the development of HOTS. Furthermore, it reflects the importance of a learning path as the student’s cognitive ability to organize their existing knowledge as well as their new knowledge that affects their cognitive level.

The presented study confirms the importance of the learning model in promoting HOTS. It means, as stressed by Collins (2014) and Budsankom, Sawaboon, Darongpanit, and Chuensiringmokol (2015), that the learning model becomes a fundamental aspect in developing HOTS. This can also be perceived in line with an attempt to transform Bloom’s taxonomy into classroom practice in the form of the students’ activities (Mulcare & Shwedel, 2017; Shalaby & Milad, 2017).

Our empirical study proved that the deconstructive learning model affects the level of students’ HOTS. The result of the summative evaluation showed the effectiveness of the learning model in promoting students’ HOTS. The learning model could solve the problems of time orientation and students’ passive attitude. The learning model improves students’ HOTS by providing learning stages that not only emphasize chronological perspectives but also critically force students to retrace historical data at each learning stage, from problem statement, through deconstruction, and construction, to articulation. In line with Duch (2001) and Pritchard and Woolard (2003), the present problem could be posited as the main topic in learning history to reverse the chronological thinking of the student. It is added to the concept of continuity and discontinuity as basic thinking to understand the past. Furthermore, the deconstructive and genealogical approaches are imparted as a heuristic component in the learning model and it proved effectively helpful to the students in the deep analysis of problems. In other words, the learning model acted like modeling for students’ activity and a medium of scaffolding to achieve the HOTS of students.

In the context of education theory, this research continues Usher and Edward’s (2003) and Walshaw’s (2007) ideas to use Derrida’s and Foucault’s thought in the educational field. They theoretically focused on the positions of deconstruction in the matter with subjectivity and individualism of students’ construction in modern times. This research puts forward a supportive finding that the processes of analysis and evaluation, as well as creativity, do not merely depend on students’ authentication and subjectivity but are also affected by students’ contiguity with others. The students’ contiguity was shown during their activities at the deconstruction stage. At that stage, the students showed the need to collaborate with
others to solve difficult problems. Moreover, at the articulation stage, the students personally learned to accept and take the ethical aspect from the argumentations and critiques of others. The students’ activities reflecting the process of knowledge construction depends on the presence of others, who scaffold them in reaching the highest level of learning. Moreover, the mixture of personal and collective action at the learning stages contribute to the development of HOTS by producing an awareness of others. The authors argue that the HOTS is composed by the aspect of students’ subjectivity and the awareness of the presence of others. Thus, the learning model plays a role in decentering the notion of authentication and subjectivity in the learning process as well as reinforcing the understanding of others’ influence on students’ subjectivity.

Based on the above discussion, the authors agree that the learning model should be intensively developed in future research by considering other learning components, such as curriculum (Casagrand & Semsar, 2017), learning theory and practices (Ganapathy, Singh, Kaur, & Kit, 2014), and technologizing university (Hopson, Simms, & Knezek, 2001; Bolton, 2006). Thus, following Drake and Brown’s (2003) holistic approach, the development of HOTS could be systematically implemented in all the aspect of the higher education learning system.

**Conclusion and Recommendations**

The result of the research reflects the importance of the learning model in the development of the HOTS. Our research proves that the deconstructive learning model is effective in promoting students’ HOTS. The learning model could solve two problems in the development of the HOTS: time orientation and students’ passive attitude. Thus, the development of the learning model should be intensively developed in future research. However, this notion should be followed by other elements in the university, such as curriculum and policy as well as lecturer training and student learning support programs, thus, students’ HOTS could be more systematically promoted.

**References**


Mulcare, D., & Shwedel, A. (2017, April 3). Transforming Bloom’s taxonomy into class-
The Development of Deconstructive Learning History Model


The Effectiveness of Using the Jigsaw Model to Improve Students’ Economics Teaching-Learning Achievement

DOI: 10.15804/tner.2018.51.1.02

Abstract
The objective of this study was to investigate whether the use of the Jigsaw model in teaching-learning Economics could improve the results of Senior High School Students in Banda Aceh, Indonesia. A quasi-experimental design was used in this study, which used 60 randomly sampled second year (Grade 11) High School students for the sample, divided into two classes of 30; one the experimental group (EG) and the other the control group (CG). The two groups were homogenous in terms of their initial ability. The instrument used in this study was an essay test. T-test was used to analyse the data collected. The results from the post-test showed that there was then a significant positive difference between the two groups in terms of the students’ achievements in economics; after the EG had been taught-learnt using the Jigsaw model for three months, they got significantly higher results in their economics essays than the CG students, who had been taught economics using the standard model and had not used Jigsaw. The implications of this study show that the use of the Jigsaw model in teaching-learning economics can be a model for improving students’ achievement.

Keywords: Jigsaw model, economics, achievements of students
Introduction

Improving the quality of education in Indonesia is one of the most important tasks that should be undertaken by the government in this era of globalization characterized by the e-economy. The institutional education in Indonesia has undertaken various strategies to enhance students’ achievement. However, the quality of students’ achievement is still insufficient. Besides, the government also insists that teachers should improve their competences so that they can solve teaching-learning problems in their classrooms. Training programs have also been developed by the educational institutions in Aceh to improve the quality of the teaching-learning processes of the teachers. In addition, teachers should also have a good knowledge of the character and needs of their students (Cercone, 2008). In addition, the teacher should know the learning styles of their students so that they can teach their lessons easily (Oxford, 2003). In relation to this, the subject of economics education is one of the compulsory subjects that are included in the National Curriculum of the Indonesian education system. Various kinds of policies and decisions have been made by the Education Department to improve students’ achievement in their study of economics at Senior High School level.

The policies to improve the quality of teaching include ensuring that all teachers get certified as professional teachers and that better facilities to support the processes of teaching-learning are provided; also, that the role of the principal to provide guidance to teachers in the teaching-learning processes is strengthened with in-service training. Therefore, when discussing the issue of human resources, priorities should be given to efforts to prepare and improve the skills and expertise of everyone to face the challenges and uncertainties of the future. In this context, students as the future human capital of the country need to develop a variety of skills and expertise to ensure that they are accepted and recognized as the most valuable future assets of the state and those skills can only be developed through education (Martin & Double, 1998). Teaching-learning strategies for students should be adjusted to the teaching strategies that generate a positive attitude in the learning process. The teaching-learning processes should be improved with innovative strategies and methods to ensure improved student results and creativity (Briggs 1994).

Thus, better student learning styles are needed to help students master the teaching-learning processes. Dunn & Dunn (2008) stated that teachers should no longer pre-suppose that students would apply their learning through other teaching methods. The new curriculum requires teachers to adapt to the unique nature of students as needed to achieve academic excellence and high achieve-
ments. According to Johnston et al., (2000), economics is one of the subjects that students find difficult, which is taught at the high school and university levels. Accordingly, Johnston et al., (2000) suggested that students of economics must necessarily develop the capacity to think abstractly to be able to adapt to these lessons. Students must also develop the ability to explain ideas seamlessly and logically. Economics teachers have to use various teaching-learning strategies to encourage students to continue to master economics. Many concepts studied in economics are taught with the use of quantitative methods, such as graphs, figures, equations and numerical examples. Schuhmann et al. (2005) stated that students who did not develop the ability to think quantitatively would have difficulties in mastering economics.

In addition, various teaching-learning methods (contextual teaching and learning, scientific approach, discussion, etc.) have been employed by teachers to improve student achievements, but the results are rarely good enough (Muslem & Abbas, 2017). Co-operative learning methods are commonly used in teaching-learning processes to improve student achievements (Hornby, 2009; Jalilifar, 2010). Co-operative learning models are attractive methods for teaching-learning in the classroom (Marburger, 2005). The use of co-operative learning in the teaching-learning process has indicated advantages such as increasing achievement, enhancing students’ critical thinking skills, a deeper understanding of learned materials, enhancing students’ attention and less disruptive behaviour in class, decreasing students’ anxiety and stress, and, not less important, increasing students’ motivation and self-confident. Besides, students can also improve their social skills and enhance their capacity to work productively together while working in a cooperative learning environment (Kam-Wing, 2004; Zain et al., 2009; Sahin, 2010; Majoka et al., 2011).

**Research Problem**

Jigsaw is one of the cooperative learning models usually used by teachers to teach in the classroom of Senior High School students in Indonesia. Most teachers in Indonesia use this model to teach English, Science and Math, Geography, Biology, Medicine, etc. And it has been proved that the use of this model improves student achievement in those lessons. Various strategies and models have been used by teachers to improve student achievement in economics, such as discussion, lecture, group work, etc. Many teachers use cooperative learning such as Team Game Tournament, STAD, Number Head Together, Think Pair Share, and Jigsaw. However, the Jigsaw model is rarely used by teachers of economics. Thus, the presented study attempts at investigating if the use of the Jigsaw model can
improve students’ achievements in economics at Senior High School in Banda Aceh. In other words, to what extent this model helps students enhance their performance in economics education.

**Research Focus**

The focus of this study was the implementation of the Jigsaw model to enhance students’ achievement in economics at Senior High School in Banda Aceh. The Jigsaw model is one of the cooperative learning models that enable students to improve their academic achievement. There are many kinds of cooperative learning models most widely employed in teaching and learning as such; Student Teams-Achievement Division (STAD) (Slavin, 1980), Teams-Games-Tournament (TGT; Slavin, 1980), Learning Together, and Group Investigation (Sharan and Hertz-Lazarowitz, 1980), Jigsaw (Slavin, 1980, as cited in: Kam-Wing, 2004). From these models, the jigsaw one was selected in the presented study to employ in the teaching and learning of economics in the classroom. This model can enhance cooperative learning by making each student responsible for teaching some of the learning issues to the group. In this model, students are members of two different groups, the ‘home group’ and the ‘jigsaw group’ (Kam-Wing, 2004). Principally, students meet in their home groups and each member of the group is assigned a portion of the learning issues to learn as an ‘expert’ (Slavin, 1980, as cited in: Kam-Wing, 2004). This model can promote students’ interaction, communication among students and teachers, and increase students’ performance (McDougall & Gimple, 1985; Kam-Wing, 2004; Lai & Wu, 2006). The process of teaching and learning in this model starts when the home groups break apart, like pieces of a jigsaw puzzle, and students move into jigsaw groups, which consist of members from the other home groups who have been assigned the same portion of the learning issues. While in the jigsaw groups, the students discuss their particular material to ensure that they understand it. Students then return to their home groups, where they teach their material to the rest of their group (Colosi and Zales, 1998; Kam-Wing, 2004; Slish, 2005; Soh, 2006; Doymus, Karacop, & Simsek, 2010; Sahin, 2010).

**Research Methodology**

**Research General Background**

The presented study was conducted at Senior High School in Banda Aceh. Banda Aceh is the capital of the Aceh province located at the westernmost tip of the Sumatra Island, Indonesia. The study used a quasi-experimental design with
pre- and post-tests. The experimental study was conducted to compare the effectiveness of improving students’ academic achievement by using the Jigsaw model and the conventional model. The study involved two existing classes of the second grade students of Senior High School. The two classes were pre-checked and found to be homogenous and both groups used the same media but each group was taught differently. Thus, the authors selected any class to be experimental and control groups. Two groups of students were given pre-tests prior to the treatment. A set of essay tests was used as the pre-test.

The process of teaching and learning by using the jigsaw model was conducted by the teachers after they had been taught the model by the authors. They had been taught the model during two weeks with the expectation that they were successful in doing the treatment. Two teachers of economics participated in the study; one teacher acted in the experimental group and another one acted in the control group. The reason why this study involved the teachers to conduct the experiment was to avoid the subjectivity of research results. The experimental group was taught with the use of the Jigsaw model and the control group was taught with the use of the conventional model. Both lessons lasted one hour a week. The experimental and control groups were taught during 14 weeks. The authors were the facilitators and observers of the process of teaching and learning during the treatment. The authors did not involve in the treatment to avoid bias and also to ease the control of internal and external validity. After finishing the treatment, each group was given the same new post-test. The post-test consisted of five essay questions that related to the economics lessons, namely macro- and micro-economics, national income, inflation and price index, consumption and investment, money, bank and monetary policy. The students were asked to answer the questions that related to these topics in the post-test.

**Research Sample**

Two classes of second grade students of senior high school in Banda Aceh were the sample of the study. The two classes were checked for equivalency in their academic achievement in economics. The authors tested the students’ economics achievements to ensure that they were homogenous in terms of their ability. Both classes were homogenous in terms of their prior ability. The sample of this study consisted of 60 second grade (year 11) senior high school students in Banda Aceh. Each group consisted of 30 students. Since the level of the students’ academic achievement in the previous examination in economics were the same, the authors determined the two classes as an experimental group and control group. The authors used random sampling to ensure objectivity and avoid bias.
The Effectiveness of Using the Jigsaw Model

Instrument and Procedures

The instrument used to collect data for the presented study was test, pretest and posttest. Five essay questions were distributed to both classes. The instrument used had been tested prior to distributing it to the students to ensure its validity and reliability. In order to achieve good validity and reliability of the instrument used in this study, the authors adapted the model from Abdul Halim et al. (2010). The procedures of the model are as follows: First, the authors analysed the previous study then analysed the theory and concepts related to the instrument construction. Next, they constructed the definition and developed the first draft of essay items. And then, they sent the model to experts and revised it based on the comment given by the experts. After that, the authors designed a pilot project to ensure the validity and reliability of the instrument. And then it became a draft of the instrument prior to the real instrument used to collect data (cf., Figure 1). After achieving the validity and reliability of the instrument, the authors started collecting data.

![Diagram of the procedure of research instrument](image)

**Figure 1.** Procedure of research instrument (Adapted from Abdul Halim et al., 2010).

Data Analysis

The data from the tests was analysed by using descriptive and inferential statistics, which involved a t-test. It was conducted to compare the two groups, in this case, which group performed better after finishing the treatment.
Research Results

The objective of the presented study was to find out if the use of the Jigsaw Model can improve students’ academic achievements in economics at Senior High Schools in Banda Aceh. Analysis of the findings showed that there was a significant positive difference in terms of the ability of the EG students in economics after using the Jigsaw model as compared to the CG students following the traditional model for teaching-learning economics. Table 1 shows the mean and standard deviation of the pre-test results from both the CG and the EG. It shows that there was no significant difference in the pre-test results of both groups in terms of the students’ achievements in both groups as shown below:

Table 1. Mean and standard deviation (S.D.) of the pre-tests of the two groups

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Method</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students’ achievements in economics</td>
<td>Conventional</td>
<td>30</td>
<td>41</td>
<td>8.959</td>
</tr>
<tr>
<td></td>
<td>Jigsaw</td>
<td>30</td>
<td>44</td>
<td>9.471</td>
</tr>
</tbody>
</table>

Table 2 presents the means and standard deviation of the post-test results for both the CG and the EG. It shows that there was a significant difference between the two groups in terms of the students’ achievements. The students in the EG obtained a significantly higher mean score than the students in the CG. This means that the use of the Jigsaw model can significantly improve students’ achievements in economics.

Table 2. Post-test results: means and standard deviation of the two groups

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Method</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students’ performance in economics</td>
<td>Conventional</td>
<td>30</td>
<td>51</td>
<td>9.517</td>
</tr>
<tr>
<td></td>
<td>Jigsaw</td>
<td>30</td>
<td>75</td>
<td>4.571</td>
</tr>
</tbody>
</table>

Table 3 shows the result of the t-test of the dependent variable in terms of the students’ achievements in economics. There was a significant difference in the means in terms of the students’ achievements in economics in which \( t (29) = 26.32, p = 0.05 \). Therefore, the null hypothesis was rejected. This means that the use of the Jigsaw model in teaching economics significantly improved the EG students’ results.

Table 3. The results from the t-test of the post-test scores

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>( Df )</th>
<th>( T )</th>
<th>( P )</th>
<th>Result</th>
<th>Hypothesis</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students’ achievements in economics</td>
<td>29.00</td>
<td>26.3</td>
<td>0.00</td>
<td>Significant difference in means</td>
<td>Ho</td>
<td>Reject</td>
</tr>
</tbody>
</table>
The Effectiveness of Using the Jigsaw Model

Table 4 shows the mean scores for the dependent variable, i.e., the post-test economics test results for both the CG and the EG. The means and standard deviations for both groups were used to determine the size of the effect according to the method of Cohen (Cohen, 1988). According to Wolf (1986), generally if Cohen’s d value is greater than 0.25 it indicates a significant positive learning effect. Cohen’s value for the variables of the dependent variable (students’ achievements) in the economics test was 0.734. This indicates that the effect of the Jigsaw model was significant. It can be concluded that the use of the Jigsaw model significantly improved the students’ achievements in economics. Hence, the hypothesis for this study was confirmed and the null hypothesis was rejected as there was a significant positive difference between the results in economics obtained by the EG students, who were taught with the use of the Jigsaw model, and the CG students, who were taught with the use of the traditional model.

Table 4. The mean scores and size effects from the post-tests

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>CG Mean Score</th>
<th>CG (N = 30) S.D.</th>
<th>EG Mean Score</th>
<th>EG (N = 30) S.D.</th>
<th>Size Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic performance of economics students</td>
<td>51</td>
<td>9.517</td>
<td>75</td>
<td>4.571</td>
<td>0.734</td>
</tr>
</tbody>
</table>

Discussions

The objective of this study was to investigate whether the use of the Jigsaw model could improve the achievements of economics students. Analysis of the results shows that the use of the Jigsaw model can improve the results of economics students’ achievements. Jigsaw is one of the co-operative learning models that can be used in the teaching-learning of economics (Marburger, 2005; Sahin, 2010). The finding of this study is in line with those from previous research which found that the use of the Jigsaw model could improve the results of economics students (Zain et al., 2009; Sahin, 2010; Majoka et al., 2011). This model enables students to work collaboratively so that they can share and give ideas in the processes of teaching-learning in the classroom (Briggs 1994). The finding of this study is in line with the previous research findings in which the use of the jigsaw model enhanced students’ academic achievements (Slish, 2005; Soh, 2006; Doymus, Karacop, & Simsek, 2010; Sahin, 2010). Thus, this model can be applied by teachers, especially the teachers of economics, in the classroom to enhance either students’
achievements or style of learning. This is also supported by the previous study that reported that the use of the jigsaw model improved students’ attitude to learning (Lai and Wu, 2006).

The findings of this study also show that the students’ ability to solve problems in economics by using statistical analysis and mathematic formula is enhanced. Besides, the understanding of econometric concepts in economics was also improved. The quality of cooperative learning in solving the problems of economics was also high. In addition, the study also found that the students’ attitude towards the learning process in class was positive after using the Jigsaw model. And those findings were the merit of this study. The study has also contributed an alternative and effective way to improve students’ achievements in economics through the use of the Jigsaw model, in particular how to easily solve the problems related to econometrics. The results also appear to benefit low achievers, enabling them to improve their performance. Also, Jigsaw enables students to work co-operatively to enhance their understanding of economics. The most important result of this study was that the Jigsaw model enables the learners to study more smartly and independently. As a result of this study, the jigsaw model has been applied by the teachers of the school when teaching economics lessons. Therefore, the model can help low achievers to improve their learning performance.

Conclusions

The presented study investigated the results of using the jigsaw model in the teaching-learning of economics to second grade (year 11) senior high school students in Banda Aceh. The finding showed that the students’ achievements and learning styles changed after using the Jigsaw model in the teaching-learning processes. The Jigsaw model of cooperative learning was the key factor in the positive changes in the students’ achievements in economics. This study showed a significant positive difference between the EG and the CG post-treatment in terms of academic achievement in economics. Thus, there was a significant positive improvement in the students taught with the use of the Jigsaw model compared to those taught with the use of the traditional model in terms of achievement in economics.
Acknowledgements
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References


Integration of Agricultural Knowledge with the Thai Language, Mathematics, and Science Subjects for First-year Elementary School of Thailand

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Abstract
The research is aimed at studying academic achievement and the effects of attitudes towards agriculture from teaching and learning through the integration of agricultural knowledge with the Thai language, mathematics, and science subjects of the first grade of elementary school in Thailand. This study was a true experimental design, which employed only the post-test control group design. Results of the study were as follows: 1) Teaching/learning which employed agricultural knowledge to integrate subjects could enhance the students’ knowledge of agriculture; and 2) Teaching and learning through integrated subjects made the students have increased attitudes towards agriculture.

Keywords: attitudes, integration, agricultural knowledge, Thai language subject, mathematics subject, science subject

Introduction
The Ministry of Education determined strategies and guidelines for the acceleration of quality and standard development of students in the 2012-2016 educational development plan. It focuses on curricular program improvement, teaching/learning process, measurement and assessment. In other words, it focuses on the development of the learning facilitation process and the provision of activities that supplement learners’ skills. This was aimed at making the learner
have systematic analytical thinking, as well as skills in science, mathematics, technology and foreign languages. It also promotes media production and learning materials both in normal and electronic forms, including learning content that improves consistency with current conditions. In other words, learners can learn by themselves through these learning materials (Ministry of Education, 2012).

In addition, this educational development plan promotes codes of conduct and good Thai citizenship in the education system. This could be classified into 4 aspects as follows: 1) promoting the construction of the learning process, instilling awareness of virtues, ethics, values of pride to be Thai, and the public in accordance with the philosophy of economy sufficiency; 2) promoting diverse learning integration on the basis of academics, life skills, arts, music, culture, religion, and being Thai; 3) promoting learning process development, practical activities for the development of citizens, disciplines, unity, democracy, and royalty to the King; and 4) promoting coordination networking among families, religions, and educational institutions for the development of codes of conduct for students (Ministry of Education, 2012).

Regarding strategies and guidelines for accelerating the development of the quality and standard of learning, at present the subject of Agriculture is a subject under the core curriculum of basic education, 2008, which is included in the learning content group on learning of occupations and technology (Ministry of Education, 2008). Apparently, agricultural teaching/learning hours at the elementary school level are very few. That is, the teacher cannot teach all agricultural contents as established. It is the basic knowledge and skills having an effect on the lack of good attitudes towards agriculture or the need for agricultural occupations of students in the future. Therefore, the integration in accordance with the educational development plan is an alternative to solving problems in facilitating agricultural teaching and learning activities. This idea is consistent with the opinions of guardians of the first grade elementary school pupils in Sangkaprachanussorn School (98.68%). They agreed that agriculture was essential for daily living, so they wanted their children to have agricultural knowledge about plants and animals. Besides, they wanted agricultural knowledge to be integrated with the Thai language, mathematics, and science subjects at a high level (Satiansiriwiwat et al., 2016a).

In addition, the school committee of Sangkaprachanussorn agreed that the integration of agricultural knowledge with the Thai language, mathematics and science subjects for the first grade of elementary school is a good matter because it instills agricultural knowledge into the students and they will realize the importance of agriculture (Satiansiriwiwat et al., 2016B). Accordingly, the agricultural
teachers and the concerned personnel, i.e., guardians and the school committee, have consistent opinions on the integration of agricultural knowledge into the Thai language, mathematics, and science subjects. Therefore, the team of researchers aimed at the facilitation of teaching/learning in the first grade of elementary school (Sangkaprachanussorn School). This would help solve the problem in inadequate agricultural teaching hours. Also, it was responsive to the needs of guardians, practices in accordance with the school committee and the policy of the Ministry of Education. Moreover, this was integrated to truly build the students’ good attitude towards agriculture. This can be a model for the management of education in the first grades of elementary schools throughout the country. This conformed to the goal of education in agriculture at the elementary school level, which focuses on building a good attitude and instilling the love of agriculture into students (Intorrathed, 2013).

**Research Problem**
Nowadays, there are very few teaching/learning hours devoted to agriculture at the elementary school level, i.e., the teacher cannot teach all agricultural learning contents as established. It is the basic knowledge and skills that have an effect on the lack of good attitudes towards agriculture or the need for agricultural occupations in the future.

**Research Focus**
1. Study the academic achievement results of teaching and learning through the integration of agricultural knowledge with the Thai language, mathematics, and science subjects of the first grade of elementary school in Thailand.
2. Study the attitudes towards agriculture resulting from teaching and learning through the integration of agricultural knowledge with the Thai language, mathematics, and science subjects of the first grade of elementary school in Thailand.

**Research Methodology**

**Research General Background**
This study was a true experimental design that employed only the post-test control group design having 3 steps as follows:

1. Developing the curricular program on the integration of agricultural knowledge with the Thai language, mathematics, and science subjects
2. Preparing an integrated learning plan on agricultural knowledge with the Thai language, mathematics and science subjects
3. Trying-out the teaching of knowledge integration on agricultural knowledge with the Thai language, mathematics and science subjects

Research Sample
1. The population consisted of the pupils of the first grade of elementary school in the 2016 school year.
2. The sample consisted of the first year elementary school pupils of Sangkaprachanusorn School.
   2.1. The first grade class 1/3 as the experimental group (24 students)
   2.2. The first grade class 1/2 as the control group (24 students)

Instrument and Procedures
1. Developing the curricular program on the integration of agricultural knowledge with the Thai language, mathematics, and science subjects
   The first step was to develop the curricular program by investigating the indicators and contents of the core learning content on the Thai language, mathematics and science subjects of the first grade of elementary school in accordance with the core curriculum of basic education, 2008. Also, it investigated the consistency of the indicator. Appropriate content and learning standards of the learning content of the Thai language, mathematics and science subjects, which could be integrated into agricultural knowledge, were selected. Agricultural knowledge was established and would be integrated with guardians and the school committee (Satiansiriwiwat et al., 2016A, B). Three scholars assessed the curricular program using the curricular program assessment form. The results of the assessment were analysed using mean, standard deviation and interpretation criteria on opinions according to Best (1981). The results of the assessment on quality of the integrated curricular program by the scholars were found to be at a very high level (\(\bar{x} = 4.55\))
2. Preparing the integrated learning plan on agricultural knowledge with the Thai language, mathematics and science subjects
   The second step was to write the plan to facilitate learning in the Thai language, mathematics and science subjects for the first grade of elementary school based on the developed curricular program and the determination of teaching hours. The developed curricular program was analysed based on the principles, aims, and content of learning standards, learning time
Integration of Agricultural Knowledge

structure, course structure preparation, determination of content and learning time, investigation of learning facilitation plan writing, as well as review of literature on measurement and assessment in accordance with the form as set by the school. Then, the learning facilitation plan was proposed to the assistant principal of the school. This aimed to check, give suggestions on objectives, facilitate teaching/learning activities, teaching media, correct content having consistency with the measurement and assessment using the learning facilitation plan assessment form. The results of the assessment were analysed using mean, standard deviation and interpretation criteria according to Best (1981). The results of the assessment of the quality of the learning facilitation plan were at a very high level (x = 4.50).

3. Trying-out the teaching of knowledge integration on agricultural knowledge with the Thai language, mathematics and science subjects

3.1. Trying-out teaching to measure academic achievement: it was conducted with the first grade pupils of elementary school for 30 h. The experimental group was divided into two groups: those who did not learn through the integration of agricultural knowledge (Control group) and those who learned through the integration of agricultural knowledge (Experimental group).

3.2. Trying-out teaching to measure the attitudes towards agriculture: The trying-out integrated teaching based on the lesson facilitation plan constructed in the second step lasted 30 h. This was conducted with the control group and the experimental group.

Data Analysis

1. Trying-out teaching to measure academic achievement:

1.1. The testing of the difficulty value of the testing form to approve academic achievement was inspected based on the KR20 formula.

1.2. The testing of differences in the scores of academic achievement between that of the control group and the experimental group was compared using the t-test (independent sample).

2. Trying-out teaching to measure attitudes towards agriculture:

2.1. The testing of the objectivity of the measuring form was checked and improved by three scholars using the Index of Item-objective congruence (IOC)

2.2. The testing of differences in an average mean score of the attitude towards agriculture of the control group and the experimental group was analysed using the t-test (independent sample).
## Research Results

1. Developing the integrated curricular program on agricultural knowledge with the Thai language, mathematics and science subjects

The results show that the integrated curricular program consists of learning units, contents and some specimens of the integrated curricular program (Table 1).

### Table 1. Some specimens of the integrated curricular program on agricultural knowledge with the Thai language, mathematics and science subjects

<table>
<thead>
<tr>
<th>Learning unit</th>
<th>Content</th>
<th>Some specimens of the integrated curricular program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plants around us</td>
<td>• Plant reading and writing</td>
<td>Thai language: Living things and Processes of life (Compare differences between living things and non-living things)</td>
</tr>
<tr>
<td></td>
<td>• Writing plant names</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Answering questions about what has been read</td>
<td></td>
</tr>
<tr>
<td>Growing plants in a container</td>
<td>• A number and counting plants around us</td>
<td>Mathematics: Substances and Properties of Substances (type, properties of materials used for plant growing)</td>
</tr>
<tr>
<td></td>
<td>• Writing communications by using simple words and sentences</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Describing steps of plant growing</td>
<td></td>
</tr>
<tr>
<td>Taking care of plants to be grown</td>
<td>• A number and Operation</td>
<td>Science: Change process of the Earth (Explore, experiment and explain components and physical properties of soil in the local areal)</td>
</tr>
<tr>
<td></td>
<td>• Writing about taking care of plants</td>
<td></td>
</tr>
<tr>
<td>Harvesting agricultural yields</td>
<td>• Measurement (Comparison of height)</td>
<td>• Astronomy and Space</td>
</tr>
<tr>
<td></td>
<td>• Writing short stories about their experiences</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Weighing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Tell length and weight, by using non-standard units of measure</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning unit</td>
<td>Content</td>
<td>Some specimens of the integrated curricular program</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thai language</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mathematics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Science</td>
</tr>
<tr>
<td>Animals around us</td>
<td>• Reading and writing animal names</td>
<td>Add, Subtract and Mix Subtraction of cardinal numbers</td>
</tr>
<tr>
<td></td>
<td>• Telling the meanings of words and texts read</td>
<td>Living things and Processes of life (Specify characteristics of animals in the local area, and categorize them by using external characteristics as criteria)</td>
</tr>
<tr>
<td>Structure of animals</td>
<td>• Principles of Thai language Usage</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>• Write spellings and tell meanings of words.</td>
<td>Structure and function of animals (Observe and explain characteristics and functions of external structures of animals)</td>
</tr>
<tr>
<td>Benefits of animals</td>
<td>• Thai literature and Tales</td>
<td>Analyse and find answers to problems and mix problems of cardinal numbers</td>
</tr>
<tr>
<td></td>
<td>• Telling about insights obtained from reading or listening to literary works for children in prose and inverse</td>
<td>• Benefits of animals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Verbally present their work for others to understand</td>
</tr>
<tr>
<td>Producing food</td>
<td>Writing a story</td>
<td>Computation of incomes and expenses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nature of Science and Technology (Arrange data obtained from exploration and verification into groups and present results)</td>
</tr>
<tr>
<td>Income generating</td>
<td>Listening, Viewing and Speaking</td>
<td>Incomes and expenses records</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nature of Science and Technology (Make a record and explain results of the exploration and verification by drawing pictures or writing short texts)</td>
</tr>
<tr>
<td>Processing of agricultural yields</td>
<td>Products from plants</td>
<td>Mathematical Skills and Processes</td>
</tr>
</tbody>
</table>
|                                     | Reading and writing names of plant products                              | Substances and Properties of Substances (Observe and specify apparent characteristics or properties of materials)
### 2. Writing the integrated learning facilitation plan of agricultural knowledge with the Thai language, mathematics and science subjects
Interesting details are presented in Table 2.

#### Table 2. Some specimens of the integrated learning facilitation plan of agricultural knowledge with the Thai language, mathematics and science subjects

<table>
<thead>
<tr>
<th>Learning unit</th>
<th>Content</th>
<th>Thai language</th>
<th>Mathematics</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing of agricultural yields</td>
<td>Products from animals</td>
<td>Reading and writing names of animal products</td>
<td>• Plus and minus&lt;br&gt;• Write and read Hindu-Arabic and Thai numerals&lt;br&gt;• Showing quantity of objects or cardinal numbers</td>
<td>–</td>
</tr>
<tr>
<td>Agricultural business</td>
<td>Goods exchange, selling, and buying</td>
<td>Reading sentences and passages</td>
<td>Construction of trading problems</td>
<td>Verbally present their work for others to understand</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning unit</th>
<th>Content</th>
<th>Thai language</th>
<th>Mathematics</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plants around us</td>
<td>Thai vowels and consonants (1 h)</td>
<td></td>
<td>• Local plants&lt;br&gt;• Classification of plant types (1 h)</td>
<td></td>
</tr>
<tr>
<td>Growing plants in a container</td>
<td>–</td>
<td>2D geometry (1 h)</td>
<td>Soil components (1 h)</td>
<td></td>
</tr>
<tr>
<td>Taking care of plants grown</td>
<td>Writing a record (1 h)</td>
<td>Measurement of length and height (1 h)</td>
<td>The sun (1 h)</td>
<td></td>
</tr>
<tr>
<td>Agricultural yield harvesting</td>
<td>–</td>
<td>Weight comparison (1 h)</td>
<td>Structure of plants (1 h)</td>
<td></td>
</tr>
<tr>
<td>Animals around us</td>
<td>Spelling section (2 h)</td>
<td>Problem of positivity on plus and minus (1 h)</td>
<td>Local animals (1 h)</td>
<td></td>
</tr>
<tr>
<td>Structure of animals</td>
<td>–</td>
<td>–</td>
<td>Structure and function of animals (1 h)</td>
<td></td>
</tr>
<tr>
<td>Benefits of animals</td>
<td>Enjoyable tales (1 h)</td>
<td>–</td>
<td>Benefits of animals (1 h)</td>
<td></td>
</tr>
</tbody>
</table>
### Learning unit

<table>
<thead>
<tr>
<th>Content</th>
<th>Thai language</th>
<th>Mathematics</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance of agriculture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food production</td>
<td>Writing a sentence (1 h)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income generating</td>
<td>Answering questions</td>
<td>Problem of positivity (1 h)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>based on the reading</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>selection (1 h)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agricultural yield processing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Products from plants</td>
<td>Rhyme (1 h)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Products from animals</td>
<td>Lead character letters (1 h)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agricultural business</td>
<td></td>
<td>Construction of the problem of positivity form a picture (1 h)</td>
<td>Verbally present their work (1 h)</td>
</tr>
<tr>
<td>Goods exchange selling and buying</td>
<td>Reading (1 h)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Trying-out the teaching of integrated agricultural knowledge with the Thai language, mathematics and science subjects

3.1. Learning achievement: This is a comparison of academic achievements based on the teaching of integrated knowledge of agricultural knowledge with the Thai language, mathematics and science subjects. The comparison was conducted between the group of pupils who did not learn through integrated teaching (experimental group and the group of pupils learning through integrated teaching (Control group)). It was found that there was a statistically significant difference in academic achievement at 0.05. The average score of the experimental group was higher than that of the control group by 9.42 (Table 3).

#### Table 3. Comparison of academic achievement between the experimental group and the control group

<table>
<thead>
<tr>
<th>Sample group</th>
<th>N</th>
<th>X</th>
<th>S.D.</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental group</td>
<td>24</td>
<td>31.62</td>
<td>4.05</td>
<td>-5.88</td>
<td>0.00*</td>
</tr>
<tr>
<td>Control group</td>
<td>24</td>
<td>22.20</td>
<td>6.71</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *Statistically significant at 0.05
3.2. Attitudes towards agriculture: It was found that the control group and the experimental group had a statistically significant difference at 0.05 in attitudes toward agriculture. The experimental group had an average score of attitude higher than that of the control group by 0.27.

Table 4. Comparison of attitudes toward agriculture from integrated teaching and learning of agricultural work with the Thai language, Mathematics and science subjects of the first grade of elementary school (Sangkaprachanusorn school) between the experimental group and the control group

<table>
<thead>
<tr>
<th>Sample group</th>
<th>N</th>
<th>X</th>
<th>SD.</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental group</td>
<td>24</td>
<td>2.80</td>
<td>0.23</td>
<td>4.345</td>
<td>0.00*</td>
</tr>
<tr>
<td>Control group</td>
<td>24</td>
<td>2.53</td>
<td>0.21</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *Statistically significant at 0.05

Discussion

The results of the study showed the difference in the academic achievement of the control group and the experimental group with a statistically significant difference at 0.05, i.e., an average score of the experimental group was higher than that of the control group by 9.42. This implies that teaching and learning of the Thai language, mathematics and science can be integrated into agricultural knowledge. This includes knowledge about plants (78.66%), knowledge about animals (73.33%), and knowledge about the importance of agriculture (70.66%). Almost all the guardians (98.68%) agreed that agriculture is important to daily life of humans and they wanted the pupils to perceive the importance of agriculture more than ever (Satiansiriwiwat et al., 2016A). This conformed to the school committee that wants to instil agricultural knowledge and the importance of agriculture into students more than ever (Satiansiriwiwat et al., 2016B). However, it was opposed to the guardians of the first grade elementary school pupils, who wish to bring agricultural knowledge to integrate with the 3 subjects: the Thai language (73.68%), Mathematics (56.58%) and Science (78.95%) (Satiansiriwiwat et al., 2016A). According to the results of the study, it can be seen that the guidelines for the integration of agricultural knowledge into the Thai language, mathematics and science subjects were correct. Close attention should be paid and practiced continually. Importantly, the teacher must have knowledge and understanding of
sufficiency of agriculture. Also, he must have a good attitude towards agriculture and this will make the guidelines successful in the future.

Regarding the comparison of attitudes towards agriculture between the control group and the experimental group based on the integrated teaching and learning of agricultural knowledge of the Thai language, mathematics and science subjects, it was found that the experimental group had a higher average score than that of the control group with a statistically significant difference at 0.05. This clearly implies that integrated teaching and learning could make the pupils (experimental group) have a better attitude than the control group. The results of the study can confirm the opinions of the guardians of the first grade pupils at Sangkaprachakanussorn School, who wanted agricultural knowledge to be integrated into the Thai language, mathematics and science subjects. Almost all of the guardians (98.68%) realized that agriculture is important for the daily life of man. Thus, they wanted their children to have agricultural knowledge (Satiansiriwiwat et al., 2016A). This also conformed to the opinions of the school committee because they wanted the pupils to perceive the importance of agriculture and to instil agricultural knowledge into them (Satiansiriwiwat et al., 2016B).

Conclusions

The presented study included curricular program development, writing of the learning facilitation plan and trying out the teaching of the control group (not learning through integrated teaching) and the experimental group (learning through integrated teaching). The findings show that the academic achievement score of the experimental group was higher than that of the control group with a statistically significant difference at 0.05. This means that the integration of agricultural knowledge with the Thai language, mathematics and science subjects has an effect on the agricultural knowledge of the first grade elementary school pupils.

Moreover, trying-out teaching to measure attitudes toward agriculture between the experimental group and the control group was done. It was found that the experimental group had a higher average score on attitudes than that of the control group with a statistically significant difference at 0.05. Therefore, the integration of agricultural knowledge into the Thai language, mathematics and science subjects creates more positive attitudes toward agriculture than before.
References

A Comparison of EFL Elementary School Learners’ Vocabulary Efficiency by Using Flashcards and Augmented Reality in Taiwan

DOI: 10.15804/tner.2018.51.1.04

Abstract

With the rapid development of Augmented Reality (AR), an increasing number of studies has been conducted to explore the effectiveness of this technology in the field of education. Few, however, have examined how AR might influence EFL (English as a Foreign Language) learners’ vocabulary learning efficiency. To fill in this gap in the literature, the purpose of this study is to compare traditional English flash cards with the vocabulary learning method of Augmented Reality to see which English vocabulary learning is more efficient for elementary school students. The study was conducted at an elementary school in Taiwan, and the participants were 66 third grade pupils in total. The study was conducted at two stages in terms of data collection. At the first stage, the control and experimental groups took the same English vocabulary test without any teacher instruction as a pretest. At the second stage, the control group used flashcards to learn 20 target English words by themselves in 30 minutes. The experimental group adopted the Augmented Reality 3D effect of 20 target words by themselves in 30 minutes. After that, both groups took the same English vocabulary test again as a posttest. On the whole, Augmented Reality teaching effects apparently excel the effects of the traditional vocabulary learning methods. The results of this study have shown that the learning method of Augmented Reality was more efficient than the learning method using English flash cards at various proficiency levels (high, intermediate, and low) in terms of English vocabulary learning. The learning method of English flash cards had significant differences in high and low level groups as well as intermediate and
low level groups, with the exceptions of high and intermediate level groups. It is worth improving children's English vocabulary learning by using Augmented Reality in their daily lives in terms of mobile learning.

Keywords: elementary school students, Augmented Reality, English flash cards, English vocabulary learning

Introduction

With the advancement of technology and development of information, the 21\textsuperscript{st} century should be defined as an electronic century. Over the past few decades, computers have become more and more popular, the Internet has been ascendant, and digital data, digital life and digital learning have been merged into our life step by step, all of which have become routine occurrences that we must deal with every day. With globalization, all countries cannot but strive for enhancing the global competitiveness of their nations. On the other hand, technological equipment has become more and more advanced: there is knowledge and data in abundance on the Internet, digital teaching materials and content develop rapidly, and electronic whiteboards and electronic book downloading technology have become advanced as well, so that every country emphasizes the application of technology to school modernization and helps teachers and students to conduct teaching and learning in real classrooms (Hew and Brush, 2007). In addition, their fast transmission and extra-large memory capacity, and emerging innovative electronic products have been changing school “teaching” as well as “learning” (Kukulska-Hulme and Shield, 2008).

Currently, Augmented Reality is becoming ever more popular in a wide range of fields. According to Van Krevelen and Johnson (2010), real and virtual environments are seen as poles lying at opposite ends of a continuum, the middle of which is called “mixed reality”; the one closer to the real environment is Augmented Reality (AR), whereas the one closer to the virtual environment is Augmented Virtuality (AV). Augmented Reality (AR) is a technology extended from Virtual Reality (VR), also called Enlarged Reality or Extended Reality. As long as image input devices are applied, virtual objects and scenes will be overlapped in the real world, so that this allows users to feel being personally on the scene (Yuen, Yaoyuneyong, and Johnson, 2011). Augmented Reality can be applied to a wide range of areas, including learning materials, museums, entertainment experiences, medical treatments, etc. (Carmigniani et al., 2010). With the development
of digital technology, learners of this generation have become used to receiving diversified information via networks and digital multimedia channels (Perry, 2015). Besides, the development of new computer technology makes more room for teaching. Technology can be seen as technology-integrated teaching of teaching tools, helping solve students’ learning problems as well as enhancing their learning outcomes. Teaching patterns will evolve from traditional face-to-face instruction to Computer Assisted Instruction (CAI), and even to the highlighted information-integrated instruction (Santos et al., 2016).

In recent years, English teaching has been emphasized by various parties in Taiwan’s educational community. Not only has the Ministry of Education extended the English education to the third grade of elementary school, but the issue related to how to make children learn English efficiently and effectively has also become a focus topic these days. Integrating “edutainment” into our daily life is seen as the best way to help young children get used to English naturally. In the children’s learning process, plenty of teaching materials and media can assist them in learning activities as well as increasing efficiency and fun for the entire learning process. With the development of digital technology, the teaching media have become more diversified. Apart from enriching the entire learning content and the way of presentation, it is more important that new interactions can be brought into learning, and children can experience the learning content by means of more comprehensive learning methods, such as games. As a result, their learning effects can be intensified by multisensory stimuli.

English, the common language in the world, has received more and more attention from children’s parents. How to improve English skills has become an even more highlighted question by everyone. Accordingly, English learning atmosphere has also been widely spread, not only by books but also DVDs have increased dramatically. However, among these methods of improving English skills, many of them make learners easily bored. Owing to this, learners are always full of momentum and spirit when starting learning, but then their passion will dissipate after a while. If the English vocabulary which learners want to learn is not merely made into flashcards but also combines the method of Augmented Reality (AR), which expresses the meanings of the vocabulary with images and sounds, it will make vocabulary learning more vivid and interesting and help learners to more easily memorize the vocabulary. In addition, nowadays more and more studies indicate that using multimedia to assist language teaching can really help learners to promote their language acquisition. In addition to accelerating the efficiency of learners’ English learning, how to enhance learners’ learning interest as well as their learning motivation has also become a trend for scholars to discuss.
The sound and light effects and creative design provided by multimedia allow for arousing learners’ extrinsic motivation. On the other hand, the multimedia created by high-quality teaching design can make learning more effective and trigger learners’ intrinsic motivation. Besides, multimedia interactions, individual learning, etc., can also activate learners’ motivation. Using lively interaction flash cards with 3D images to recognize English vocabulary and reading vocabulary to intensify users’ listening and pronunciation can make users easily increase their interest in learning English and boost their learning efficiency (Rose and Bhuvaneswari, 2014). Hence, the purpose of this study was to compare the use of traditional English flash cards and the vocabulary learning method of Augmented Reality to see which of these English vocabulary learning methods is more efficient for elementary school pupils.

The research questions were as follows:
1. How does the use of traditional English flash cards compare with the vocabulary learning method of Augmented Reality in terms of increased English learning efficiency among elementary school third grade pupils?
2. How does the vocabulary learning method of Augmented Reality influence elementary school third grade pupils’ English vocabulary learning efficiency among high, intermediate, and low proficiency groups?
3. How do English flash cards influence elementary school third grade pupils’ English vocabulary learning efficiency among high, intermediate, and low proficiency groups?

**Literature Review**

**The Trend of Mobile Learning of English in Taiwan**

In recent years, the Ministry of Education has actively promoted the mobile learning project, especially in elementary and high school education, so mobile learning is in progress in the Taiwanese education system. Taiwan is a leading producer of mobile devices (e.g., tablet PCs and smart phones) and is second to none in the academic research field of mobile learning. Mobile devices make it possible for information technology to be integrated into the teaching domain, and using them is the way of teaching that is controlled by the teacher in a regular classroom. The designated one-to-one learning model used in a computer classroom can extend to learning conducted in a regular classroom and outdoors, so that the real one-to-one learning model can be implemented (Huang, 2009). According to the definition made by Godwin (2011), mobile learning means conducting electronic
teaching via mobile devices. The emergence of this new type of learning allows for more diversified ways of learning. As long as someone is willing to learn, he/she can start learning at any time and in any place to efficiently enrich his/her individual knowledge.

According to the research results over the years, the received characteristics of mobile learning are listed as follows (Joseph and Uther, 2009; Kukulska-Hulme and Shield, 2008; Roca and Gagne, 2008; Chen and Hsu, 2008; Bordbar, 2010; Sole, Calic, and Neijmann, 2010):

1. Setting up a student-centered learning model

   Students can use mobile carriers to conduct their individual learning, such as repetitive practices, tests, etc. Mobile carriers also can record their learning processes and outcomes, providing students with suitable learning guidelines by means of system functions and teaching contents.

2. Digital camera function

   The contemporary mobile carriers have the digital camera function. If this function is integrated into the learning system design, teachers can collect and record learning data by means of photo-taking, video-taking, etc., and can instantly transmit data via the wireless networks.

3. Teaching scenarios are not restricted and information is accessible

   Mobile learning is not limited by space, so teachers can bring the teaching scenario outdoors and merge information into teaching, and can even connect teaching materials to network under any circumstances via wireless networks.

As mentioned above, the trend of mobile learning is currently very popular in Taiwan, especially in learning English. The significant role of learning English has greatly contributed to the movement of teaching vocabulary in English as a foreign language. There is no denying that vocabulary is the most important factor for learners of English as a second language and foreign language. English vocabulary plays a basic and significant role of learning English. Without vocabulary base, it is difficult to study reading, listening, speaking, or writing (Akbulut, 2007). In vocabulary learning, it is relatively difficult to learn new words, to keep these words in memory and to recall them when they are needed. With the development of innovative teaching methods of multimedia, vocabulary learning methods can be a more interesting and colorful process. It seems difficult to learn a bulk of words just by looking words up in dictionaries. Therefore, adapting animated pictures to learning new vocabulary is necessary (Arikan and Taraf, 2010). When learners try to explore the meaning of words by associating the scenes that they are looking at on the screen, they learn the pronunciation of vocabulary and the written form of words simultaneously. To learn vocabulary with animated pictures is thought to
make the learning process much easier for young students (Koyooglu and Akbas, 2011). In addition, adapting vivid interaction applications of Augmented Reality (AR) with 3D images to recognize English vocabulary and reading vocabulary to intensify listening, reading, and pronunciation can make users easily increase their interest in learning English and boost their learning efficiency (Rose and Bhuvaneswari, 2014).

Method

Participants
The study was conducted at an elementary school in Taiwan, and the participants were 66 third grade pupils. On the whole, the pupil group had the same characteristics in terms of their English proficiency. 20 target words were chosen from Happy Playground Learning Box, which is produced by Happito Creative Company. Basically, these 20 words are basic level for students, and all the words are nouns. The researcher adopted these 20 target words to assess the pupils in the pre-test. The total possible pretest score was 100. Based on the results of the pretest, the pupils were classified into three English vocabulary proficiency groups: low, intermediate, and high. 22 pupils who received scores below 60 were classified into the low level group; 26 pupils between 60 and 79 points were classified into the intermediate level group; and 18 pupils who obtained above 80 points were classified into the high level group. According to the stratified random sampling, among the high level group, 9 pupils were randomly assigned to the experimental group (using AR to learn English vocabulary) and the remaining 9 pupils who used the traditional vocabulary learning method (using flashcards to learn English vocabulary) were assigned to the control group. Among the intermediate level group, 13 pupils were randomly assigned to the experimental group (using AR to learn English vocabulary) and the remaining 13 pupils who used the traditional vocabulary learning method (using flashcards to learn English vocabulary) were assigned to the control group. Among the low level group, 11 pupils were randomly assigned to the experimental group (using AR to learn English vocabulary) and the remaining 11 pupils who used the traditional vocabulary learning method (using flashcards to learn English vocabulary) were assigned to the control group.

Materials
The 20 target words were chosen from Happy Playground Learning Box, which is produced by Happito Creative Company. Basically, these 20 words are basic
A Comparison of EFL Elementary School

level for students, and all the words are nouns. In order to make the pupils learn all English vocabulary with letters of the alphabet, we made some letters of the alphabet into flashcards, which were presented to them as displayed in Figure 1, including Chinese and English names and pictures which represent the vocabulary. As mentioned above, the control group used this method to learn English vocabulary. With respect to the experimental group, the participants were asked to download the APP of AR to their smart phones, so that they could view the Augmented Reality 3D effect of the vocabulary on the screens of their cell phones. Not only can the English vocabulary be displayed, but also sound effects and actions can be made via learners’ gentle touches with their fingers. Sound effects refer to the pronunciation of the vocabulary. The Augmented Reality 3D effect of the vocabulary on the screen is presented in Figure 2.

![Figure 1. An example of English Vocabulary Flashcard](image1)

![Figure 2. An example of augmented reality information](image2)
Data Collection

The pupils’ English vocabulary was measured with the use of a multiple-choice test. The test had 20 items, with four choices for each item. Scores ranged from 0 to 100 in the multiple-choice test. The study was conducted in two stages in terms of data collection. At the first stage, the control and experimental groups took the same English vocabulary test without any instruction from the teacher as the pretest. At the second stage, the control group used flashcards to learn 20 target English words by themselves in 30 minutes. The experimental group adopted the Augmented Reality 3D effect of the 20 target words by themselves in 30 minutes. After that, both groups took the same English vocabulary test again as the posttest.

Data Analysis

In order to analyze the study, a paired-sample t-test was conducted to evaluate the effects of the traditional English flashcards and the learning method of Augmented Reality on the pupils’ English vocabulary learning. A One-way ANOVA was used to evaluate the results of the control (traditional English flashcards) and experimental (the learning method of Augmented Reality) groups among the low, intermediate, and high level learners.

Results

Overall, a paired-sample t-test showed that both the method of learning through the use of traditional English flashcards and the learning method of Augmented Reality had a significant effect on English vocabulary learning, t(65)=3.53, p<.0001 (cf., Table 1).

<table>
<thead>
<tr>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.35</td>
<td>11.01</td>
<td>3.53</td>
<td>65</td>
<td>.000*</td>
</tr>
</tbody>
</table>

In addition, the results also showed that the learning method of Augmented Reality was more efficient than the learning with English flashcards among the various proficiency levels (high, intermediate, and low levels) with respect to English vocabulary learning (cf., Table 2).
Table 2. A comparison of English flashcards (FC) and augmented reality (AR) training effect on each proficiency level (high, intermediate, and low)

<table>
<thead>
<tr>
<th></th>
<th>AR</th>
<th></th>
<th>FC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M(SD)</td>
<td>95% CI</td>
<td>M(SD)</td>
<td>95% CI</td>
</tr>
<tr>
<td>High</td>
<td>5.83(4.33)</td>
<td>(2.50, 9.16)</td>
<td>1.67(3.06)</td>
<td>(-0.69, 4.02)</td>
</tr>
<tr>
<td>Inter</td>
<td>13.85(4.16)</td>
<td>(11.33, 16.36)</td>
<td>6.15(4.16)</td>
<td>(3.64, 8.67)</td>
</tr>
<tr>
<td>Low</td>
<td>20.68(6.43)</td>
<td>(16.36, 25.00)</td>
<td>12.50(7.16)</td>
<td>(7.69, 17.31)</td>
</tr>
</tbody>
</table>

Note: CI refers to confidence interval

A One-way ANOVA identified that the learning method of Augmented Reality had a significant effect on the pupils’ English vocabulary learning among the various levels (low, intermediate, and high), \( F (2,30)=21.23, p<.0001 \) (cf., Table 3). Besides, the results also showed that the high proficiency level group was higher than the intermediate and low level groups. The intermediate level group was higher than the lower level group (cf., Table 4).

Table 3. One-way ANOVA (comparison of pupils' English vocabulary learning efficiency, using augmented reality)

<table>
<thead>
<tr>
<th>Sources</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>between groups</td>
<td>2</td>
<td>1091.55</td>
<td>545.78</td>
<td>21.23</td>
<td>&lt; .0001</td>
</tr>
<tr>
<td>within groups</td>
<td>30</td>
<td>771.33</td>
<td>25.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>total</td>
<td>32</td>
<td>1862.88</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4. Comparison of pupils’ English vocabulary learning efficiency among various proficiency levels (high, intermediate, and low), using augmented reality

<table>
<thead>
<tr>
<th>Proficiency groups</th>
<th>Mean Differences</th>
<th>95% CI</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>high vs. intermediate</td>
<td>8.01</td>
<td>(2.35, 13.68)</td>
<td>*</td>
</tr>
<tr>
<td>high vs. low</td>
<td>14.85</td>
<td>(8.98, 20.72)</td>
<td>*</td>
</tr>
<tr>
<td>intermediate vs. low</td>
<td>6.84</td>
<td>(1.49, 12.19)</td>
<td>*</td>
</tr>
</tbody>
</table>

Note: * refers to \( P < .005 \)

On the other hand, a one-way ANOVA identified that the learning with the use of English flashcards also had a significant effect on the pupils’ English vocabulary learning among the levels (low, intermediate, and high groups), \( F (2,30)=11.28, \)
The high and intermediate level groups were better than the low level group. Interestingly, there was no significant difference between the high and intermediate level groups (cf., Table 6).

### Table 5. One-way ANOVA (comparison of pupils’ English vocabulary learning efficiency when using flashcards)

<table>
<thead>
<tr>
<th>Sources</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>between groups</td>
<td>597.00</td>
<td>2</td>
<td>298.99</td>
<td>11.28</td>
<td>0.0002</td>
</tr>
<tr>
<td>within groups</td>
<td>795.19</td>
<td>30</td>
<td>26.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>total</td>
<td>1393.18</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 6. Comparison of pupils’ English vocabulary learning efficiency among various proficiency levels (high, intermediate, and low) when using flashcards

<table>
<thead>
<tr>
<th>Proficiency groups</th>
<th>Mean Differences</th>
<th>95% CI</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>high vs. intermediate</td>
<td>4.49</td>
<td>(-1.26, 10.24)</td>
<td></td>
</tr>
<tr>
<td>high vs. low</td>
<td>10.83</td>
<td>(4.87, 16.79)</td>
<td>*</td>
</tr>
<tr>
<td>intermediate vs. low</td>
<td>6.35</td>
<td>(0.92, 11.78)</td>
<td>*</td>
</tr>
</tbody>
</table>

Note: * refer to $P < .05$

### Discussion and Conclusions

On the whole, the results of this study show that the Augmented Reality learning method was more efficient than the learning with the use of English flashcards among the various proficiency levels in terms of English vocabulary learning. In other words, Augmented Reality teaching effects apparently excel the effects of the traditional vocabulary learning methods. Furthermore, it has a significant effect on English learning for the school children of the highest and the lowest advancement levels. As mentioned above, the results of this study are consistent with Lin’s (2009) study. On the contrary, learning with the use of English flashcards showed significant differences between the high and low level groups as well as intermediate and low level groups, with the exception of the high and intermediate level groups. It is obvious that the Augmented Reality learning method is more efficient and suitable for various proficiency level groups with respect to learning English vocabulary in this study.
Over the past few years, with the arrival of the global village era and the development of Internet technology, it has become relatively important to have common language skills to be able to effectively communicate with people worldwide. Since the range of technology applications has become increasingly wider, making use of the growth of information technology to increase the efficiency of English learning and discarding the traditional way of English learning have become a trend. Generally speaking, the multimedia learning system of combining words, graphics, voices, and animations has interactive and learner-centered features, providing an ideal learning environment. During the learning process, learners can select the learning content and schedule and repetitively use it based on their needs, which can help advance their learning efficiency.

The outdated traditional learning methods have been unable to satisfy the contemporary learners’ needs. Therefore, new technology should be used to make education more attractive and efficient and enable the teaching environment to become more diversified. Combining AR game-based learning is also a future trend, a way of learning integrating virtuality with reality as well as edutainment, which is certainly full of interest, more situational, and combined with hands-on activities.

The AR interactive English vocabulary learning method is used to help users conduct their learning. This AR game-based English vocabulary learning system may not be able to help learners learn some sophisticated English vocabulary, whereas it is able to trigger beginners’ interest in learning English. Although the bilingual teaching system tends to employ the teaching of cartoon images, we hope children can directly learn real objects. When hearing an English word, they will associate it with its cartoon image first and then with the real image. Take “mouse,” for example. When hearing “mouse”, they will associate it with its cartoon image first and then think of what a real mouse looks like. Now that children seem to be more and more out of touch with nature and more and more unable to see the things found in nature, we intend to use this system to help children get to know more about nature. Applying AR to learning English vocabulary can make children happier due to its being more entertaining, which results in better learning, and thus children can receive the best learning effects from games. When they see a picture or a real object, such as a cat, a dog, an elephant, a lion, etc., they can subconsciously associate this object with its Chinese and English names and learn from the games unconsciously. It can make children fond of learning, help them repetitively learn by themselves, and let them forget that they are playing and learning from the games. If they forget what they have learned, they can go back
and check it, so that they do not need their teacher to stay with them to repeatedly teach the same lessons.

References


Best Model Selection for Determinants of Students’ Academic Performance at Tertiary Level in Azad Jammu and Kashmir, Pakistan

DOI: 10.15804/tner.2018.51.1.05

Abstract
The presented study is intended to suggest the best model to predict students’ academic performance at university level. For this purpose, primary data was collected from 400 undergraduate and graduate students of eight departments of Mirpur University of Science and Technology (MUST), which were selected through stratified random sampling. CGPA is used as an indicator of students’ academic performance. Stepwise linear regression is used to select the best model to predict students’ academic performance at tertiary level. The final model selected through stepwise regression includes six variables: the student’s IQ, ownership of AC, gender, geographic location, self-study hours and ownership of fridge as significant predictors of students’ academic performance at tertiary level. IQ, ownership of assets and self-study hours are found to have a positive effect on CGPA while being male and the distance of the household to nearest market are found to have a negative effect on CGPA.

Keywords: academic performance, model selection, CGPA, socioeconomic status

1. Introduction
It is an established fact that the future wellbeing of youth depends heavily on their educational achievements (McLanahan & Sandefur, 1994). Educational achievements determine an individual’s potential of earning income, his/her
chances in life and wellbeing (Battle and Lewis, 2002). Therefore, it becomes important to understand what determines students’ educational outcomes. Academic performance means the success and failure that students face during their study (House, 2002). Academic performance also means students’ ability to write and read that they have learnt in the classroom (Kadeghe, 2000). Grade Point Average (GPA) has most frequently been used as the measure of student academic performance. Gupta and Maksay, 2014; Seow et al., 2014; Remali et al., 2013; Mushtaq and Khan, 2012; Applegate and Daly, 2006 used GPA to measure students’ academic performance.

In literature, the following variables are extensively used as determinants of academic performance. Laidra et al. (2007) and Jensen (1998) found that intelligence plays a positive role in students’ academic achievement. Several studies focused on the role of personality traits as determinants of academic performance. Personality traits are the characteristics which make individuals different from others (Colman, 2003). Ikpi et al. (2014) found that agreeableness and conscientiousness play a significant role in students’ academic achievement. McCrae and Costa (1988) also found that students who had scored low on agreeableness performed poorly in their academic subjects. Richardson and Abraham, 2009; Laidra et al., 2007 used the Five-Factor Model (FFM) and found significant effects of personality traits on academic performance.

Another strand of studies emphasized demographic characteristics as determinants of academic performance. Cole and Espinoza (2008) and Jaeger and Eagan (2007) found that gender significantly affects students’ academic performance. Similar results were obtained by Kara et al. (2009); Alfan & Othman (2005). Kekule et al. (2017), too, found that girls have more curiosity. Keith, et al. (2006) and Krause (2005) found age to be positively associated with academic performance. However, Kaur et al. (2010) found that age is an insignificant variable in explaining students’ academic performance. Considine and Zappala (2002) found geographic location to significantly explain students’ academic performance. However, Ali et al. (2013) did not find any significant effect of geographic location on students’ academic performance.

Parental characteristics are another set of determining factors of academic performance. Enweriji et al. (2017) found a significant role of parental involvement in children’s academic performance. Kassim et al. (2011) found that the level of parents’ education plays a significantly positive role. Hijazi and Naqvi (2006) and Zhan (2005) also found positive effects of mothers’ education on students’ academic performance. Hijazi and Naqvi (2006), however, found a negative effect of income on students’ academic performance, whereas Grinstein-Weiss
et al. (2009) found that income does not play any role in determining students’ academic performance.

Extensive research has been carried out on the impact of family socioeconomic status on students’ academic achievements. Ali et al. (2013) found that family socioeconomic status significantly affects student academic performance. Akhtar (2012); Raychauduri et al. (2010); Considine and Zappala (2002) also found a positive impact of socioeconomic status on students’ performance.

The study aimed to select an econometric model to find out which of the above-mentioned variables are best predictors of student academic performance at Mirpur University of Science and Technology (MUST), AJ&K, Pakistan. CGPA (Cumulative Grade Point Average) is used as a yardstick to examine students’ academic performance. A variety of variables related to students’ personal and demographic characteristics and family socioeconomic status were used, which were most frequently used in literature. We used stepwise regression analysis to find the best model for predicting students’ academic performance. It was found that students’ IQ, ownership of household assets (AC and fridge), and self-study hours positively affect students’ CGPA at university, whereas being male and the distance to nearest market negatively affect students’ CGPA. Our findings reveal what policies and strategies should be employed to improve the academic performance of the students at university level.

2. Material And Methods

2.1 Data

Stratified random sampling technique was used to collect primary data from a total of 410 students (205 from undergraduate and graduate degree programs) from Mirpur University of Science and Technology (MUST), Mirpur, AJK, Pakistan.

2.2 Selected Variables

To select the best model that predicts students’ academic performance, a pool of variables was created based on our discussion in section 1. The selected variables are presented in Table 1.
Table 1. Selected Variables

<table>
<thead>
<tr>
<th>Category</th>
<th>Variable</th>
<th>Measurement</th>
<th>Literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable</td>
<td>CGPA</td>
<td>0 to 4 (0= Lowest, 4= Highest)</td>
<td>Applegate and Daly, 2006; Abdullah, 2005</td>
</tr>
<tr>
<td>Explanatory Variables</td>
<td>Gender</td>
<td>Binary (0= Female, 1= Male)</td>
<td>Ali et al., 2013; Cole and Espinoza, 2008; Jaeger and Eagan, 2007</td>
</tr>
<tr>
<td></td>
<td>Type of school (previously attended)</td>
<td>Binary (0= Government, 1= Private)</td>
<td>Ali et al., 2013 and Considine and Zappala, 2002</td>
</tr>
<tr>
<td></td>
<td>IQ</td>
<td>Marks in previous degree (0% to 100%)</td>
<td>Mudasir and Yatu, 2013; Zax and Rasees, 2006</td>
</tr>
<tr>
<td></td>
<td>Self-Study Hours (weekly)</td>
<td>Scale</td>
<td>Gupta and Maksay, 2014; and Ali et al., 2013</td>
</tr>
<tr>
<td></td>
<td>Mothers’ Education (Years)</td>
<td>Scale</td>
<td>Hijazi &amp; Naqvi, 2006</td>
</tr>
<tr>
<td></td>
<td>Income (Annual)</td>
<td>Scale</td>
<td>Ali et al., 2013; and Hijazi and Naqvi, 2006</td>
</tr>
<tr>
<td></td>
<td>Geographical location</td>
<td>Distance to nearest market (KM) Scale</td>
<td>Ali et al., 2013; and Considine and Zappala, 2002</td>
</tr>
<tr>
<td></td>
<td>Household Assets</td>
<td>Binary (0= No, 1= Yes)</td>
<td>Grinstein-Weiss et al., 2009; Page-Adams &amp; Sherraden, 1997</td>
</tr>
<tr>
<td>i) Air Conditioners (AC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii) Fridge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii) No rooms in house</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.3 Best Model Selection
Following Hassan et al. (2016), Chin and Fitrianto (2013) and Nasir (2012), Stepwise Regression Method was used for selecting the best model for the present study. Stepwise regression is a method in which entry or deletion of regressors is carried out automatically based on some predetermined criteria. These criteria can be the values of: F-statistic, t-statistic, Adjusted R2, Akaike information criteria (AIC), Bayesian information criteria (BIC), Mallows's Cp or false discovery rate, etc. Stepwise regression ensures that the best regressors stay in a model and all redundant regressors are dropped out from it (Draper and Smith, 2003). The variables shown in Table 1 are used for this purpose.
3. Results And Discussion

3.1 Descriptive Statistics

Table 2 presents the students’ mean CGPA by their characteristics. The results show that the mean CGPA of the female students is higher than that of the male ones (3.30 compared to 3.19). Alfan and Othman (2005); Considine and Zappala (2002) obtained similar results. However, Nyikahadzoi et al. (2013); Kara et al. (2009) found that male students outperform female ones. The students who previously attended public schools were found to perform poorly compared to their counterparts who previously attended private schools (with average CGPA of 3.17 compared to 3.30).

Table 2. Mean CGPA of Students by Various Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean CGPA</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3.19</td>
<td>0.383</td>
<td>139</td>
</tr>
<tr>
<td>Female</td>
<td>3.30</td>
<td>0.417</td>
<td>261</td>
</tr>
<tr>
<td>Type of School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>3.30</td>
<td>0.401</td>
<td>279</td>
</tr>
<tr>
<td>Govt.</td>
<td>3.17</td>
<td>0.414</td>
<td>121</td>
</tr>
<tr>
<td>AC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>3.19</td>
<td>0.398</td>
<td>255</td>
</tr>
<tr>
<td>Yes</td>
<td>3.39</td>
<td>0.394</td>
<td>145</td>
</tr>
<tr>
<td>Fridge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>3.01</td>
<td>0.471</td>
<td>15</td>
</tr>
<tr>
<td>Yes</td>
<td>3.27</td>
<td>0.403</td>
<td>385</td>
</tr>
<tr>
<td>No Rooms in house</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2–3</td>
<td>2.77</td>
<td>0.440</td>
<td>47</td>
</tr>
<tr>
<td>4–5</td>
<td>3.24</td>
<td>0.439</td>
<td>166</td>
</tr>
<tr>
<td>6–8</td>
<td>3.29</td>
<td>0.371</td>
<td>144</td>
</tr>
<tr>
<td>9–11</td>
<td>3.33</td>
<td>0.382</td>
<td>31</td>
</tr>
<tr>
<td>12–14</td>
<td>3.41</td>
<td>0.319</td>
<td>12</td>
</tr>
<tr>
<td>IQ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40.00–50.00</td>
<td>3.10</td>
<td>0.411</td>
<td>42</td>
</tr>
<tr>
<td>50.10–60.00</td>
<td>3.15</td>
<td>0.401</td>
<td>140</td>
</tr>
<tr>
<td>60.01–70.00</td>
<td>3.30</td>
<td>0.412</td>
<td>116</td>
</tr>
<tr>
<td>70.01–80.00</td>
<td>3.41</td>
<td>0.410</td>
<td>68</td>
</tr>
<tr>
<td>80.01–90.00</td>
<td>3.51</td>
<td>0.414</td>
<td>34</td>
</tr>
<tr>
<td>Self-Study Hours (Weekly)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1–3</td>
<td>3.23</td>
<td>0.409</td>
<td>119</td>
</tr>
<tr>
<td>4–6</td>
<td>3.30</td>
<td>0.410</td>
<td>130</td>
</tr>
<tr>
<td>7–10</td>
<td>3.17</td>
<td>0.411</td>
<td>64</td>
</tr>
<tr>
<td>11–30</td>
<td>3.34</td>
<td>0.411</td>
<td>87</td>
</tr>
<tr>
<td>Variable</td>
<td>Mean CGPA</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------</td>
<td>------</td>
<td>----</td>
</tr>
<tr>
<td>Mother’s Education (Years)</td>
<td>0–4</td>
<td>3.24</td>
<td>0.409</td>
</tr>
<tr>
<td></td>
<td>5–9</td>
<td>3.24</td>
<td>0.410</td>
</tr>
<tr>
<td></td>
<td>10–14</td>
<td>3.31</td>
<td>0.410</td>
</tr>
<tr>
<td></td>
<td>15–16</td>
<td>3.24</td>
<td>0.410</td>
</tr>
<tr>
<td>Income (Annual)</td>
<td>0–300000</td>
<td>3.25</td>
<td>0.409</td>
</tr>
<tr>
<td></td>
<td>300001–500000</td>
<td>3.28</td>
<td>0.411</td>
</tr>
<tr>
<td></td>
<td>500001–800000</td>
<td>3.22</td>
<td>0.410</td>
</tr>
<tr>
<td></td>
<td>800001–2400000</td>
<td>3.33</td>
<td>0.410</td>
</tr>
<tr>
<td>Geographic location (Distance to nearest market in KM)</td>
<td>0–1</td>
<td>3.32</td>
<td>0.409</td>
</tr>
<tr>
<td></td>
<td>1.1–3</td>
<td>3.25</td>
<td>0.410</td>
</tr>
<tr>
<td></td>
<td>3.1–5</td>
<td>3.26</td>
<td>0.412</td>
</tr>
<tr>
<td></td>
<td>5.1–30</td>
<td>3.22</td>
<td>0.410</td>
</tr>
</tbody>
</table>

The students from the households with AC have substantially higher average CGPA than those from the households without AC (3.39 compared to 3.19). Similar results were obtained for the ownership of fridge. Another important measure of household economic status, i.e., the size of family house as measured by the number of rooms in the house, was also found to be positively correlated with CGPA. Grinstein-Weiss et al. (2009) found a positive impact of socioeconomic status on students’ academic performance.

The students’ intelligence was found to have the most profound and visible effect on their academic performance at university. The students with higher IQ were found to perform better at university. The positive impact of intelligence on students’ academic performance was also found by Laidra et al. (2007); and Jensen (1998). The students’ mean CGPA was also found to increase with an increase in their self-study hours. These results are in accordance with the results of Gupta and Maksy (2014) and Ali et al. (2013).

Contrary to what was expected, mothers’ education was not found to have any significant effect on the students’ academic performance. Hijazi and Naqvi (2006), on the other hand, found positive effects of mothers’ education on students’ academic performance. Income was not found to play any significant role in determining students’ academic performance. Grinstein-Weiss et al. (2009) also found an insignificant effect of income on students’ academic performance. However, Ali et al. (2013) and Akhtar (2012) found a positive effect of income on students’ academic performance, whereas Hijazi and Naqvi (2006) found a negative effect of income on students’ academic performance.
Distance to market (measure of geographic location) was found to have a negative impact on students’ mean CGPA. Considine and Zappala, (2002) also found a positive impact of living in urban areas on students’ performance. Ali et al. (2013), however, found that living in an urban area does not have any significant effect on students’ academic performance.

### 3.2 Best Model for Determinants of Students’ Academic Performance

Results of stepwise regression are presented in Table 3.

**Table 3. Best Model for Students’ Academic Performance**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Sig. Tolerance</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SE</td>
<td></td>
<td>VIF</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>2.47</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>IQ</td>
<td>0.01</td>
<td>0.00</td>
</tr>
<tr>
<td>2</td>
<td>(Constant)</td>
<td>2.45</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>IQ</td>
<td>0.01</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>AC</td>
<td>0.18</td>
<td>0.04</td>
</tr>
<tr>
<td>3</td>
<td>(Constant)</td>
<td>2.40</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>IQ</td>
<td>0.01</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>AC</td>
<td>0.19</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>-0.19</td>
<td>0.04</td>
</tr>
<tr>
<td>4</td>
<td>(Constant)</td>
<td>2.45</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>IQ</td>
<td>0.01</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>AC</td>
<td>0.20</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>-0.18</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td>Geographic location</td>
<td>-0.01</td>
<td>0.00</td>
</tr>
<tr>
<td>5</td>
<td>(Constant)</td>
<td>2.40</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>IQ</td>
<td>0.01</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>AC</td>
<td>0.20</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>-0.18</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td>Geographic location</td>
<td>-0.01</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>Self-Study Hours</td>
<td>0.01</td>
<td>0.00</td>
</tr>
</tbody>
</table>
Table 3 presents the results of stepwise regression conducted to select the best model for the determinants of students’ academic performance at university. The students’ IQ was found to be the most important predictor of their academic performance at university and therefore it was the first to enter the model. Laidra et al. (2007) also found that students’ IQ is the most important predictor of students’ academic performance. Ownership of AC was found the second most important predictor of the students’ academic performance at university and therefore it was the second to enter the model, along with IQ. This entry of AC, an asset, in the second place implies that households assets play a pivotal role in students’ academic performance even at tertiary level. The role of gender in determination of the students’ academic performance was found the third most important predictor of their academic performance, so it was the third to enter the model.

Geographic location as measured by distance to market was found to be the fourth important variable to determine the students’ academic performance. Self-study hours and ownership of fridge entered the model. So, in the final model, IQ, AC, Gender, Geographic Location, Self-Study Hours, and Ownership of Fridge are included. According to stepwise regression, the above-mentioned six variables are the most important predictors of the students’ academic performance. Among the
six selected variables, in the final model three of them (AC, Geographic Location, fridge) measure the economic wellbeing of households. This shows the importance of parental wealth and family resources in determination of the students’ academic performance. Four variables, i.e., type of school previously attended, number of rooms in house, mothers’ education and income are insignificant variables in determining the students’ academic performance. Since the values of VIF (variance inflation factors) are too low, there is no problem of multicolinearity in our data.

Thus, based on stepwise regression analysis, the study presents the following model:

\[
CGPA = 2.20 + 0.01IQ + 0.19AC - 0.17Gender - 0.01\text{Geographic Location} + 0.01\text{Self Study Hour} + 0.21\text{Fridge}
\] (3.1)

The results of the final selected model show that the students’ IQ positively affects their CGPA at university. The student’s CGPA increases by 0.1 when the student’s IQ increases by 1. Ownership of AC also positively affects the students’ CGPA. The students’ CGPA increases by 0.19 points if there is AC in their household. The students’ gender of also affects their academic performance. Being male negatively affects CGPA by 0.17. Location of the students’ household was also found to affect the students’ academic performance. As distance of the household increases by one kilometer to the nearest market, CGPA reduces by 0.01. The students’ CGPA was also found to be positively affected by how much time they devote to their self-study at home. A one-hour increase of self-study a week caused CGPA to increase by 0.01. Ownership of fridge, another measure of household wealth, was found to positively affect the students’ CGPA. The students from the households owning a fridge have a higher CGPA by 0.21.

4. Conclusion and Policy Suggestions

The presented study was intended to suggest the best model to predict students’ academic performance at the tertiary level of education. CGPA was used as the indicator of students’ academic performance. A pool of variables, related to family socioeconomic status, the students’ personality traits and demographic characteristics, was created, which was most frequently used in previous studies. Then stepwise regression was used to find the best model for predicting the students’ academic performance. It was found that the students’ IQ, ownership of household
Best Model Selection for Determinants

assets (AC and fridge), and self-study hours positively affected the students' CGPA at university, while being male and distance to nearest market negatively affect the students' CGPA.

Ownership of household assets was found to positively affect the students' academic performance. Therefore, it is suggested that policies which encourage assets accumulation by households be adopted. These will be beneficial for students' academic performance in the long run. Students should be encouraged to devote more hours to self-study.

References


Is Technology a Magic Wand?
When Tablets’ affordances meet Teaching Practices:
Insights on Didactic Design

Abstract
This text presents and discusses results of empirical research conducted during 3 school semesters (1.5 of school year) in a primary school in Poland. The research focused on the introduction of tablets (iPads) to didactic design and aimed at the observation of learning processes of the entire school community in connection with the appearance of a new educational actor. We used a qualitative research approach, mainly video-ethnography (60 hours of recorded material). This research approach resulted in the identification of maps of teaching and learning practices and their meanings in the changing school field.

Keywords: mobile technology, teaching, didactic design, SAMR model, transformation

Introduction
Analyses of the integration of technology into classrooms have a long tradition in research (Pachler, Bachmair, Cook, Kress, 2010; Pegrum, 2014) and a well tried and tested set of research approaches (Cerratto-Pargman, Nouri, Milrad, 2017). When analysing the existing corpus of empirical research, it seems that studies insufficiently represent the process of changes taking place in the learning and teaching practice in a longer perspective, at different stages of the process of the
appropriation of mobile devices (Pegrum, 2014). This article aims at the provision of knowledge and a new insight into the learning and teaching practices in the classroom in a Polish primary school observed over a longer perspective, i.e., during three school semesters.

**Theoretical framework: didactic design**

For the purposes of our research, we adopted the mixed theoretical framework developed in the field of digital didactic design and by Puentadura (2014). The process of analyses covers three components: teaching, learning, and the integration of technology (Jahnke, Bergström, Mårell-Olsson, Häll, Kumar, 2017). It is worth analysing the mutual relationship between the following elements:

a) type of adopted educational goals;

b) type of planned learning actions;

c) use of didactic resources, including technologies;

d) anticipated role of the learner;

e) anticipated role of the teacher;

f) assessment and feedback.

The SAMR model, which makes it possible to take into account the relationship between the educational goals and the planned use of technology, i.e., various manners of the integration of technology into the processes of learning in the classroom, is another theoretical source.

The SAMR model developed by Puentedura (2014), in which the author defined several levels of the integration of technology into the education process: substitution (S), augmentation (A), modification (M) and redefinition (R), seems to be helpful in the understanding of the place, role and importance of technology at school.

**Research Methodology**

In order to broaden the knowledge on what actions emerge in the tablet-mediated classroom, and how these actions change over time, we carried out empirical research in a primary school located in a city in the region of Pomerania, northern Poland.

In this article we are referring to one main research question:

What is the map of teaching and learning practices at different stages of the process of the introduction of new technologies into a school?
Sampling

The school we selected for research was chosen in view of the fact that in 2015 it decided to invest in wireless internet connectivity and to purchase Air iPads (using their own financial means), which were to be used as a part of the 1:1 model. For the purposes of our research, we selected teachers who volunteered to conduct classes using tablets. In this school, women constitute over 90% of the teaching staff. A detailed structure of the sample is presented in Table 1.

<table>
<thead>
<tr>
<th>Teacher symbol</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1 (mathematics)</td>
<td>59 years</td>
</tr>
<tr>
<td>T2 (Polish)</td>
<td>58 years</td>
</tr>
<tr>
<td>T3 (IT)</td>
<td>45 years</td>
</tr>
<tr>
<td>T4 (English)</td>
<td>34 years</td>
</tr>
<tr>
<td>T5 (nature)</td>
<td>29 years</td>
</tr>
<tr>
<td>T6 (religion)</td>
<td>27 years</td>
</tr>
</tbody>
</table>

The collection of empirical data was commenced in September 2015 and was completed in December 2016.

Data collection method

We participated in the collection of more than 60 classroom observations documented with field notes and videos showing the lessons (more than 60 hours of video material) during three school semesters (Derry, Pea, Barron, Engle, Erickson, Goldman, Hall, Koschmann, Lemke, Gamon-Sherin, Sherin, 2010). During this time, the same groups of learners and the same teachers were observed, which made it possible for us to maintain a certain continuum and document the real changes in the ways tablets are used for educational purposes within the existing framework and in the longitudinal perspective.
Operationalisation of the adopted theoretical models – development of the coding scheme

The coding scheme originates from the didactic design theory extended with the SAMR model, from which the names of the analysed categories were taken (from A to G). Then, on the basis of knowledge on the stages of advanced learning strategy and the possible stages of the integration of technologies in the classroom, values (on a 1–5 scale) symbolising identifiable and separate ranges of the actions of teachers and learners, and the manner of the use of technology during classes were assigned. The coding scheme containing the area of variation of the observable practices is presented in Table 2.

Table 2. Coding scheme

<table>
<thead>
<tr>
<th>Category</th>
<th>Description of the adopted coding scheme</th>
</tr>
</thead>
</table>
| A. Type of adopted educational goals | 1. unclear; coverage of the lesson topic  
2. provision of knowledge, consolidation of knowledge/ skills  
3. search for information and its use within the framework defined by the teacher  
4. search for information and its independent processing, recontextualisation, etc.  
5. production of knowledge in a new form/shape |
| B. Type of executed learning actions | 1. individual watching of illustrative materials (presentation prepared by the teacher)  
2. individual/group exercises, consolidation of skills  
3. individual/group activity consisting in the reorganisation of knowledge under the teacher’s control  
4. group activity consisting in autonomous processing of knowledge from sources indicated by the teacher  
5. group activity consisting in the processing of knowledge |
| C. Use of didactic resources     | 1. domination of textbook; tablet used for displaying materials  
2. domination of textbook, applications closely subordinated to the textbook material  
3. breaking textbook monopoly through a multitude and variety of applications  
4. breaking textbook monopoly through applications designed to reorganise knowledge  
5. use of applications used for the production of knowledge and balancing of textbook knowledge |
<table>
<thead>
<tr>
<th>Category</th>
<th>Description of the adopted coding scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. Learner's role</td>
<td>1. recipient of the ready educational content  &lt;br&gt;2. exercising and consolidation of the supplied knowledge and skills (memorisation)  &lt;br&gt;3. reproducer of educational content with elements of independent knowledge processing using an indicated source  &lt;br&gt;4. reorganisation of knowledge, transformation and group negotiation of knowledge, opinion expression skills  &lt;br&gt;5. group transformation of knowledge, independent search for materials and information and assessment of sources, cooperation and involvement in the learning team, negotiation of ways in which technology can be used</td>
</tr>
<tr>
<td>E. Teacher's role</td>
<td>1. expert, controls short time of activity with tablet through additional procedures  &lt;br&gt;2. expert, limits tablet use time and controls the correctness of the use of applications, provides technical support if necessary  &lt;br&gt;3. expert-controller with elements of facilitation, supports learners’ involvement, provides substantial and technical support to learners, strong relationship of control of the learning process  &lt;br&gt;4. consultant, monitors the subsequent stages of group work, provides feedback  &lt;br&gt;5. companion, observer (mentoring elements) of learners’ independent actions</td>
</tr>
<tr>
<td>F. Assessment and feedback</td>
<td>1. no feedback, no assessment  &lt;br&gt;2. comments concerning classes, a kind of a general summary  &lt;br&gt;3. assessment addressed to an individual or group and concerning the result of work  &lt;br&gt;4. assessment and feedback during the particular stages of individual or group work and after the end of work  &lt;br&gt;5. assessment criteria announced at the beginning of classes, feedback at the subsequent stages of work, assessment after the end of work, elements of advisory assessment</td>
</tr>
<tr>
<td>G. Educational goals in connection with the role of technology</td>
<td>1. making knowledge transmission more attractive  &lt;br&gt;2. substitution – streamlining  &lt;br&gt;3. extension – improvement  &lt;br&gt;4. modification – considerable change  &lt;br&gt;5. redefinition – transformation</td>
</tr>
</tbody>
</table>

The determination of the coding scheme for the substantial research material helped us to avoid the methodological charm of “raw data” and the related trap of anecdotes, which consists in the reporting of the content of the video or the most interesting, non-typical issues, while skipping those elements which are ordinary.
Data analysis

A coding procedure was applied to every recorded lesson. Having watched it, we performed coding on the basis of a list of categories (A-G), making sure that the code selected best represented the character of both the recorded material and the actions observed.

Analysis of the video-ethnographic material was performed using the following four steps:

1. Applying a coding scheme to the entire video material
2. Calculating code values in the particular categories for the particular teachers for each semester

During the procedure, the values obtained by the teachers in the particular categories were totalled, and the result was subsequently divided by the number of the recorded observations. In this way, a mean result for the particular teacher in the time period under analysis was obtained. Keeping the division into semesters, we obtained two collective tables presenting the mean values obtained by the teachers.

Table 3. The mean values obtained by teachers in the first semester (I)

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Number of observations</th>
<th>The mean values obtained by teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>T1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>T2</td>
<td>4</td>
<td>1.75</td>
</tr>
<tr>
<td>T3</td>
<td>4</td>
<td>1.75</td>
</tr>
<tr>
<td>T4</td>
<td>4</td>
<td>2.5</td>
</tr>
<tr>
<td>T5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>T6</td>
<td>3</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Table 4. The mean values obtained by teachers in the third semester (III)

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Number of observations</th>
<th>The mean values obtained by teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>T1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>T2</td>
<td>4</td>
<td>4.5</td>
</tr>
<tr>
<td>T3</td>
<td>3</td>
<td>1.75</td>
</tr>
<tr>
<td>T4</td>
<td>3</td>
<td>4.6</td>
</tr>
<tr>
<td>T5</td>
<td>3</td>
<td>4.3</td>
</tr>
<tr>
<td>T6</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
3. Placing the values obtained by the teachers on diagrams for each semester
   As a next step based on the coding scheme, the calculated mean values were
   placed on the diagrams representing the particular semesters during which our
   research was carried out.

4. Analysing transformations in the teachers’ practices
   Before performing analyses for this dimension, we determined the thresholds
   of the mean values defining the boundaries of the orders in which the teachers’
   practices are located.
   We identified the mean values between 1 and 2.49 as practices representing the
   order of the transmissive school. The mean values ranging between 2.50 and 3.49
   as tension areas being a part of the existing culture of education experiencing the
   first serious “cracks” in its practices.
   The mean values ranging between 3.0 and 5 as a symptom of the culture of edu-
   cation experiencing a progressive transformation, with new teaching and learning
   practices appearing relatively frequently in connection with the integration of new
   technologies.

Research Results

This section presents the results of the video-ethnographic research in the
form of diagrams – maps of the emerging teaching and learning practices in the
classrooms during the three semesters of our analyses. The maps result from the
coding, which was related to seven categories. In the picture of the results, we
kept the time axis since it is significant for the emerging changes in the area of the
teaching and learning practices in the tablet-mediated classroom.

1st semester: Disappointment

For the majority of the teachers, the first semester of research in the classroom
involved the experience of disappointment and a conviction that iPads “are
a failure in the conditions of Polish schools” (T5). The teachers considered the
investment into the purchase of iPads as not having been fully thought-out. We
are convinced that the main problem evident in the first semester of the video-eth-
nographic analyses consisted in attempts at the fitting of the new tool into the
framework of the heretofore existing practices and activities and subordinating
it to them.

As shown in Diagram 1, teaching practices are almost entirely contained in the
knowledge transmission order. The collective table for this cycle shows that almost
all the teachers’ results ranging from 1 to 2.49 points. Only one teacher participating in the project – the teacher of English – exceeded the threshold determined as transmissive. Staying in this framework can be interpreted as a process independent of the teacher’s age and his/her private (positive or negative) attitude to modern technologies.

A: Most often these included the transmission and consolidation of knowledge or the training of specific skills. Educational goals were not always clearly determined by the teachers. They were most often related to the execution of the subsequent topic of the lesson, about which the learners were informed at the beginning of the lesson, while the range of skills and exercises to be done were not announced at all.

B: During the first semester, the learners most often used iPads for watching illustrative materials (fragments of videos or presentations prepared by the teacher). In this sense, the learners’ iPads were transformed into small, immobile TV sets, on which they could watch a video or a presentation when looking closely (these presentations were also always additionally shown on the interactive whiteboard). During mathematics, English or religion lessons, learning practices were more clearly connected with the exercising and consolidation of skills in an individual or group manner (e.g., exercising addition and subtraction skills during a fixed time, followed by a comparison of results).

C: The teachers considered the textbook and the workbooks as the leading resources of knowledge and sources of skills. The applications selected by the teachers were strictly subordinated to the leading didactic materials (most often

Diagram 1. Map of emerging practices (semester I)
a single type of mathematical operations or a certain defined group of English vocabulary were exercised).

D: In their actions, the learners did not step beyond being passive recipients ready for the knowledge prepared for them by the authors of textbooks and the teachers. They played a more active role during exercises, where they were expected to perform efficiently, fast, and correctly. The scope of their activity was dominated by actions related to the memorization and consolidation of knowledge.

E: During the first stage of our research, the teachers did not go beyond the role of experts transmitting knowledge or equipping learners with skills. The teachers had an additional task to carry out: the organisation of activities in connection with the use of iPads, i.e., handing the devices out to the learners, controlling the time determined for the activity selected and making sure that the learners did not use independently any other applications available in their devices.

F: In this cycle of analyses, practices in the scope of assessment and feedback were presented sporadically in the form of a general summary of the classes. It was often the case that the element of assessment and feedback for the learners was entirely absent.

G: It seems that the goals of the lessons under analysis could be well achieved without any iPads, which were reduced to the role of a substitute of a screen displaying video material. The tablets were used during a very short, clearly limited time span of up to 10 minutes. During this time, the learners had a chance to exercise some concrete skills such as addition, note-taking, or consolidation of English vocabulary. The use of technology did not move beyond the narrowly-understood substitution and streamlining of the heretofore undertook learning actions.

3rd semester: Emerging progressive teaching and learning practices

The last cycle of research carried out in the third semester was, on the one hand, marked by the effort to deeply reconstruct teaching practices in connection with the appearance of technology in learning (with results over the 3.5 threshold), whilst on the other hand, our research revealed that some teachers did not manage to reorganize their practices and continued obtaining results fitting the knowledge transmission logic (i.e., below the 2.49 threshold) in the same period under analysis. The collective results are shown in Diagram 2.

A: On the one hand, educational goals were not at all verbalised or were signalled unclearly, but without any doubt the new teaching practices included those covering clearly defined goals related to the learners’ independence as creators of knowledge.
B: Learning practices continued to include the well-established individual exercises based on many fast repetitions (mathematical applications). The emerging new practices included, without any doubt, group activity consisting in the independent negotiation-based creation of knowledge by the learners from sources indicated by the teacher or from other sources. What was appreciated here was the learners’ personal knowledge and experience.

C: Strategies of the use of the available resources were also very diverse. On the one hand, there is the dominating role of the textbook, but also some clear attempts at breaking down this domination by balancing and multiplying sources. From the point of view of the process of the construction of knowledge by the learner in connective contexts, this emerging practice is of huge significance (results over 3).

D: In this category, both the traditional role of the learner as the recipient of the ready knowledge (results under 2.49) and the emerging new framework of the learners’ roles were identified. The learners benefited from being causal agents processing or creating knowledge. This reorganisation of the learners’ role consisted in granting them a higher degree of independence and appreciating their technical competence, which resulted in the mandate for the creation of their own content.

E: What showed in the case of this category was both a conservative tendency – the teachers’ attachment to the role of an expert transmitting knowledge (results
under 2.49) – and efforts to change this role. By acknowledging the learners’ higher agency in the area of the creation of knowledge, the teachers “moved” their own role towards consulting and mentoring practices, which facilitated the emergence of new teaching practices (results equal to and over 4.0).

F: Surprisingly, in this category all the teachers obtained results turning towards the traditional direction (up to 3), which means that practices in the area of assessment and feedback are not a highly reconstructed aspect of the teachers’ practices. Although there were single cases of evaluation in stages, assessment most often concerned the effect of work, or the teachers limited themselves to a general summary of classes. From the point of view of the learners’ independent construction of knowledge, this collection of the teachers’ practices raises concerns, as it leaves the learners without adequate feedback on the quality of their own work.

G: In the case of this category, we can see both the use of technology in the substitution and augmentation model (such as the frequently applied game-based approach: the Kahoot! application used for the checking of the learners’ knowledge), but also clear attempts at the modification of learning practices through technology (designs of books prepared with the help of the Book Creator), and designs of presentations to do with explanation of natural phenomena (Aurasma). Also, iMovie applications combining narration, image and sound were used. The teachers also developed visual competences and algorithmic thinking through the practice of changing a tale into a game plot (Bloxels application) as well as narrative games.

**Discussion**

Our analyses document two processes taking place in the community in question. We managed to grasp the order of slow transfer from the logic of transmissive teaching to practices focused on the learners and their learning. The order can be observed in the area of the emerging practices such as the organisation of group-learning situations, the reorganisation of knowledge, indication of alternative sources of information, use of new strategies in the field of the assessment of the creation of new frameworks of reference to the learner’s role and a more comprehensive use of technology. The relationship between the process of didactic design and technology is very clear here. We also managed to grasp the process of transfer by analysing the order in which the teachers expressed their dilemmas. Initially, these concerned the teachers’ work time and their involvement, as well as the entertaining (and thus not educational) role of tablets, but they subsequently
evolved towards the recognition of tablets as educational tools, but also still retained concerns relating to the educational value of the learners’ knowledge and their technically-mediated skills in the perspective of the requirements of the system of education. It also seems that the practices of assessment and provision of feedback on the learners’ projects, which were reconstructed in relatively the poorest way, are somehow related to this “empty space” in the Polish system of education.

However, we cannot possibly disregard the existence of teachers who made some other choices in the scope of their own practices and indicated “incompatibility” between the tool and their subject area. Interestingly, one of them was the IT teacher. Obviously, we may guess that personal preferences concerning the use of technology may play a role here, but analyses carried out in the group of “progressive teachers” showed that their private attitudes to technology were also varied (from neutral to positive). It seems that the key to the understanding of the reserved attitude towards a fuller use of tablets during mathematics or IT lessons lies in the package of skills defined in the core curriculum for the primary school in the scope of their teaching subjects rather than their personal deficits or preferences.

**Conclusion**

This study was aimed at the showing of the process of the emergence of new teaching and learning practices in the tablets-mediated classroom. We showed the huge amount of work which followed a non-reflective expectation that the technology itself would produce educational effects without the teachers’ involvement. We have also presented the teachers’ disappointment with technology and the drawbacks of technology in terms of helping the teachers, as well as contexts in which technology made it possible for the teachers to develop a new pedagogical approach and further reconstruct their own practices.

**Acknowledgments**

This text and the research it discusses were financed with funds from the National Science Centre, Poland, as a part of the research project “Learning enhanced with mobile technologies in Pomeranian schools. Critical questions about the development of “21st century skills” and gender inclusiveness in school models BYOD/BYOT and OPD” (NCN 2015/19/B/HS6/02218)
References:
Socio-cultural Capital as a Factor Differentiating Students’ Skills in the Field of Speech Reception and Creation as well as the Analysis and Interpretation of Cultural Texts

DOI: 10.15804/tner.2018.51.1.07

Abstract
The purpose of this article is to analyse the relations between students’ cultural and social capital and their competence test results in the field of the Polish language. The data come from the research carried out in 2013 in 60 middle schools in 5 provinces of Poland. Students filled in survey questionnaires regarding their school and family environment and 3 competence tests. Two types of socio-cultural capital were distinguished – soft and hard capital. The hard socio-cultural capital affects approximately 10% of the students’ results. If the soft and hard capital resources and the extent of identification with school were increased by one level, this would result in an average increase in the 1st form students’ results of the test regarding cultural texts analysis and interpretation by 21.4%.

Keywords: cultural capital, social capital, tests of students’ skills, social determinants of the effectiveness of the educational process

Introduction
Teaching effectiveness does not only depend on the student’s individual predisposition or the teacher’s teaching techniques. A number of external factors connected with the school and out-of-school environment influences the teaching
results achieved by teachers. The above obvious statement is supported by observations of teachers, who have to struggle with the social conditions of teaching results every day. The thesis about the influence of the factors on the effectiveness of the teaching process is not unfamiliar to sociologists, e.g., P. Bourdieu (1977) explained differentiated achievements of French students in reference to their access to resources of the cultural capital. Thanks to the empirical studies of the Institute of Education Research from 2013, teachers’ and sociologists’ observations can be supported by an in-depth statistical analysis.

**Research Problem**
Within the presented article, the following issues will be discussed:

- To what extent are the students of secondary schools differentiated in terms of access to resources of the socio-cultural capital?
- To what extent are the students’ skills concerning the speech reception and creation as well as the analysis and interpretation of cultural texts differentiated by access to resources of the socio-cultural capital?
- To what extent does the socio-cultural capital explain the students’ skills level from the statistical point of view?

**Research Focus**
P. Bourdieu pays attention to the cultural capital as one of the most important factors of differentiating students’ skills acquired during the education process (Bourdieu, Passeron, 1977). The cultural capital describes individual and social resources of skills, customs, speaking styles, knowledge about the world, taste, and practised life styles. The cultural capital and its social, economic and symbolic dimensions are responsible for differentiating the position of individuals in the social structure. Borderlines between communities are specified by different configurations of particular types of the capital (Bourdieu, Passeron, 1977; Bourdieu, 1986; Bourdieu, 1996). P. Bourdieu differentiates three dimensions of the cultural capital, which he calls embodied, objectified and institutionalized capital. The embodied form refers to cultural competences of an individual: awareness of conventionalities, knowledge about different forms of high culture, and cultural taste. The material creations of culture such as paintings, sculptures, books, etc., constitute the objectified form of the cultural capital. Education level is the institutionalized form of the cultural capital (Bourdieu, 1983, 1986).

P. Bourdieu defines the social capital as a set of real or potential resources which are connected with possessing a lasting net of more or less institutionalized relationships based on the mutual awareness and acknowledgement. It means the
relationships created within social groups support their members providing them with the capital possessed by the group (Bourdieu, Wacquant, 2001). The more dense the connections nets of an individual are, the bigger the social capital is. Trust is the glue of the social capital. “Trust is an essential component of social capital. (…). Trust lubricates cooperation. The greater the level of trust within a community, the greater the likelihood of cooperation. And cooperation itself breeds trust” (Putnam, 1993, 270–271). There are 3 basic dimensions of the social capital – structural, behavioural and normative ones. The condition of the growth of the social capital is not only the existence of a net of relationships but the development of the net, too, which requires social trust. According to P. Bourdieu, the resource of the social capital can grow only as a result of the material and symbolic exchange of the relationships. It means the social capital, which is possessed by an individual, depends on the extent of his/ her relationships, activity in terms of creating new relationships and on the cultural, symbolic and economic capital of those who are connected with the individual (Bourdieu, 1983, 1986).

Research Methodology

Research General Background
P. Bourdieu believes that an affiliation of a specific cultural-symbolic space including a common identity and shared life styles, access to elements of culture, effective use of symbolic resources, and contacts and social relations are decisive factors of differentiating the position of an individual within varied social worlds penetrating each other. The forms of the cultural and social capital influence the teaching effectiveness significantly. The education level aspired to by students “is in fact the guaranteed product of the combined effects of cultural transmission by the family and cultural transmission by the school (the efficiency of which depends on the amount of cultural capital directly inherited from the family)” (Bourdieu, 1996, 23).

Research Sample
The presented results are based on the empirical study conducted in 2013 in 60 Polish schools located in five different provinces (Lubelskie, Malopolskie, Mazowieckie, Podkarpackie, and Swietokrzyskie). 5,250 students aged 13–16, representing all forms of secondary schools, took part in the study in total.
**Instruments and Procedures**

Data were collected using two paper questionnaires filled in by parents at home, by students at school and 3 competence tests written by students during their classes. The competence tests related to the main areas of the educational process with regard to the mother tongue: reception of speech (1st test), analysis and interpretation of cultural texts (2nd test) and creation of speech (3rd test). The students filled the 3 tests separately on 3 different days in the morning hours. The following table shows the basic features of the tests.

<table>
<thead>
<tr>
<th>Table 1. Main features of tests</th>
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<tbody>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Number</strong></td>
</tr>
<tr>
<td>of tasks</td>
</tr>
<tr>
<td><strong>Number</strong></td>
</tr>
<tr>
<td>of open tasks</td>
</tr>
<tr>
<td><strong>Maximum number</strong></td>
</tr>
<tr>
<td>of points to obtain</td>
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<tr>
<td>1st test</td>
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<tr>
<td>1st form</td>
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<tr>
<td>20</td>
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<tr>
<td>7</td>
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<tr>
<td>23</td>
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<tr>
<td>2nd form</td>
</tr>
<tr>
<td>21</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>27</td>
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<tr>
<td>3rd form</td>
</tr>
<tr>
<td>20</td>
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<tr>
<td>7</td>
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<tr>
<td>23</td>
</tr>
<tr>
<td>2nd test</td>
</tr>
<tr>
<td>1st form</td>
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<tr>
<td>17</td>
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<tr>
<td>14</td>
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<tr>
<td>27</td>
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<tr>
<td>2nd form</td>
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<td>18</td>
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<td>15</td>
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<td>35</td>
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<tr>
<td>3rd form</td>
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<tr>
<td>17</td>
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<tr>
<td>14</td>
</tr>
<tr>
<td>30</td>
</tr>
<tr>
<td>3rd test</td>
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<tr>
<td>1st form</td>
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<tr>
<td>3rd form</td>
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<td>10</td>
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<td>10</td>
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<td>24</td>
</tr>
</tbody>
</table>

The questionnaire filled by the students included 46 questions referring to the school in general, lessons and teachers of the Polish language, reading books, periodicals and other written sources, as well as free time. The questionnaire dedicated to parents consisted of 55 questions about family, housing conditions and locality, educational plans, school attended by their children, reading books, financial situation, and professional status.

Implementation of the concept referring to cultural and social capital requires a significant modification in the case of a study dedicated to students of secondary schools. Firstly, the youth have barely built the dispositions and competences described by P. Bourdieu as indicators of the particular capital forms. Secondly, the peculiarity of the conducted studies has to be taken into consideration because verification of P. Bourdieu's theses under the conditions of Polish secondary schools was not their main aim. For this reason some assumed empirical indicators of the particular capital forms are sometimes less connected with the variables proposed by P. Bourdieu, although in accordance with the idea of the concept referring to cultural and social capital.
Seven measuring subscales of cultural capital were built:

1. the embodied capital: self-assessment of the communication competences (Alpha=0.612), frequency of using the offer of high culture (Alpha=0.744), and disposition towards school honesty (Alpha=0.873)
2. the institutionalized capital: motivation to acquire knowledge and skills (Alpha=0.822), preferences with regard to the Polish language as a school subject (Alpha=0.842), the parents’ formal education (based on one item)
3. the objectified capital: the number of books in the parental household (based on one item)

**Research Results**

About 3/4 of the students assess themselves more or less positively in terms of the communication competences. A similar rate of the students assess themselves as motivated to acquire knowledge and skills to a larger or lesser degree. It does not correspond to the declarations of the students about the lessons of Polish. Only about 1/4 of them declare the Polish language as a favourite school subject. About a half of the students show a disposition towards school honesty to a larger or lesser extent. Fewer than 1/3 of the students are characterised by over-average frequency of using the offer of high culture. The results show, at the same time, that nearly a half of the parents have a relatively high degree of the formal education level. The declarations about the relatively high number of books are found out by more than 1/10 of the parental households of the students. The opposite situation is characteristic of nearly a half of the examined cases.

**Table 2. Subscales of cultural capital**

<table>
<thead>
<tr>
<th></th>
<th>1- the lowest level</th>
<th>2-</th>
<th>3-</th>
<th>4-</th>
<th>5- the highest level</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embodied capital (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-assessment of communication competences</td>
<td>1</td>
<td>3</td>
<td>20</td>
<td>43</td>
<td>33</td>
<td>100</td>
</tr>
<tr>
<td>Frequency of using the offer of high culture</td>
<td>10</td>
<td>25</td>
<td>34</td>
<td>24</td>
<td>6</td>
<td>100</td>
</tr>
<tr>
<td>Disposition towards scholar honesty</td>
<td>9</td>
<td>16</td>
<td>25</td>
<td>30</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>Institutionalized capital (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The scale of the social capital was built in reference to the variables describing the students’ relationships in the school environment. The results of the factor analysis and Cronbach’s Alpha allow for a construction of the scale of the social capital based on the students’ declarations with regard to their relationships with teachers in total, to their relationships with the teacher of Polish, to the atmosphere among the classmates and to the way in which the teacher of Polish assesses their students (Alpha= 0.737). The scale of the economic capital of the parental household was built on the basis of the parental assessment of the housing and material situation and on the information about the monthly net income per person in the household (Alpha=0.663).

Nearly 3/4 of the students are characterised by a high or very high degree of the social capital. The results are more differentiated in the case of the economic capital. A bad material situation is found in about 1/10 of the students’ parental households while satisfying material conditions are visible in over 1/3 of the parental households.

Table 3. Social and economic capital of the parental households (%)

<table>
<thead>
<tr>
<th></th>
<th>1- the lowest level</th>
<th>2-</th>
<th>3-</th>
<th>4-</th>
<th>5- the highest level</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social capital</td>
<td>1</td>
<td>5</td>
<td>21</td>
<td>57</td>
<td>16</td>
<td>100</td>
</tr>
<tr>
<td>Economic capital</td>
<td>0</td>
<td>10</td>
<td>56</td>
<td>30</td>
<td>5</td>
<td>100</td>
</tr>
</tbody>
</table>

Next, the above-mentioned variables were submitted to the factor analysis to reduce the data describing similar phenomena. Two groups of scales were found out which built the common factors. The first one are the following scales: the frequency of using the offer of high culture, school honesty, motivation to acquire knowledge and skills, value of the Polish language as a school subject and the
Social capital. The other one are the scales measuring the parents’ education level, the number of books in the parental household and the economic situation of the household. The reliability test showed that 2 scales can be built on the basis of the 2 groups of variables further named as the soft socio-cultural capital (Alpha=0.678) and the hard socio-cultural capital (Alpha=0.688).

In total, over 2/5 of the students are characterised by a high level of the soft socio-cultural capital, whereas nearly 1/3 of the students display high resources of the hard socio-cultural capital. On the contrary, 1/10 of the students are characterised by a low level of the soft socio-cultural capital and nearly 1/4 of the students are characterised by a low level of the hard socio-cultural capital.

### Table 4. Soft and hard socio-cultural capital of students (%)

<table>
<thead>
<tr>
<th></th>
<th>1- the lowest level</th>
<th>2-</th>
<th>3-</th>
<th>4-</th>
<th>5- the highest level</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft socio-cultural capital</td>
<td>0</td>
<td>10</td>
<td>47</td>
<td>40</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Hard socio-cultural capital</td>
<td>1</td>
<td>23</td>
<td>44</td>
<td>28</td>
<td>4</td>
<td>100</td>
</tr>
</tbody>
</table>

Further analysis requires standardisation of the scoring obtained by the students. The school system of assessment implemented in the case of exams conducted in the Polish secondary schools was assumed as the basis for the standardisation procedure according to the following pattern: 90% of the maximum scoring - very good result, 71–89% of the maximum scoring – good result, 51–70% - satisfactory result, 30–50% - poor result, below 30% - unsatisfactory result.

The analysis conducted in the cross tabs shows correlations without any doubts. The higher the resources of both types of the socio-cultural capital, the higher the test results are obtained by the students. Depending on the kind of the test and the school form, the correlation is stronger or weaker. For example, there was no student who, having a very low or low level of the soft socio-cultural capital, achieved a very good result of the test. Nearly 16% of the students who received the negative mark were characterised by a very low or low resources of this capital at the same time. On the other hand, over 3/4 of the students having a very good test result in the area of the analysis and interpretation of cultural texts showed at least high resources of the soft capital. The ratio of the students with the worst result of the test displaying at least a high level of the soft socio-cultural capital is nearly three times higher (76% vs 27%). The correlation is confirmed by the coefficient of tau-b, which equals to 0.247, p≤0.5.
Table 5. Grade of the soft socio-cultural capital and the result of test 2 for the 1st form (analysis and interpretation of cultural texts) (%)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Unsatisfactory result (0–8.0 points)</th>
<th>Poor result (8.1–13.5)</th>
<th>Satisfactory result (13.6–18.9)</th>
<th>Good result (19.0–24.2)</th>
<th>Very good result (24.3–27.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+2</td>
<td>15.6</td>
<td>11.2</td>
<td>6.5</td>
<td>3.4</td>
<td>0.0</td>
</tr>
<tr>
<td>3</td>
<td>57.0</td>
<td>48.0</td>
<td>36.2</td>
<td>28.6</td>
<td>23.8</td>
</tr>
<tr>
<td>4</td>
<td>24.7</td>
<td>38.2</td>
<td>52.4</td>
<td>61.5</td>
<td>66.7</td>
</tr>
<tr>
<td>5</td>
<td>2.7</td>
<td>2.6</td>
<td>4.9</td>
<td>6.5</td>
<td>9.5</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Note. The first and second grades of the scale were aggregated because of a low number of cases

Still stronger correlations are observed in the case of the hard socio-cultural capital. There is not any student having low or very low resources of the hard socio-cultural capital who wrote the test of the analysis and interpretation of cultural texts at very good level. The share of the youth having a low or very low level of the hard capital in the student group with unsatisfactory result of the test equals nearly 40%. On the contrary, there is no student having very high resources of the hard capital who received the unsatisfactory mark. More than a half of the students who wrote the test very well show at least a high level of the hard capital. The share of the students representing the first forms and having a high level of the hard capital in the student group with the unsatisfactory mark amounts only to 13.8%. The correlation is confirmed by the coefficient of tau-b, which equals 0.231, p≤0.5.

Table 6. Grade of the hard socio-cultural capital and the result of test 2 for the 1st forms (analysis and interpretation of cultural texts) (%)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Unsatisfactory result (0–8.0 points)</th>
<th>Poor result (8.1–13.5)</th>
<th>Satisfactory result (13.6–18.9)</th>
<th>Good result (19.0–24.2)</th>
<th>Very good result (24.3–27.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+2</td>
<td>39.6</td>
<td>30.6</td>
<td>22.2</td>
<td>12.7</td>
<td>0.0</td>
</tr>
<tr>
<td>3</td>
<td>46.6</td>
<td>46.6</td>
<td>44.5</td>
<td>40.9</td>
<td>46.1</td>
</tr>
<tr>
<td>4</td>
<td>13.8</td>
<td>18.1</td>
<td>29.4</td>
<td>40.3</td>
<td>46.2</td>
</tr>
<tr>
<td>5</td>
<td>0.0</td>
<td>4.7</td>
<td>3.9</td>
<td>6.1</td>
<td>7.7</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The presented correlations are repeated in the second and third forms if it is about the direction and strength of the connection. The rule is in force to a greater or lesser extent, the students achieve the higher results of the test, the higher resources of the socio-cultural capital they have.

To what extent can enlarging the resources of the socio-cultural capital influence the improvement of the students’ achievements regarding the competence tests? The regression analysis was conducted to answer the question.

**Table 7. Standardised regression coefficients of β and the determination coefficient of r² by particular forms, kinds of test and types of the socio-cultural capital**

<table>
<thead>
<tr>
<th>Test 1, Form 1</th>
<th>β</th>
<th>r²</th>
<th>Test 2, Form 1</th>
<th>β</th>
<th>r²</th>
<th>Test 3, Form 1</th>
<th>β</th>
<th>r²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.169</td>
<td>.029</td>
<td></td>
<td>.339</td>
<td>.115</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test 2, Form 1</td>
<td>.273</td>
<td>.075</td>
<td>Test 1, Form 2</td>
<td>.158</td>
<td>.025</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.207</td>
<td>.043</td>
<td></td>
<td>.268</td>
<td>.072</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test 3, Form 1</td>
<td>.195</td>
<td>.038</td>
<td>Test 2, Form 2</td>
<td>.210</td>
<td>.044</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.130</td>
<td>.017</td>
<td></td>
<td>.302</td>
<td>.088</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test 1, Form 3</td>
<td>.208</td>
<td>.043</td>
<td>Test 3, Form 3</td>
<td>.251</td>
<td>.091</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.170</td>
<td>.029</td>
<td></td>
<td>.297</td>
<td>.088</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The explanatory strength of the test results by variables describing the resources of the socio-cultural capital is very differentiated from the statistical point of view. On the one hand, the hard capital is explained by over 10% of the results variance characterising test 1 (speech reception) filled in by all the school forms. An important role of this capital is visible in the case of the third form, too. The determination coefficients show that about 9% of the results variance of test 2 (analysis and interpretation of cultural texts) and test 3 (speech creation) can be explained by the variance of the hard capital. On the other hand, connections are visible whose explanatory strength is weaker. The connection between the soft socio-cultural capital and the results of test 1 of the first forms is the record holder. Only 1.7% of the result variance of test 1 written by the third forms can be explained by the variance of the soft capital.
**Discussion**

What do the connections between the resources of the socio-cultural capital and the results of the competence tests mean in practice? To what extent could the enlarging of the students’ socio-cultural capital improve their skills in the area of the speech reception and creation as well as analysis and interpretation of cultural texts?

It turns out that the enlarging of the hard socio-cultural capital of the students’ parental household by one level (20% of the maximum value of the capital) would cause an average increase in the results of test 1 (speech reception) from 11% to nearly 13%, depending on the school form. A similar effect would be achieved in the case of the enlarging the hard capital by one level for test 2 (analysis and interpretation of cultural texts) and for test 3 (speech creation) for the third forms. An average increase in the results by more than 11% could be expected in the case of test 2 in the first and second forms after enlarging the resources of the soft socio-cultural capital by one level. The improvement of the test results by 8–9% could be expected in the case of test 2 for the first and second forms after enlarging the resources of the hard capital by one level and in the case of test 3 for all the forms and in the case of test 2 for the third forms after enlarging the resources of the soft capital by one level.

**Table 8.** Forecasted increase in the average scoring of the test in the case of enlarging the socio-cultural capital by one level by particular forms, kinds of tests and types of tests

<table>
<thead>
<tr>
<th></th>
<th>The soft socio-cultural capital</th>
<th>The hard socio-cultural capital</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Relative increase in the scoring (%)</td>
<td>Relative increase in the scoring (%)</td>
</tr>
<tr>
<td>Test 1, Form 1</td>
<td>6.6</td>
<td>11.2</td>
</tr>
<tr>
<td>Test 2, Form 1</td>
<td>11.3</td>
<td>9.4</td>
</tr>
<tr>
<td>Test 3, Form 1</td>
<td>8.0</td>
<td>7.0</td>
</tr>
<tr>
<td>Test 1, Form 2</td>
<td>7.3</td>
<td>12.9</td>
</tr>
<tr>
<td>Test 2, Form 2</td>
<td>11.5</td>
<td>9.0</td>
</tr>
<tr>
<td>Test 3, Form 2</td>
<td>7.8</td>
<td>7.0</td>
</tr>
<tr>
<td>Test 1, Form 3</td>
<td>5.4</td>
<td>11.1</td>
</tr>
<tr>
<td>Test 2, Form 3</td>
<td>8.4</td>
<td>9.8</td>
</tr>
<tr>
<td>Test 3, Form 3</td>
<td>7.5</td>
<td>10.7</td>
</tr>
</tbody>
</table>
It is worth paying attention to the fact that the hard socio-cultural capital has a slightly bigger explanatory strength to explain the variance of the test results than the soft capital, which is confirmed by the results of the multiple regression analysis.

**Table 9.** Standardised regression coefficients of $\beta$ with 2 predictors and the determination coefficient of $r^2$ by forms, kinds of tests and types of the socio-cultural capital

<table>
<thead>
<tr>
<th></th>
<th>$\beta$ for the soft socio-cultural capital</th>
<th>$\beta$ for the hard socio-cultural capital</th>
<th>$r^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1, Form 1</td>
<td>.177</td>
<td>.354</td>
<td>.159</td>
</tr>
<tr>
<td>Test 2, Form 1</td>
<td>.293</td>
<td>.267</td>
<td>.160</td>
</tr>
<tr>
<td>Test 3, Form 1</td>
<td>.200</td>
<td>.212</td>
<td>.087</td>
</tr>
<tr>
<td>Test 1, Form 2</td>
<td>.151</td>
<td>.327</td>
<td>.131</td>
</tr>
<tr>
<td>Test 2, Form 2</td>
<td>.270</td>
<td>.256</td>
<td>.139</td>
</tr>
<tr>
<td>Test 3, Form 2</td>
<td>.187</td>
<td>.212</td>
<td>.081</td>
</tr>
<tr>
<td>Test 1, Form 3</td>
<td>.105</td>
<td>.323</td>
<td>.117</td>
</tr>
<tr>
<td>Test 2, Form 3</td>
<td>.211</td>
<td>.294</td>
<td>.134</td>
</tr>
<tr>
<td>Test 3, Form 3</td>
<td>.179</td>
<td>.292</td>
<td>.120</td>
</tr>
</tbody>
</table>

The regression model, including three variables, shows the standardised coefficients of $\beta$ describing connections between resources of the hard socio-cultural capital and the results of the tests are higher than the analogous coefficients for the soft capital, sometimes to a significant extent. There is one exception: test 2 (analysis and interpretation of cultural texts) for the first and second forms. The resources of the soft socio-cultural capital play a greater part in the explanation of the variance observed for the results of test 2. For example, taking into consideration test 1 (speech reception) for the first forms, enlarging the resources of the hard socio-cultural capital by one level (20% of the maximum value of the capital among the examined population) would cause an average increase in the students’ results by 11.7%. At the same time, enlarging the resources of the soft socio-cultural capital by one level would cause an average increase in the test results only by 6.9%. In general, both types of the capital explain 16% of the variance observed for the results of test 1 (speech reception) and test 2 (analysis and interpretation of cultural texts) for the first forms. Both types of the capital play an important part in the explanation of variance found out for the results of tests 1 and 2 for the second forms and test 2 for the third forms (over 13%).
Further variables joined in the regression model could cause additional increase in the ratio of the explained variance of the test results. For example, inclusion of the variables describing the extent of the students’ identification with the school and the students’ preferences regarding the subject of the Polish language causes an increase in the ratio of the explained variance observed for the results of test 2 for the first forms by more than five percentage points – from 16.0% to 21.4%. An increase in the soft and hard socio-cultural capital as well as the degree of the students’ identification with school and the extent of their preferences for the mother tongue as a school subject by one level would cause an average increase in the result of test 2 for the first forms by 23.2% (by 6.3 points). The biggest influence on the improvement of the results would have an increase in the identification with the school (+2.2 points) and an increase in the hard socio-cultural capital (+1.9 points). An increase in the soft socio-cultural capital would be of less importance (+1.7 points). An increase in the preference degree of the mother tongue as a school subject would not play any significant part (+0.5 points).

**Conclusions**

The obtained results clearly show the role of the socio-cultural capital for students’ skills in the area of speech reception and creation as well as in the area of the analysis and interpretation of cultural texts. On the one hand, the enlargement of the soft and the hard socio-cultural capitals should lead to improvement of the skills. On the other hand, the resources of the capitals should be growing along with, e.g., increasing frequency of using the offer of high culture by students, stronger motivation to acquire knowledge and skills, a more positive attitude toward the mother tongue as a school subject or stronger support of readership in general. In this context, the creation of additional programs focused on the improvement of access to high culture, development of readership, work on a more positive image of the mother tongue as the school subject or motivation training in terms of the acquisition of new knowledge and skills is worth considering. Further analyses of this type should lead to an exact picture which of the individual, social, school and out-of-school factors influence the acquisition of skills by students in the area of speech reception, analysis and interpretation of cultural texts and speech creation.
References
Triggering Children’s Ways of Conceptualizing the World (Through the Analysis of the Meaning of the Concept of the Horizon)

DOI: 10.15804/tner.2018.51.1.08

Abstract
The article presents the results of research carried out in the 2016/2017 school year in selected primary schools in an urban environment (Łódź). The aim of the study was to diagnose the ways of understanding the abstract concept of the horizon, in groups of 8- to 9-year-olds and 9- to 10-year-old children. The research was carried out in a venue that provided a natural learning environment (in two second grade classes and two third grade classes). The research adopted the strategy of didactic intervention. The researcher acted as an observer and a participant, and the research material came from participatory observation. The observation covered both the activities of pupils as well as the effects of these activities. The research material obtained in the course of conversations with children and their artistic activity was analyzed. The research results reconstructed the children’s process of understanding the concept of the horizon and revealed possibilities of enriching educational discourse.

Keywords: didactic intervention, participatory observation, understanding of the concept, ways of categorizing the concept
Introduction – theoretical background for selecting the subject, terminology findings

Cognitivism introduced a real breakthrough in theories on the development of children's intellectual skills. Under the influence of cognitivism, there was a profound change in deliberations on cognitive processes and the nature of knowledge (Kövecses, 2006). Cognitivists have proved that difficulties in recognizing and understanding the meanings of abstract concepts are related to the order in which children acquire knowledge about different realms of reality, thereby laying the foundations for a completely different understanding of children's intellectual possibilities – above all, their innate, natural inclinations to think in an abstract way (Gopnik, Meltzoff, Kuhl, 1999). While admitting the important role of culture, with its symbolic systems, they found that teaching children to understand and interpret abstract concepts is possible, provided they can refer to their experiences from everyday life. In addition, through the naming of different phenomena, the child discovers and experiences the world in which they live – not only the physical one that surrounds, but most importantly, the intangible, spiritual one that is created in their mind (Driver, 1985). The status of language has also changed. Language is no longer perceived as an objective structure with a system of grammatical rules with built-in mechanisms to use, enabling the creation of understandable statements (Langacker, 1991). It is assumed that the structure of language is determined by patterns of neuronal activation that are part of the overall activity of the brain and body (Green et al., 1996). What is more, cognitive processes are largely individual. Meanings, however, consist of conceptual content, expressing specific aspects of the world around us indirectly; they are in thought processes or in the general ways of perceiving the world. They are filtered through personal, unique perception and recognition of what the individual in question is immersed in (Langacker, 1991).

The fundamental change introduced in the theory of cognitive processes by cognitivism resulted in a new concept of education, the essence of which is the creation of subjective ways of describing reality, discovering, interpreting and agreeing on meaning, developing inquisitive, scientific attitudes and cognitive independence (Cameron 2003, E. Bratland, D. Siemieniecka, B. Siemieniecki, 2016). In our research, the basic assumptions of cognitive research were applied. In the description of the empirical material, selected categories of cognitive abilities were included (categorizing certain structures, categorizing and describing a given situation on different levels of abstraction, schematisation) (R.W. Langacker, 1991).
Participants

During the research, both the sample and the research scope were deliberately selected. The study included children aged 8–9 (40 second grade pupils, comprising 22 girls and 18 boys) and 9–10 (42 third grade pupils, comprising 19 girls and 23 boys). The research was conducted in the 2016/2017 school year in selected primary schools, in the urban environment (Łódź). It was not limited to a narrow, selected group of pupils, but rather a representative group, representing different attitudes, views and experiences.

Research Methodology

In the attempt to reconstruct children’s understanding, a qualitative research strategy was applied (Denzin, Lincoln, 2005). Our research strategy stems from the action-perception paradigm (Reason, Bradbury, 2008). This multi-directional, open model of analysis created the possibility to prepare an environment that triggers the intellectual capabilities of children as part of didactic intervention. It was essentially the “intentional creation of didactic conditions that cannot be found in school education, in order to observe the processes of learning in situations unforeseen and unproven by institutions” (Klus-Stańska, 2010: 132).

Procedure for Data Collection

As part of the research, the basic types of procedures for collecting qualitative data were applied: participatory observation, interview (direct, personal, focused), documents – children’s creations, conceptual maps and audiovisual materials.

This study required the researcher to act as an interpretative participant-observer (Angrosino, 2007). The children’s activities and the effects of these activities were observed. We juxtaposed the findings with the extensive statements of the pupils and characteristic examples of situations revealing the children’s processes in conceptualizing selected abstract concepts.

1. The most important element of the research was to organize a varied educational environment. The stimulation of the children’s thinking processes began with associations connected to the concept of horizon.

2. Following this, literary texts and illustrations from book covers were used. The children talked about the various dimensions of the universe described
in the book *När Pappa Visade Mej Världsalltet*, by Ulf Stark and Eric Eva Eriksson, and displayed on the covers of the books: *Safety, Reliability and Risk Analysis: Beyond the Horizon; Beyond horizons; Poza horyzont* [Beyond the Horizon], *Polscy podróżnicy* [Beyond the Horizon. Polish travelers]

3. Further exploration of the children’s experiences involved focus interviews. These focused interviews sparked interaction and increased group dynamics, having a positive impact on the number of ideas generated. It also inspired the children to remind each other of the different situations they had participated in. In such a friendly atmosphere, the children made spontaneous statements, initiated by selected questions: *What is the horizon? Is the horizon relevant to people? Can the horizon relate to something or someone else? What are horizons? What are horizons for children? What are horizons for adults? What are the differences between horizons? What is the horizon similar to? What are horizons for? Where do horizons come from? Does anyone designate horizons? Are horizons changing? Is the horizon similar to a border? How similar is the horizon to a border? How different is it? What does the horizon connect and what does it separate? What does the horizon close and what does it open? Is it possible to broaden horizons? What is beyond the horizon? What else can there be? What is more important: what is in front of or behind the horizon?*

The material obtained from the children’s conversations about their graphic representations of both their own output and the covers of the books with the title of horizon were equally important. The children shared their thoughts on the appropriateness of the selected illustrations for the book titles.

The literary texts as well as conversations with the children inspired by visual materials (illustrations and book covers), addressed existential issues, while the method of intersemiotic translation (artistic concretisations), the association mindmap and focus interview stimulated motivation.

**Object of research**

Understanding of the abstract concept of horizon by 8- to 10-year-old children was the subject of the research. The aim of the research was recognizing the ways in which children construct meanings of the concept of horizon and their cognitive abilities in terms of categorizing that came to light when defining the concept of horizon. The set objectives became the basis for the general research problem: How do children understand the meaning of the horizon concept? and four
specific problems: (a) Which attributes of the concept of horizon are considered to be important? (b) How do children categorize the concept? (c) To what extent do they have stereotypical associations? (d) What values do they attribute to the concept of horizon?

**Analysis of data**

When analyzing the data from, the method of explicating semantic features was used, based on the definitions formulated by the children. The dictionary definition (from the Dictionary of the Polish Language) served to verify the meanings suggested by the children. Comparison between the dictionary definitions and the children’s descriptions of the subject reveals differences between semantic features significant from the point of view of adult language users and the features considered important for the children. The dictionary definition does not fully describe the meaning of the term, with only limited definitional features. The definitions the children gave contain a more complete picture of the subject, because they convey and reinforce individual ideas associated with the subject.

**Results**

Analysis of the semantic paraphrases used when describing the meaning of the horizon is indicative of the children’s ability to distinguish the first dictionary meaning: (1) ‘the line at which the earth’s surface and the sky appear to meet: the horizon (the sun was hidden behind the horizon, the sun appeared above the horizon), the apparent approach’.

In the children’s statements, attempts to interpret the third dictionary meaning rarely occurred: (3) ‘range (knowledge, interests, ideas) broad, narrow, horizons of interest’; and the fourth dictionary meaning: (4) ‘opportunities, perspectives (horizons of new life, new, amazing, horizons arise)’. In the children’s statements the second dictionary meaning was not mentioned: (2) ‘environment, surroundings (on the artistic horizon …)’; and the fifth dictionary meaning: (5) ‘curtain, wall forming the back of the stage, evoking the illusion of infinity (theatrical meaning)’. Examples of the children’s statements are presented in Table 1 (the most frequent ones).
Table 1. Examples of the children’s responses to the dictionary definition: (1) the line at which the earth’s surface and the sky appear to meet

<table>
<thead>
<tr>
<th>Age</th>
<th>Male or Female</th>
<th>Ways of categorising</th>
<th>Spatiality</th>
<th>Observer</th>
<th>Action</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.0</td>
<td>female</td>
<td>something you can see.</td>
<td>so far away that it curves</td>
<td>Child</td>
<td>runs away</td>
<td>Just know</td>
</tr>
<tr>
<td>10.0</td>
<td>male</td>
<td>line</td>
<td>away</td>
<td>Child</td>
<td>moves/disappears</td>
<td>Don’t know, teacher</td>
</tr>
<tr>
<td>9.0</td>
<td>female</td>
<td>border/island</td>
<td>at the top/at the bottom</td>
<td>captain/pirate</td>
<td>approaches</td>
<td>My house</td>
</tr>
<tr>
<td>9.0</td>
<td>male</td>
<td>sunset</td>
<td>behind the water/behind the island</td>
<td>Traveller</td>
<td>plays tag/disappears</td>
<td>Mum</td>
</tr>
</tbody>
</table>

(1) the line at which the earth’s surface and the sky appear to meet

When defining the first dictionary meaning – the one most often represented in the statements – the pupils synonymously capture the concepts of horizon and skyline, which may result from the overlap of the horizon line with the skyline (in fact, the skyline includes a fragment of the Earth’s surface, the horizon refers to the space above the surface of the Earth). Features of the concept (differently defined by the dictionary and the children) show the diversity of the descriptions. The facets typical of a scientific approach are as follows: type, origin, features, functions, and of the colloquial approach: looking for relationships with humans, indicating the time-space perspective and the behaviours of the “humanized horizon”.

The child’s ways of categorising

Instead of categorizing words such as ‘line, scope, range, possibilities’, the majority of the children described the concept by using the following phrases: ‘something like …’; “It is when someone …”. The children’s phrases indicate that they feel the need to categorize when defining concepts. The phrase “this is something that …” is a categorization by indication. With the pronoun this and the indefinite pronoun something, the children seem to replace the category name that they do not know and cannot explain. The associations mindmap revealed the children’s categorization on the basis of family resemblance. Around this core meaning (the horizon as an apparent contact of the sky with water), other meanings/expansions which the children included on the basis of similarity to the prototype (shore, line) were assigned. However, this is not a similarity, meaning that all elements have all definitional features – just like in the classical categorization.
Analysis of the statements shows that the concept of horizon used by the children was most frequently associated with holiday experiences and film images about holidays. In this area, the meanings were mostly connected with: water, shore, sun, island and ship. In addition, episodic associations were connected with: beach, sand, palm trees, sky, gulls, sunsets, ships, pirates, treasure, and chest.

Selection and arrangement of concept features from the children’s perspective

Surprisingly, it turned out that the children at a younger school age were able to give differentiated semantic characteristics of the abstract concept of horizon: time and place of occurrence, relationship with man and activities (shifting and expanding).

Time and place (spatiality)

Describing the word in its first dictionary meaning, the children visualized the surface that separates what can be seen from what is not visible. Most often, there were descriptions of the apparent line separating the sky from the earth (land and water) into two parts, which determines the boundary between the space visible for observation and that obscured by the Earth. Commonly, the children also visualized the entire horizon, most clearly observed at the sea-side. In this case, it took the shape of a circle, (the horizon is so far away that you can barely see, but you can see and see that it even looks as if it was becoming round). There was also such output where the horizon was partially obscured by hills, trees, buildings (in mountainous terrain, the horizon is the most remote visible element of the landscape). This diversity of horizons is indicated by the statement: The horizon can have different shapes depending on the place we are in. Mountains meet the sky. What you see at this point is the horizon. The horizon can be found at any time of the year or day, however, in the conceptual model of the horizon from the children’s perspective, two characteristics of temporal identification of the object are particularly evident. Predominantly, the children associate the horizon with summer (not a single piece presents the autumn or winter horizon) and the sunset rather than the sunrise (however, this contrast is not as clear as the previous one, because of pieces with the sun appearing in the sky). In the children’s output, therefore, the height of the sun above the horizon changes. Taking into account elements of the topography of the place of observation in reality, the children describe the topographical horizon. In the children’s output, objects usually appear on the horizon, they are completely visible, although the children visualize them as smaller (the question arises whether the children are aware of the sphericity of the Earth). Selected descriptions of objects that appear on the horizon are presented below:
Objects on the horizon

| The Sun: | Horizon, it’s something that you can see as if the sun were coming in. The horizon is where the sun goes into the sea, goes out and on the other side the moon grows |
| Water: | There is the sea on the horizon, there is a lot of water |
| Land / shore / island: | When I see different fairy tales, it’s how the captain tells from the horizon that the land is visible, because the horizon is above the ground; The horizon is in front of the shore, or maybe the horizon is the shore |
| Ship: | On the horizon you can see ships that are sailing to the horizon, and pirates are like coming in. The ship is sailing and the island is on the horizon |

Scientific descriptions also indicate the existence of two horizons: astronomical (determined by a parallel to the horizon of the observer) and true (determined by the sphericity of the Earth).

**Relationship with a person (as an observer)**

The children also see the coexistence of the horizon and the observer. In their understanding of the horizon, there is always someone (their eyeline, or the distance equal to the height of the observer’s eyes above the surface of the Earth). Usually, therefore, they visualize the horizon of the observer whom they always place in the centre (on the skyline, never on the horizon line or the horizon). Each time, the observer can look around the horizon: the land, water, an island. It is also important that the horizon viewed by a person is different to the features of the horizon: it is unattainable, elusive, free and independent.

**Activities**

The basic activities distinguished by the children are shifting of the horizon and widening of the horizon

**Shifting of the horizon.** The children notice that changing the observation site (movement) causes the horizon to move with the observer. We are not able to look beyond the horizon, as we cannot look beyond the horizon on the surface of the earth, we can approach the horizon, but the horizon is constantly moving away. This is confirmed by the verbs and adverbs in the children’s statements: *when you sail, you see the island first, then sail on and, again, you see some plants, or some country or continent, that’s another horizon.*

**Widening of the skyline.** The children also notice that the higher the observer is raised above the surface or water, the more distant her/his horizon seems. Because they do not live outside of space and time, they place the cognized reality in space and time and evaluate with the help of elemental semantic oppositions, defining the microcosm of ME (everything on top – evaluating positively, and what is at the bottom – negatively). Widening of the skyline is associated with climbing a high mountain where the destination is located. Climbing, overcoming difficulties, obstacles, reaching the top of a mountain triggers positive associations (you can see more from the top).
(2) range (of knowledge, interests, ideas);
(3) opportunities, perspectives

Statements on the meaning of the third dictionary definition (*look beyond the horizon, cross borders*) and the fourth dictionary definition (travel, reading books open new horizons) were less frequent.

**Table 2.** Examples of the children’s responses to the dictionary definitions: (3) range (of knowledge, interests, ideas); (4) opportunities, perspectives

<table>
<thead>
<tr>
<th>Age</th>
<th>Male or Female</th>
<th>Ways of categorising</th>
<th>Observer</th>
<th>Action</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.0</td>
<td>female</td>
<td><em>when somebody</em></td>
<td><em>child</em></td>
<td><em>looks for</em></td>
<td>Just know</td>
</tr>
<tr>
<td>10.0</td>
<td>female</td>
<td><em>barrier or something</em></td>
<td><em>human</em></td>
<td><em>conquers</em></td>
<td>Don’t know, teacher</td>
</tr>
<tr>
<td>10.0</td>
<td>male</td>
<td><em>border</em></td>
<td><em>traveller</em></td>
<td><em>widens</em></td>
<td>My house</td>
</tr>
<tr>
<td>10.0</td>
<td>male</td>
<td><em>exists when</em></td>
<td><em>he</em></td>
<td><em>fights</em></td>
<td>Mum</td>
</tr>
</tbody>
</table>

Thinking about the third and fourth aspect of meaning triggered the following statements:

- **(3) range**
  - People read books and broaden their horizon of knowledge. I am referring to the horizon of knowledge, because they read and expand their horizon of knowledge through these books. There is a smudged horizon there
  - I do not know how to say it, the horizon is a barrier or something. It can be such a barrier of fear. He is trying to overcome the fear of heights, trying to fight to the end. He has such courage in his heart. It is the horizon of courage
  - He takes care of animals, and animals are his passion and his family does not allow him to do it, and he does it, he opposes the will of his parents, he exceeds this will. He crosses the border because it’s good for him.

- **(4) opportunities/perspectives**
  - How can these Polish travelers be afraid, but they are looking for treasures. Someone does not believe them, and they say that they will succeed, they will succeed, they will succeed and then they return with the treasure because they had such imagination that something is there and that they will succeed. And these other people will be very surprised ...
  - Madam, to broaden the horizons you must have courage and imagination and even desire.

Based on the collected statements, it is clearly visible that for the children the horizon is not an unambiguous term and not determined in a precise way. The
third graders, defining the third and fourth dictionary meaning, pay attention to the aspect which mentions opening unusual horizons (knowledge, courage, overcoming barriers, will). They pay attention to the volitional, mental and emotional activity of a person who wants to broaden their horizons: to broaden horizons, one must have courage and imagination and even desire. What distinguishes this dictionary meaning is the information about the pursuit of something and the ability to consciously, deliberately, free of external coercion, perform certain activities.

**Evaluation**

The questions that the children asked the horizon caused its “humanization”. This led to placing the horizon in the circle of values and metaphysical anti-values: to exist, create, discover, arise, live vs. disappear, end, vital values: do, look, travel and sensory values: like, be needed. From the questions to the humanized horizon, we can draw the conclusion that the pupils in the research perceive the horizon as a distant, large/long object, escaping, disappearing, never-ending. The children’s statements testify that we see things not as they are in objective reality, but rather as they appear in our experience:

**Summary**

In the research, we assumed that while maintaining certain conditions in organizing the educational environment, pupils would be willing to take the trouble to interpret difficult, complex existential problems. It was also assumed that an non-authoritarian style of working together was necessary, which is why the children’s right was recognized to independent, sincere statements, authentic, though often not fully-formed, linguistic judgments.

Due to the conviction of the possibility of including existential problems in the traditional space of educational discourse, there is food for thought on the educational conditions that must be met in order to harmonize educational discourse with pupils’ discourse anchored in the disordered and uncontrolled individual experiences.

The designated areas of analysis of the material gathered from the children's discourse allowed us to become acquainted with the discrepancy between what is school-related and what is private. The analysis made it possible to formulate postulates and “maps” of directions, showing ways of taking into account children’s
viewpoints of the reality they grow in. The analysis also allowed for determining the possibilities of enriching educational discourse and triggering the linguistic images anchored in culture and personal experience created in young minds. Observation and reflection deprived of reductionist attitudes create invaluable opportunities to capture surprising, non-stereotypical reactions and include them as valuable (though not necessarily representative) in the whole picture of the phenomena examined.

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The Effect of Using a Virtual History Strategy on the Development of Historical Thinking Skills for Undergraduate Classroom Teachers

DOI: 10.15804/tner.2018.51.1.09

Abstract

The primary purpose of this study was to investigate the effect of using a virtual history strategy on the development of historical thinking skills among a sample of undergraduate classroom teachers from one public university located in the middle part of Jordan. To achieve this purpose, a historical thinking test was adapted from Al-Safadi (1999), and applied to one classroom with (54) students who studied Arab world history course during the 2016/2017 academic year. The results of the study indicated significant differences (\(\alpha = 0.05\)) between the pretest and posttest in the students’ historical thinking as a result of utilizing the virtual history approach. The study was concluded by proposing practical and theoretical recommendations for the field of study.

Keywords: virtual history, historical thinking, approach, undergraduate university students.

Introduction and Theoretical Framework

History is of particular significance in the school curriculum, as it assures building the learner’s integrated personality to face daily problems in general, and the cognitive revolution requirements in particular, in scientific method and sound logical thinking (Al-Najdi, 2013). It avails the learner of an opportunity to contemplate the historical events, which develops his/her ability to think and
enhances his/her personality and self-confidence (Reisman, 2012). Therefore, it is no longer accepted to teach history in a mere traditional method, based on “feeding” the historical information to the student by the teacher, and limiting the learner’s role to receive and learn by heart, and later remembering and retrieving the information (Al-Maksousi, 2013).

On the other hand, the historical text is no longer thought of as a mere stable, abstract text, as many historical texts hide a lot of information within their folds, which could be written by vague words and structures. For example, many latent facts might be hidden behind the words, idioms or terms, or in between the lines. Furthermore, some texts conceal different meanings from those shown by their apparent meanings (Mohammad, 2016).

The study of history as an explanatory science requires skills of scientific research and historical thinking, as well as employing these skills, so that the learner can become able to interpret historical texts, recognize historical facts, learn about the past and draw a picture for it, identify its effect on the present and prospect future events (Hal, 2013). This requires, among other things, taking care of the historical thinking and its related intellectual and research skills (Salinas, Bellows & Liaw, 2011).

Based on that, history has attracted the attention of many educators and specialists. Its skills are deemed as basic competences necessary for the history teacher. Development of these skills with the learner is among the main objectives of the history subject at all educational stages. They assist the learner to criticize and explain historical events, understand the related phenomena, and understand the historical text in a scientific method, which leads to understanding, explaining and perceiving the relationships between historical events and the degree of their influence on the present (Al-Najdi, 2013). Subsequently, this will leave positive effects on the learner and make history learning meaningful (Levesque, 2016).

Although there are multiple definitions of historical thinking, they all revolve around the learner’s ability to understand historical events and process them one way or the other. In this regard, Buchanan (2015) sees it as one of the sound, logical thinking styles and an integrated part of its skills, which cannot be done without explaining, perceiving or fully understanding historical events through positive interaction with them and involvement in the learning process. On the other hand, Al-Habbad (2015) considers historical thinking as a pool of interconnected skills, which the learner acquires through their interaction with historical texts that help them perceive the relationships between historical events and process them scientifically in preparation for understanding. Eventually, this will lead to interpretation of historical events in the light of what happened in the past.
Dergham (2015) added to the above definition that it is the ability to take decisions concerning historical issues and events, judge the event objectively in scientific critique, and show its reliability extent based on scientific evidence.

Most of the specialists in this area agree that historical thinking consists of a number of skills. For instance, the ability to access historical information from different sources, approach historical facts as far as possible, understand the reality of historical changes, their inevitability and continuity. It also consists of skills to perceive the relationships among the historical events that seem far from each other with no relatedness between them, and analyze them as cause-and-effect relationships, in an approach that enables the learner make scientific prediction and understand these events (Delapas & Ramos, 2013).

It is also the ability to reconstruct historical events and arrange them according to a particular system. After understanding them, the learner will be able to perceive contemporary historical phenomena and relate them to their counterparts in the past and consequently, become able to predict future events. All within the framework of the historical research ethics in addition to the scientific ethics, such as objective commitment and impartiality and non-alignment in favor of an opinion or idea by ignoring other ones (Mohammad, 2016).

There are various positive indicators in the theoretical literature that may reinforce the historical thinking skills and develop them with the learner, using certain strategies through different entries. Concerning this matter, Mansour (2011) emphasised the importance of the accompanying enrichment activities in developing the historical thinking skills.

The virtual history term (What if?) is a modern one originating from the writings Neil Ferguson, professor of history at Harvard University (Cocks, 2016). It is a kind of historical research that does not adhere to the framework in which the historical incidents occurred. Rather, it hypothesizes the occurrence of events that are different from what originally and actually occurred. It consists of a number of images that include answering the question “What if?”, especially in the important and particular points that constitute important shifts in the course of historical events. “What if Hitler won the Second World War?” for instance. Eventually, these visions provide an alternative history to the actual or factual historical record (Collin, 2007).

Virtual history is of great importance to study and understand actual historical events, through comparison of antipodes, raising possible doubts about different historical events, and developing historical creative awareness, through the ability to anticipate historical events; not only knowing the facts and events of history (Black, 2016). This requires the history teacher, in addition to the learner, while
studying history, to take into account all the possibilities of what the historical event might be.

It is unlike fictional history, which is based on, e.g., scientific fiction. Virtual history is actual history, meaning that the possibility of occurrence in reality is very high, but it did not occur, such as the victory of a party in a particular battle, hypothesizing that the defeated party is victorious, then imagining new historical events based on this hypothesis. Meanwhile, fictional history is based on imagining a history that would never happen, or of very low occurrence possibility. For instance, star war, invasion of the earth by creatures from other planets, and many other science fiction stories (Roberts, 2011).

Therefore, when making alternative scenarios for virtual events and their hypothesized courses, it is necessary that these scenarios are serious, acceptable, reasonable and viable in reality. They should draw new, doubtless, rational courses of historical events, so that a person not familiar with history can believe that they are real history, never thinking that they are fictional or unreal stories (Gilley, 2013).

**Statement of the Problem**

Historical thinking is an important skill that helps learners increase their awareness of historical events, through building an integrated cognitive framework, explaining the relationships of past events with current events and their effects on the future. This study was conducted in order to explore the impact of teaching history, according to the virtual history strategy, on the development of historical thinking skills among a sample of undergraduate teachers. Namely, the study aimed at answering the following question:

*What is the effect of teaching history using a virtual history strategy on developing historical thinking skills among undergraduate classroom teachers in Jordan?*

**Significance of the Study**

It is anticipated that the study results will be important for history teachers, as it opens a new perspective on history teaching that can replace the traditional methods depending on rote learning and memorization. It is also important for learners as it shifts them from being a mere recipient and memorizer of the information to a positive participator, thinker and analyzer. Furthermore, they can
provide their own views on historical events and make activities and projects, and participate in evaluating their mates. The study results are hoped to be important to the planners of history teaching, by including these plans of topics in virtual history, which allows the learner to practice thinking, criticism, and analysis and evaluation skills.

Methodology

Study Participants
The study participants consisted of 54 male and female undergraduate students majoring in teaching from a public university in Jordan.

Instruments
To achieve the study purpose, the authors employed the historical thinking skills test prepared by Al-Safadi (1999). This test consists of 25 multiple-choice items, with a reliability coefficient of .84, based on the Kuder-Richardson 20 equation. To ensure the test reliability, it was applied to an exploratory sample of 50 students of the faculty of education from outside the study sample, whose major was classroom teacher. The test items were analyzed through calculating the difficulty and distinction coefficients and the Kuder-Richardson equation.

Procedures
The study was conducted with the use of the following procedures: first, applying the historical thinking skills test on the study sample prior to the use of virtual thinking as a pretest. Second, teaching the subject of Arab World History based on this strategy by the researcher himself, according to the following steps (Roberts, 2011): (a) explaining the lesson objectives to help the learner define main points he/she has to understand and take into account, providing a general idea explaining this strategy and how to put forward the virtual questions. Explaining the new concepts and general ideas in multiple ways, through lecture, power points, and discussion; (b) the learners were asked to make five questions about the virtual history “What if?”, in which they were asked to search for the subject matter of the lesson, which was different from the reality and sequence of the historical events; (c) the learners were required to choose three out of the five questions they had put forward, and deepen their revision with reference to the different learning sources. This would increase their awareness of the historical events, through focusing on the following axes: What do they know about the question? What do they want
to know? Why do they want to change the course of the historical events in this way? What is the new knowledge and skills they learned after this research and exploration? (d) the learners were asked to choose one of the three questions to be the base of their project in virtual history, explaining the reason for this selection, such as its importance over others, occurrence likelihood, or any other reason; (e) initiating an imaginary alternative geographic plan for how the new (virtual) reality would be in the light of answering the question “what if?”, which uncovers the aspects in which they need help; (f) holding comparisons between virtual history and real history, in terms of similarities, differences, amount of difference; and (g) the learners selected the most interesting works and made comments on them.

**Statistical Analyses**

Means and standard deviations of the learners’ grades in the pre-post tests were calculated. T-test was also applied to the paired sample t-test, to calculate the significant differences between the pre-posttests. Then the volume of the effect was calculated with the use of Cohen $d$, to verify the effect of virtual history on developing historical thinking skills with the study population members.

**Results and Discussion**

To answer the study question, means and standard deviations of the learners’ grades in the pre-posttests were calculated as shown in Table 1. To detect t significant differences between the pre-posttests, paired t-test statistic was applied, as shown in Table 2.

<table>
<thead>
<tr>
<th>Test</th>
<th>Mean</th>
<th>SD</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>10.03</td>
<td>3.97</td>
<td>54</td>
</tr>
<tr>
<td>Post-test</td>
<td>16.79</td>
<td>4.30</td>
<td>54</td>
</tr>
</tbody>
</table>

**Table 1.** Means and SDs of the Learners’ Grades in the Thinking Pre-Posttests

<table>
<thead>
<tr>
<th>Test</th>
<th>Mean</th>
<th>SD</th>
<th>Lowest Value</th>
<th>Highest Value</th>
<th>Lowest Value</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest-Posttest</td>
<td>6.75</td>
<td>4.92</td>
<td>5.41</td>
<td>8.10</td>
<td>10.07</td>
<td>53</td>
<td>0.00</td>
</tr>
</tbody>
</table>

The above table shows a statistically significant difference at $\alpha=0.05$ level between the pretest and posttest means in favor of the latter. This indicates an improvement in the historical thinking of the study population, after studying
history using the virtual history strategy. The researchers calculated the effect size using Cohen D to ensure the size of using the virtual history strategy, which was 1.37, a large value as per this indicator. This study result is in line with those of the studies of Al-Najdi (2013) and De La Paz & Wissinger (2015). The common result in all these studies underlines the ability of well planned, untraditional teaching and strategies input in the development of the historical thinking skills for students. These results could be interpreted as follows:

Virtual history strategy begins with an introduction, illustrating the main concepts and objectives of the theme. This allows for an important structure to the learner, which helps him/her explore all the aspects of the topic. It further enables him/her to pose the virtual questions “What if?”, which is totally different from the course and sequence of the real historical events. This is quite beneficial in focusing learners’ attention, organizing the historical information and motivating them to start answering these intriguing thoughts and interesting questions per their statements. Putting forward these questions requires a deep awareness of real historical events, to allow for asking related virtual questions, which would lead to developing the learner’s skills in understanding and perceiving the historical event.

Then the learner selects three (only) from the five questions he/she puts forward at the beginning to research them deeply; and he/she elects one question only out of the three as a basis for his/her project. This step is difficult for learners during the implementation of this strategy because it requires them to recall previous experiences, look into the topic anew, and discuss different points of view, to justify this selection by searching for evidence and logical arguments.

As a result, the learner will form scientific opinions built on logic and justifications, which helps in developing historical thinking skills based on cause-and-effect relationships, finding relations and providing arguments. This is in line with the results of Salim’s study (2011), showing that processing historical search for evidence and weighing it, justifying its significance and value, and disclosing the relations between different facts, contribute to developing historical thinking skills, since the learner follows the scientific work of the historian and comes very close to his/her thinking.

In the last step of this strategy, the learner draws a substitute map, in which they express their images of the new world, in the light of their virtual questions. This step requires the learner to increase their reflective abilities of perceiving images, which deepens their understanding of historical events and links them to new events. In addition, it provides a visual image that takes root in the brain, as well as concrete experience, making the historical events information easy to
understand, which enables the learner to hold historical comparisons between the new world image they achieved through this strategy, and the actual historical reality. Understanding the similarities and differences between these two images helps the learner develop historical thinking skills concerning these comparisons, and interlink the historical events. This is in line with the result of Alex (2015), showing that it is possible to develop historical thinking skills using charts, graphs and drawings as visual organizers, as they lead to observing the wholeness of historical events, in addition to their parts, which facilitates connecting and understanding the historical events.

Learning with the use of the virtual history strategy limits the dominance of the traditional learning based on mere receiving the history topic, which causes learner boredom. The strategy also enhances the pivotal role of the learner in the active work based on understanding and analyzing historical events, and imagining alternatives and parallel events thereof. There would be multiple opportunities for the learner, such as using all senses in the learning process, providing a new method to express thoughts, presenting through Power Point or wiring projects and computing use to benefit in this area. Similarly, Hall (2013) ensured that the use of multimedia and technology in the classroom directly enhances the development of the historical thinking skills, integrates the learner into the learning process to the widest extent, and, at the same time, prevents them from boredom.

Based on the above discussion, a number of practical and theoretical recommendations are provided for the field of study. First, history teachers are recommended to adopt this strategy in teaching because of its effect on the development of the historical thinking skills of the learner. Second, planners of the curricula are required to place particular importance on this method when designing history courses. Third, researchers are highly advised to carry out more studies to identify the effect of this strategy on history teaching and learning accurately and apply this study to other samples of college and school students and measure its effect on other variables, such as critical thinking or achievement in the history topic.

With regard of the contribution of this study to the field, it is emphasized that virtual history as a teaching strategy has proved useful in improving the historical thinking skills of undergraduate students majoring in classroom teaching in Jordan. This is an addition to the research especially for cross-cultural comparisons.
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Modern Educational Tools in the Teacher’s Work

DOI: 10.15804/tner.2018.51.1.10

Abstract
The article serves as a summary of one of the parts of the research carried out under the NP-2550 grant in the Department of Education and Media in Education of the Faculty of Pedagogical Sciences at Nicolaus Copernicus University in Toruń. The presented analyses concern the application of modern educational tools in the process of education. The work includes a discussion of the frequency, as well as ways, of using ICT devices by early education teachers. It shows the relationship between the presence of modern computer tools in the teaching process and the constructive-cognitive character of activities undertaken in the classroom. The research referred to was carried out among 148 teachers in the Kujawsko-Pomorskie Province. The analyses presented to the reader are mainly based on the quantitative data obtained on the basis of: knowledge and skills tests, observation, as well as surveys. The research material was supplemented with qualitative data obtained through the conducted interviews.

Keywords: cognitivism, constructivism, modern educational tools, tablet, interactive whiteboard, Internet, smartphone, multibook

Introduction

The educational space – regardless of its real or virtual character – has become significantly diversified in the last decade. Computers, interactive whiteboards, tablets, smartphones, multibooks, and other electronic teaching tools have appeared (U.S. Energy Information Administration; Bulman, Fairlie, 2015). Day by day,
they are becoming more and more accepted, appreciated, more often interwoven into the course of daily activities, unfortunately, not always in a correct manner. Sometimes the lack of professionalism on the part of lecturers may entail discouragement of children from learning as well as from computer teaching aids. In order to improve the situation, the academic community should constantly control the level of knowledge and skills of educators, diagnose the needs and problems of teachers, promote appropriate work patterns with modern computer tools, take care of access to educational materials, promote lifelong learning, thoroughly prepare students – future teachers who will undoubtedly come across the problem of the constantly evolving school reality (Siemieniecka, Kwiatkowska, Majewska, Skibińska 2017; Siemieniecka, Siemieniecki, Rice, Kelly, 2016).

Analyzing the pace of transformations related to the emergence of modern educational tools, it should be stressed that despite the efforts made by the head teachers of educational institutions, few schools are keeping up with the changes. As a consequence, teachers do not always have access to modern educational tools, or do not know how to use them properly. It is worth emphasizing the importance of continuing education, as well as the need for open access to various forms of education that help in mastering the necessary knowledge and skills. As an example, the first in-line full-time first-cycle studies in the field of media pedagogy launched in the 2015/2016 academic year can be used. 1

**Modern educational tools from the perspective of constructive-cognitive theories (Research Problem)**

Undoubtedly, one of the most important theories in modern education is cognitive-constructivist theory, which facilitates planning and undertaking effective educational activities by the teacher (Siemieniecki 2016, pp.21–35), in this case – supported by elements of ICT. The interactive whiteboard, computer, or tablet, connected to the network, make it possible to provoke situations in which children (in groups or independently) look for, interpret, experience, check, and thus create their reality. What is helpful in this area are: educational portals, interactive dictionaries, exercise books, multibooks, e-bases, games, chat and forum, etc. Learning through them can follow one of three schemes developed by Bronisław Siemieniecki:

- sender – content, form of communication – recipient,

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Modern Educational Tools in the Teacher’s Work

- sender – content, form of communication – other participants in the communication process, e.g., Internet users,
- recipient – content, form of communication – other participants in the communication process, e.g., Internet users (Juszczyk, 2007).

It is worth noting that the form of messages conveyed with the use of modern educational tools correlates with the division proposed by Krzysztof Kruszewski, according to which information may occur in the form of:
- teaching material,
- information received by the learner,
- information created by the student,
- information in the student's memory.

The main advantage is the interactive nature that stimulates visuals, auditors and kinaesthetics.

A brief overview of the research (Research Focus)

In the last decade, many studies have been carried out covering various aspects of the use of information and communication technologies in the work of teachers, as well as of students from various age groups. The following have been subjected to analysis:
- changes related to equipping classes with computer devices and to the use of ICT during lessons (Johnson, Wood, Sutton, 2014, pp.91–96),
- preparing teachers (and students of pedagogy) to work with new media (Voogt, McKenney 2017; Juszczyk, Kim, 2015),
- acceptance of modern educational tools by students and teachers (Jen-Hwa Hu, Clark, Ma 2003; Majewska, 2014),
- frequency of using ICT in the classroom (Pelgrum, Voogt, 2009),
- popularity and form of using computer tools in leisure time (Žumárová 2015; Siemieniec, Majewska 2015; Juszczyk, 2014),
- benefits and losses resulting from the use of computer tools in the teaching and learning process (Siemieniecka 2013; Livingstone 2012; Riasati, Allahyar, Tan, 2012), etc.

Some of the procedures mentioned are complementary and overlapping, showing an analysis of the same problem at various educational levels. This does not mean, however, that further exploration of the topic is not needed, but just the opposite. The influence of Western trends on Polish education, as well as the rapidly changing situation in education, mean that these results must be constantly updated and expanded with new contexts. Especially that the teacher’s role in the world determined by technological development is constantly changing.
Referring to the problems raised in the presented research, it should be emphasized that the dynamism of the changes related to the appearance of ICT is very big. In 2001 in Poland, there were about fifty students per one computer, in 2005 – 26, while in 2014 – six. (Jaranowska, 2005, The Educational Research Institute). In the following years, interactive boards, electronic register (Majewska, 2016) and tablets appeared in schools. It is worth noting that despite the passage of time and a number of activities undertaken, the level of school equipment is still very different. A sample survey conducted in the spring of 2014 showed that in Poland there are still schools where there is “only one interactive whiteboard available (...) – in one school the whiteboard is in the first class, whereas in another the board is in the mathematics classroom. This considerably limits the chances of other teachers using the interactive whiteboard in their classes” (Brosch, 2014, pp.76).

In the group working at the early education level, the cassette player (84%) and the CD player (80%) were still most often used at that time (Maciejewska, 2014, pp.7). These tools were used mainly for listening to music recordings and less frequently for watching films. Additionally, in the early education classes, the following were used:

- desktop computers - 40%,
- laptops – 37%,
- audio equipment – 39%,
- multimedia projectors – 33%,
- interactive whiteboards – 37% (Ibidem, pp.6,8).

It is worth adding that at the level of early education, multimedia educational materials have started to play a significant role. Their use in grades 1–3 of primary school was declared by three out of four respondents. Usually, the respondents supported their work with resources contained in multibooks (64.6%). On average, one in four (25.6%) used interactive educational games. Electronic textbooks (18.9%), online exercises, and network resources (17.9%) were slightly less important. They were used by only one class in five. One may wonder about the reason for this phenomenon, as the data collected show that approximately 95% of the facilities had connection to the network. In the early education classes, both educational materials and homework were transferred in a traditional way – the Internet was, therefore, rarely used for contact with pupils (which was declared by about 7% of the respondents) (Ibidem, pp. 10–14).
Research Methodology

The presented research was carried out in 2016\(^2\), on a group of 148 early education teachers from the Kujawsko-Pomorskie Province. The selection of the research group was random. The actions taken were based on the diagnostic survey method (questionnaire, partially directed interview, and observation), supported by statistical methods (knowledge and skills test). The inference was mainly based on quantitative data supplemented with a qualitative analysis. The main goal of the presented project was to examine teachers’ preferences regarding: computer educational tools, educational software, as well as websites containing teaching materials used during lessons. The focus was also on teachers’ skills and competences, associated with the use of computer educational equipment in the course of teaching. During the research, the relationship between the presence of specific ICT tools and the constructive-cognitive nature of teaching was analysed. As a result, the following research goals were distinguished:

- Analysis of types, methods, and forms of using computer educational tools by early education teachers.
- Understanding the relationship between the presence of computer educational tools in the teaching process and the constructive-cognitive nature of teaching.

Among the specific issues distinguished there were the following:

1) What kind of computer educational tools do teachers use?
2) How often and for what purpose do early education teachers use computer educational tools?
3) What forms and methods of teaching do teachers use when using computer educational tools?
4) What factors influence the use of computer educational tools?
5) Is there a connection between age, seniority, or professional level and the form of using computer educational tools?
6) Do early education teachers want and are they able to operate interactive whiteboards, tablets, smartphones, computer didactic software, and e-books?
7) How often and of what type of teaching software do early education teachers use?
8) Do early education teachers benefit from Internet resources and, if so, of which resources?
9) Do teachers have any problems with using TI tools, and if so with which tools?

\(^2\) The main part of the research was carried out under the NP – 2550 grant, the analyses were completed in the first quarter of 2017.
10) *Do early childhood education teachers deepen their knowledge about teaching with the use of modern computer didactic means? If so, how do they do it?*

11) *Do teachers see the connection between the presence of computer educational tools in the teaching process and the constructive-cognitive nature of teaching?*

The statistical significance was verified using Chi square tests as well as properly determined correlations.

**Research Findings**

The completed research showed that the teachers used modern educational tools during their daily work. Currently, in grades 1–3 of primary school the most commonly used are computers, interactive whiteboard, and multibooks (less frequently – e-books). However, it should be emphasized that despite the long-term presence of the equipment in everyday life, there are still people who avoid educational activity supported by ICT tools. Two of the teachers surveyed, despite access to IWB, used only a traditional, dry-wearable board, justifying this by the lack of the need to reach for new media and various problems arising in the course of working with computer equipment.

![Figure 1](source: own study)

**Figure 1.** The number of teachers using specific computer tools (percentage).

*Source: own study.*

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3 IWB - Interactive White Board
The emergence of computers and interactive whiteboards in the classroom has largely replaced CD and DVD players, which were used by only 2.7% of the participants in the research.

The research shows that an average of 94.93% of the teachers who have access to the efficient Internet use the resources at home or in the classroom. Educational portals, websites containing video guides, interactive games, and lesson plans and materials developed by educational publishers (enriching traditional textbooks) are of great interest. The teachers emphasize that when preparing for classes they use the help of virtual educational space. Interesting resources are saved or printed. The majority (76.35%) prefer to conduct lessons based on ready-made materials – thus giving up the search for videos, games, or educational portals directly in class. Their reasons include concern about: a slow-operating network (7.43%), problems with the correct loading of websites (16.22%), and inability to complete the planned stages of lessons (21.62%). Over a half of the teachers (58.78%) are afraid of having to install drivers or update programs. Anxiety is also caused by the risk of encountering websites with pornographic content (54.73%). The aforementioned concern of the mentioned group does not mean that the teachers are not interested in diversifying activities. On average, 85.81% of the teachers (in their spare time) browse the Internet using a smartphone, and almost half of them (48.65%) use tablets at home. These people emphasize that these tools should be included in the equipment of each class.

The tools available in the school space make it possible to enrich everyday activities with multimedia elements such as: film, graphics, sound, presentations, exercises, educational games, etc. 96.62% of the teachers describe the teaching software used as mainly free software supporting learning Polish literature or mathematics. Usually, the interactive potential of computer resources is used several times a week on average, as is declared by 63.51% of the respondents. Every third teacher participating in the research (33.78%) declares that he/she includes interactive forms of activity almost every day in the course of lessons. Obviously, in the course of the research, a group was distinguished which either did not use computer tools during their lessons or used them in a completely incorrect way, but they were a minority – 3.38%. The mentioned classes were traditional, and the tools used brought to mind the first of the SAMR levels developed by Ruben Puentedura (Puentedura, 2014).

During the research, it was noted that lessons supported by computer tools were of a mixed character. Some information was provided in the expository form while other information in the inquiry form. The teachers are attached to traditional methods, and ICT tools in this system only enrich the course of the lesson. The
total cut-off from the models of: reverse class, rotational model, connectivist model, gamification, and others, is accounted for by the teachers as caused by lack of time (76.35%), lack of trust (85.13%), and ignorance (41.89%).

A special role in the case of the teachers using computer educational tools is played by school class equipment. Its insufficiency causes the teachers to give up new technologies in class. They do not seek access to tools or to a computer lab. The teacher’s age and the level of acceptance of multimedia computer tools are also important. The results of the surveys show that the level of knowledge and the sense of confidence in the context of using new technologies play an extremely important role. The teachers admitted that they were more eager to reach for new media in a situation in which they had ready-made resources, including teaching games, interactive exercises, multimedia presentations, etc.

The analyses carried out showed that there was a connection between: seniority and the form of using computer educational tools as well as the teacher’s age and the form of using computer educational tools. As the teachers’ age and seniority increase, the number of interactive educational resources included in the course of lessons decreases. On the basis of the collected materials, it can be concluded that these values directly correlate with knowledge about the possibilities of use as well as the ability to use modern computer tools. The analysis of the data showed that especially against the background of the whole, a group of teachers over the age of fifty-five stands out. These people declare that they have problems with operating modern computer tools, including updating and installing software, drivers, selecting the appropriate equipment parameters, starting the sound, etc. The reported problems are, therefore, technical. The fear associated with the emergence of numerous difficulties significantly discourages teachers from using computer educational tools. As a result, more than half of the respondents over the age of fifty-five admitted that they had never used tablets or smartphones. The above teachers frequently stressed that “computers and interactive whiteboards are tools for young people”.

The observations made showed that teachers are aware of and accurately assess their knowledge and skills in working with computer equipment.

In order to supplement their skills, the teachers participate in free training, start postgraduate studies, use resources developed by their colleagues, and suggestions from students or members of their own families – usually children.

According to the indications of the respondents, the inclusion of information technology in the course of lessons favours the making of references to the constructive and cognitive trend. Why? The following arguments dominated the answers given:
• the interactive whiteboard favours children’s working together (81.08%),
• the interactive whiteboard helps to visualize problems (75.67%),
• interactive exercises involve students in the cognitive process (68.24%),
• connection to the network makes search for additional information possible (65.54%),
• lessons in the lab with a tablet or smartphone facilitate the individualisation of teaching (25.67%).

**Discussion and Conclusions**

The collected data show that the current model of early education using modern computer tools is closely related to traditional education, in which the teacher plays the main role. Of course, on lessons, reference is made to constructive-cognitive thought, which is only a diversifying element.

As part of the conducted research, it was noted that although the teachers were aware of the importance of autonomous action and gaining experience, the vast majority of them decides on a given character of the activities. In their opinion, the extensive curriculum does not allow for experimenting or unnecessary fun. As a consequence, the pupil should learn the material presented by the teacher during the lesson, remember it, and then practice the application of the memorized knowledge. The above course of thought, as well as the consistency of the actions taken, makes the children absorb rigid patterns of action, including solving equa-
tions, substituting data into a pattern, writing letters, invitations, etc. The need to master specific skills directly related to the result plan destroys the spontaneity of teachers, depriving them of the desire to act creatively and to stimulate in children higher levels resulting from Benjamin Bloom’s taxonomy.

As a result, the school teaches pupils mainly to remember and apply knowledge in typical situations, which has often been pointed out in the interpretation of PISA results (OECD, 2012). Teachers, despite having access to computer devices and good skills in their use, use them mainly for presentations: films, graphics, sound, etc., thus departing from the educational models developed for the new media, which should arouse a number of reflections and well thought-out activities in the academic environment.

References

4 The competence-based teaching programme related to the syllabus, defines the skills that should be acquired by the pupil after completing a given education stage.


Abstract
The aim of the study was to examine relationships between adolescents’ perfectionism and their parents’ parenting. The research method included the Parental Behaviour and Attitudes Questionnaire – ADOR (Matějček, Říčan, 1983), Multidimensional Perfectionism Scale – MPS (Frost et al., 1990) and Perfectionism Cognitions Inventory – PCI (Flett, Hewitt, Blankstein, Gray, 1998). The research sample consisted of 122 secondary school students aged 16 to 19 (average age 17.37 years), including 44 boys and 78 girls. The main findings of empirical analysis were that there are differences in the relationship between the father’s and mother’s influence on the development of some perfectionism dimensions in their children. The dimensions Concern over Mistakes and Doubts over Action showed a negative significant relationship with the father’s Positive Interest ($r = -0.25^{**}$). The relationship was not confirmed in mothers. Concern over Mistakes and Doubts over Action showed a weak significant relationship with Hostility in the father ($0.21^*$) as well as mother ($0.25^{**}$), and also a moderate relationship with the father’s as well as mother’s Inconsistency ($r = 0.25^{**}$, $r = 0.33^{**}$). The dimension Organization showed no relationship with the father’s parenting. In the mother’s parenting, a moderate relationship appeared between Organization and Positive Interest ($0.35^{**}$).

Keywords: perfectionism, adolescents, parental behaviour and attitudes
**Introduction**

Perfectionism as a psychological construct has been considerably studied abroad over the last decade as a phenomenon significantly influencing many areas of human life. Although perfectionism is not a dominant topic of research in our conditions, such a tendency or personality trait is valued in the social life and especially in the work area, in particular if bringing benefits in the form of higher performance or productivity of work. However, many authors note that perfectionism has more maladaptive functions than adaptive ones. Maladaptive perfectionism is often connected with anxiety, depression, obsessive thoughts, but also with eating disorders and often with impaired interpersonal relations. In order to understand this multidimensional personality variable it is necessary to examine its sources. Several foreign research studies point to the fact that it is family that participates in the emergence of perfectionism the most (Flett, Hewitt a Singer, 1995; Frost, Marten, 1990; Flett, Hewitt, 2002; Soenens, Elliot et al. 2005; Besharat, Azizi and Poursharifib, 2011, etc.). In our conditions, the relationship between attitudes of adolescents towards themselves and the perceived parental parenting style has been dealt with by Ďuricová, Hašková (2016). For the above reasons, we decided to study family as the source of perfectionism emergence in adolescents in our cultural conditions.

According to R.O. Frost et al. (1990), perfectionism is defined as a tendency to set excessively high personal standards for oneself. According to G.L. Flett and P.I. Hewitt (2002, p. 5), perfectionism may be characterized as the “striving for flawlessness” and “extreme perfectionists are people who want to be perfect in all aspects of their lives”. Another view on perfectionism is that it is striving very hard to achieve goals and standards. The striving is accompanied by sharp self-criticism when the goals are not achieved. The reason for such striving can be reliance of self-esteem on obtained results (Egan, Shafran, Wade, 2012).

Perfectionism was originally considered to be a one-dimensional construct based on factors of cognitive perfectionism, either on irrational beliefs (Ellis) or dysfunctional attitudes (in: Flett, Hewitt, 2002). Currently, perfectionism is considered to be rather a multidimensional construct. Authors mostly agree that the main feature of perfectionism is setting personal standards for oneself.

Researchers differ in their approach or criteria by which they assess the multidimensionality of perfectionism (Sherry et al., 2009). R.O. Frost et al. (1990) (whose conception of perfectionism was used in our research), a respected author in the field of perfectionism, created a 6-dimensional method for determining perfectionism (The Multidimensional Perfectionism Scale), based on four self-oriented...
dimensions (Concern over Mistakes, Personal Standards, Doubts over Actions, Organization) and two dimensions reflecting the perception of parental requirements on children (Parental Expectations, Parental Criticism). Concern over Mistakes reflects negative reactions to mistakes, a tendency to interpret mistakes as equivalent to failure. Personal Standards mean setting very high standards for oneself and importance of achieving such standards for self-evaluation. Parental Expectations are a tendency to believe that parents expect their children to achieve very high goals. Parental Criticism is a tendency to perceive that parents are (or were) too critical to children. Doubts over Actions is the extent of one's doubts about one's ability to complete tasks. Organization means over-emphasizing order and organization.

Perfectionism plays an important role in working life, in the educational process – it considerably influences pupils' motivation, personal standards, affectivity, cognitive processes and, last but not least, pupils' own performance (Flett, Blankstein, Hewitt, 2009). What is significant is also the impact of perfectionism on an individual's social life, it affects an individual's action in social interactions in various small social groups.

Most of the previous research findings indicate that perfectionism is probably a learned personality variable, and that a person's closest environment and life experience have a great influence on its formation. Many perfectionists report unreasonable expectations of parents for their children's performance or critical, punishing parents as the cause of the development of their perfectionism. Parents who are too critical while also perfectionistic develop such a predisposition to a great extent also in their children. They teach their children to be perfectionists mostly in two ways. Firstly, by the way they build social relationships before them, and secondly by their attitude towards life, thus too high expectations whether for themselves or their children (Frost, Marten, 1990). A more complex model of the impact of the family environment on the development of perfectionism was postulated by G.L. Flett and P.L. Hewitt (2002), distinguishing four models of the family influence:

2. Social Learning Models – rely on the assumption that children imitate their perfectionistic parents. The imitation is spontaneous. Children observe their parents in various activities and adopt the presented behavioural patterns.
3. Social Reaction Model – is based on the premise that children become perfectionists when growing up in a stringent environment sometimes having
even extreme forms such as physical and psychological abuse, upbringing without love, exposure to shame and a chaotic family environment. In such children, perfectionism is a result of coping strategies. Their thinking is adjusted to the idea: “I am perfect; no-one will hurt me”.

4. **Anxious Rearing Model** – parents are concerned about not being perfect and they are concerned about their children in the same way, using the over-protecting parenting style in the effort to prevent imperfection. **Over-protective parenting** (over-guidance) is a type of indulgent parenting. It is a type of extremely pedocentric parenting, included in inappropriate types. Over-protective parenting is typical of excessive child care. The child is allowed everything. Parents strive to give their child the most possible stimuli for his/her development from his/her birth. In the effort to protect their child they create an artificial (greenhouse) environment for him/her. They remove obstacles in the child’s life and solve his/her problems for him/her. That is the reason why over-protected children lack ordinary social experience of how to deal with conflicts. A research study (in: Kiel, Maack, 2012) of elementary school children found that anxious mothers with high neuroticism had a tendency toward over-protective parenting and their children displayed more shyness and internalizing behaviour than other children.

Based on the theoretical analysis of the issue, our research goal was defined to determine relationships between adolescents’ perfectionism and their parents’ parenting.

**Research Sample**

The research sample was obtained by targeted and convenience sampling and comprised 122 secondary school students aged 16 to 19 (average age 17.37), including 44 boys and 78 girls. The research was carried out at the Secondary Vocational School in Banská Bystrica and the Pedagogical and Social Academy in Turčianske Teplice. The sampling of adolescent youth was based on the assumption that the adolescents still lived with their families and were able to assess their parents’ behaviour in relation to themselves.
Methods

Multidimensional Perfectionism Scale (FMPS)

The Frost Multidimensional Perfectionism Scale (Frost et al., 1990) consists of 35 items, responses are recorded on a 5-point Likert scale, ranging from strongly agree to strongly disagree. The MPS consists of six subscales, including:

Concern over Mistakes – CM. This dimension is conceptualized as negative reactions to one’s own mistakes and a tendency to perceive such mistakes as total failure.

Personal Standards – PS is a dimension conceptualized as a tendency to set high goals for oneself and evaluate oneself on the basis of their achievement. The dimension Parental Expectations – PE is conceptualized as a tendency to believe that parents over-criticize their children. The dimension Doubts about Actions – DA is conceptualized as a tendency to feel that the set goals cannot be achieved. The dimension Organization – O is conceptualized as an emphasis on order and structure in organizing one’s own things.

In our research, the method recommended by Khawaja and Armstrong (2005) was used, where better reliability is achieved when the CM and DA, PE and PC items are combined. Organization and Personal Standards remain independent. In our research, reliability of the MPS and internal consistency of its individual items showed acceptable values of Cronbach’s alpha. CMDA (12 items): α=0.77; PS (7 items): α=0.74; PEPC (9 items): α=0.76; O (6 items): α=0.80.

PCI – Perfectionism Cognitions Inventory (Flett, Hewitt, Blankstein, Gray)

The authors of the Perfectionism Cognitions Inventory are Flett, Hewitt, Blankstein, Gray (1998) and it consists of 25 items aimed to determine the frequency of perfectionistic cognitions, increased striving and social comparison in non-clinical population. The PCI is a one-dimensional inventory of perfectionistic cognitions. Items are scored on a 5-point scale, from completely disagree (0 points) to completely agree (4 points). The scale is internally consistent, confirmed by our research, as well, α = 0.92. According to the authors, the validity of the PCI is comparable with the Frost Multidimensional Perfectionism Scale.

ADOR – Parental Behaviour and Attitudes Questionnaire

The standardized questionnaire of parental behaviour and attitudes for adolescents, ADOR (Matějček and Říčan, 1983), allows for obtaining information about how a child perceives parental attitudes towards parenting and parenting related behaviour towards him/herself. The method is derived from Schaefer’s CRPBI
(Children’s Report of Parental Behavior Inventory) of 1965. Using correlation analyses, the Czech modifiers (Matějček and Říčan, 1983) arrived at the following factors determined in parenting styles:

1. Positive Interest vs. Hostility (POZ – HOS)
2. Directiveness vs. Autonomy (DIR – AUT)
3. Inconsistency (NED)

The questionnaire consists of 50 scaled items focused on the mother’s influence and 50 identical items focused on the father’s influence. Although usual methods of the questionnaire evaluation include combining opposing poles into one factor, in our research we decided to work with the raw score for each factor separately. Reliability of the ADOR scale and internal consistence of its individual items show acceptable values of Cronbach’s alpha (from 0.6 to 0.8).

**Research results**

Based on the results of variables tested for normal distribution, non-parametric statistical procedures were used (Table 1).

<table>
<thead>
<tr>
<th></th>
<th>Poz M</th>
<th>Dir M</th>
<th>Hos M</th>
<th>Aut M</th>
<th>Ned M</th>
<th>Poz F</th>
<th>Dir F</th>
<th>Hos F</th>
<th>Aut F</th>
<th>Ned F</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-S test</td>
<td>1.91</td>
<td>1.06</td>
<td>1.42</td>
<td>0.77</td>
<td>1.39</td>
<td>1.14</td>
<td>0.69</td>
<td>1.72</td>
<td>0.65</td>
<td>0.91</td>
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<tr>
<td>p-value</td>
<td>0.001</td>
<td>0.204</td>
<td>0.034</td>
<td>0.592</td>
<td>0.04w1</td>
<td>0.148</td>
<td>0.724</td>
<td>0.005</td>
<td>0.793</td>
<td>0.380</td>
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<td>CMDA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K-S test</td>
<td>0.90</td>
<td>0.88</td>
<td>1.02</td>
<td>0.83</td>
<td>0.72</td>
<td></td>
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<tr>
<td>p-value</td>
<td>0.393</td>
<td>0.418</td>
<td>0.244</td>
<td>0.482</td>
<td>0.663</td>
<td></td>
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</tr>
</tbody>
</table>


The results in Table 2 allow us to state that parenting of fathers and mothers in our sample does not differ fundamentally.
Table 2. Descriptive indicators of ADOR variables for the whole sample

<table>
<thead>
<tr>
<th></th>
<th>M_Poz</th>
<th>M_Dir</th>
<th>M_Hos</th>
<th>M_Aut</th>
<th>M_Ned</th>
<th>F_Poz</th>
<th>F_Dir</th>
<th>F_Hos</th>
<th>F_Aut</th>
<th>F_Ned</th>
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<tbody>
<tr>
<td>Mean</td>
<td>14.68</td>
<td>10.35</td>
<td>5.73</td>
<td>9.96</td>
<td>7.25</td>
<td>12.90</td>
<td>9.39</td>
<td>5.62</td>
<td>10.18</td>
<td>7.68</td>
</tr>
<tr>
<td>Median</td>
<td>16.00</td>
<td>11.00</td>
<td>5.00</td>
<td>10.00</td>
<td>7.00</td>
<td>13.00</td>
<td>10.00</td>
<td>4.00</td>
<td>10.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Mode</td>
<td>17</td>
<td>11</td>
<td>2</td>
<td>10</td>
<td>8</td>
<td>12</td>
<td>10</td>
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<td>12</td>
<td>6</td>
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<td>Stand. deviation</td>
<td>4.82</td>
<td>3.56</td>
<td>4.02</td>
<td>4.13</td>
<td>4.24</td>
<td>5.19</td>
<td>4.48</td>
<td>4.84</td>
<td>4.77</td>
<td>4.90</td>
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<tr>
<td>Variance</td>
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<td>12.70</td>
<td>16.23</td>
<td>17.13</td>
<td>17.98</td>
<td>27.01</td>
<td>20.12</td>
<td>23.49</td>
<td>22.79</td>
<td>24.03</td>
</tr>
</tbody>
</table>

Table 3. Descriptive indicators of MPS and PCI variables for the whole sample

<table>
<thead>
<tr>
<th></th>
<th>CMDA</th>
<th>PEPC</th>
<th>ORG</th>
<th>PS</th>
<th>HS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>32.35</td>
<td>22.52</td>
<td>18.62</td>
<td>18.98</td>
<td>64.37</td>
</tr>
<tr>
<td>Median</td>
<td>31.50</td>
<td>22.00</td>
<td>19.00</td>
<td>18.50</td>
<td>66.00</td>
</tr>
<tr>
<td>Mode</td>
<td>30</td>
<td>18</td>
<td>21</td>
<td>18</td>
<td>50</td>
</tr>
<tr>
<td>Stand. deviation</td>
<td>8.09</td>
<td>6.25</td>
<td>5.24</td>
<td>5.13</td>
<td>14.98</td>
</tr>
<tr>
<td>Variance</td>
<td>65.58</td>
<td>39.16</td>
<td>27.52</td>
<td>26.34</td>
<td>224.46</td>
</tr>
</tbody>
</table>

Based on the results presented in Table 4, there is a weak, statistically significant relationship between Poz (Positive Interest) and CMDA (Concern over Mistakes and Doubts about Actions). There is an equally weak, statistically significant

Table 4. Correlation coefficients (Spearman’s test) of perfectionism dimensions and parental behaviour and attitudes factors for fathers (N = 122)

<table>
<thead>
<tr>
<th></th>
<th>F_Poz</th>
<th>F_Dir</th>
<th>F_Hos</th>
<th>F_Aut</th>
<th>F_Ned</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>p-val</td>
<td>ρ</td>
<td>p-val</td>
<td>ρ</td>
<td>p-val</td>
</tr>
<tr>
<td>CMDA</td>
<td>-0.25**</td>
<td>0.005</td>
<td>0.095</td>
<td>0.297</td>
<td>0.21*</td>
</tr>
<tr>
<td>PEPC</td>
<td>-0.29**</td>
<td>0.001</td>
<td>0.28**</td>
<td>0.002</td>
<td>0.43**</td>
</tr>
<tr>
<td>ORG</td>
<td>0.08</td>
<td>0.347</td>
<td>-0.19*</td>
<td>0.030</td>
<td>-0.13</td>
</tr>
<tr>
<td>PS</td>
<td>0.04</td>
<td>0.618</td>
<td>-0.10</td>
<td>0.263</td>
<td>-0.07</td>
</tr>
<tr>
<td>HS</td>
<td>-0.04</td>
<td>0.600</td>
<td>-0.01</td>
<td>0.863</td>
<td>0.13</td>
</tr>
</tbody>
</table>

relationship between Dir (Directiveness) and PEPC (Parental Expectations and Parental Criticism). Another, moderate relationship appears between Hos (Hostility) and PEPC. Aut (Autonomy) and PEPC show a weak negative correlation. There is a weak, statistically significant relationship between the father’s Inconsistency NED and CMDA (Concern over Mistakes and Doubts about Actions). The father’s Inconsistency NED and PEPC (Parental Expectations and Parental Criticism) show a strong and negative relationship. However, the results allows for stating that the variability of the perfectionism dimensions can be explained by the variability of the above father parenting factors only in 6% (CDMA and Positivity, CMDA and Inconsistency) and no more than 20% (father’s PEPC and Hostility).

Based on Table 5, there is a weak, statistically significant relationship between the mother’s Poz (Positive Interest) and PS (Personal Standards). A moderate, statistically significant relationship appears between the mother’s Positivity and ORG (Organization). There is a moderate, statistically significant relationship between the mother’s Dir (Directiveness) and PEPC (Parental Expectations and Parental Criticism). A moderate relationship appears between Hos (Hostility) and PEPC. There is a moderate, statistically significant relationship between the mother’s Inconsistency and CMDA (Concern over Mistakes and Doubts about Actions). The mother’s Inconsistency NED and PEPC (Parental Expectations and Parental Criticism) show a moderate and negative relationship. However, the results allow for stating that the variability of the perfectionism dimensions can be explained by the variability of the mother’s parenting factors only in 4% (mother’s Positivity and Personal Standards) and no more than 20% (mother’s PEPC and Hostility).

Table 5. Correlation coefficients (Spearman’s test) of perfectionism dimensions and parental behaviour and attitudes factors for mothers (N = 122)

<table>
<thead>
<tr>
<th></th>
<th>M_Poz</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M_Dir</td>
<td></td>
<td></td>
<td>M_Hos</td>
<td></td>
<td></td>
<td>M_Ned</td>
</tr>
<tr>
<td>P</td>
<td>p-val</td>
<td>ρ</td>
<td>p-val</td>
<td>ρ</td>
<td>p-val</td>
<td>ρ</td>
<td>p-val</td>
</tr>
<tr>
<td>CMDA</td>
<td>-0.12</td>
<td>0.167</td>
<td>-0.03</td>
<td>0.707</td>
<td>0.25**</td>
<td>0.004</td>
<td>0.06</td>
</tr>
<tr>
<td>PEPC</td>
<td>-0.18*</td>
<td>0.046</td>
<td>0.32**</td>
<td>0.000</td>
<td>0.43**</td>
<td>0.000</td>
<td>-0.13</td>
</tr>
<tr>
<td>ORG</td>
<td>0.35**</td>
<td>0.000</td>
<td>-0.16</td>
<td>0.066</td>
<td>-0.13</td>
<td>0.146</td>
<td>0.02</td>
</tr>
<tr>
<td>PS</td>
<td>0.22*</td>
<td>0.011</td>
<td>-0.07</td>
<td>0.424</td>
<td>-0.08</td>
<td>0.356</td>
<td>0.06</td>
</tr>
<tr>
<td>HS</td>
<td>0.11</td>
<td>0.223</td>
<td>0.08</td>
<td>0.362</td>
<td>0.13</td>
<td>0.143</td>
<td>-0.01</td>
</tr>
</tbody>
</table>

Discussion

The aim of our research was to determine correlations between adolescents’ perfectionism and their parents’ parenting. Our findings confirmed that some dimensions of perfectionism according to Frost’s conception correlate with parenting styles, and it was also found that there are some differences in the mother’s and father’s parenting and its relationship to the perfectionism dimensions measured. The method itself includes the Parental Expectations and Parental Criticism dimension, which shows significant moderate relationships with all the factors of parental behaviour and attitudes in fathers and three dimensions (Directiveness, Hostility and Inconsistency) in mothers. The perfectionism dimensions Concern over Mistakes and Doubts about Actions showed a negative significant relationship with the father’s Positivity. The findings suggest that a lack of the father’s positive interest in his child influences to some extent his/her increased Concern over Mistakes and Doubts about Actions. Such a correlation was not confirmed in mothers. Concern over Mistakes and Doubts about Actions showed a weak significant relationship with Hostility in both fathers and mothers and also a moderate significant relationship with the father’s and mother’s Inconsistency. Our research findings point to the fact that hostile parents with an inconsistent parenting style increase Doubts about Actions in their children and also increase their Concern over Mistakes. The findings indicate possible validity of the social reaction model (Flett, Hewitt, 2002).

Our findings also confirm the findings by B. Soenens and A.J. Elliot et al. (2005), whose research study investigated whether parental perfectionism is a predictor of parental psychological control in girls. The study confirmed that parental perfectionism significantly predicted parental psychological control more in fathers than in mothers. In another study, involving a hundred undergraduates, G.L. Flett, P.L. Hewitt and A. Singer (1995) examined the association between dimensions of perfectionism and parenting styles. Their results showed that parental authority styles may contribute to the development of perfectionism. Based on the research, G.L. Flett asserts that perfectionism is a feature parents can pass down to their children. Similarly, K.Y. Kawamura, R.O. Frost and M.G. Harmatz (2002) confirm that an excessively authoritarian parenting style influences mainly the development of maladaptive perfectionism in children of such parents.

The Organization dimension showed no relationship with the father’s parenting style. In the mother’s parenting, a moderate relationship appeared between Organization and Positive Interest. Organization reflects an emphasis on order and structure in organizing one’s own things, which is mostly a parenting domain of mothers, who require their children to maintain order and schedule. A difference
in parental styles in relation to the dimensions of perfectionism appeared also in
the relationship between the mother’s Positive Interest and Personal Standards,
where a significant, weak relationship was confirmed between the variables.
There was no such correlation in fathers at all. It follows from our research that
the mother’s Positive Interest in her child influences his/her setting of Personal
Standards. It is possible that our finding points to the social expectations model,
thus the mother’s interest in her child acts upon the child as a motive to set higher
standards for him/herself, since the child can perceive parental expectations
regarding his/her performance.

Our research examined also the extent of perfectionistic cognitions presenting
the cognitive aspect of perfectionism. However, this did not appear as relevant
in relation to the variables of parents’ parenting attitudes and behaviour (except
Inconsistency, but there was only a weak significant relationship). This finding may
lead to the assumption that parental parenting influences more substantially the
emotional and conative aspects of perfectionism, while not affecting the cognitive
aspect so much. This assumption should be further verified.

Our research study focused on perceived parenting from the perspective of
adolescents. We have no information whether parents of perfectionistic children
are perfectionists themselves. Some research studies, such as, e.g., the research by
M.A. Besharad, K. Azzizi and H. Poursharifib (2011), confirm that the existence
of perfectionism in parents has a significant influence on the parenting style used
by them.

Conclusion

Perfectionism, mainly its maladaptive form, has a serious impact on an individ-
ual’s life, whether at school, work or in private. Perfectionism of youth need not
always manifest itself precisely in school performance. Maladaptive perfectionism
may manifest itself in adolescents also in other areas, such as, e.g., excessive focus
on looks, presentation on social networks, etc. A frequent and significant source
of perfectionism includes mainly family, especially perfectionistic parents as
social learning models, but also their parenting style. Our research pointed also
to differences in connections between the mother’s and father’s influence in the
development of perfectionism in children. Hostile and inconsistent parenting
turns out to be harmful. On the other hand, parents’ positive interest is rather
connected with adaptive aspects of perfectionism. However, our research findings
cannot be generalized, they are limited by the size and sampling.
References
Abstract
The Internet and cyber-space create a platform where a new form has emerged, i.e., bullying, so far occurring mainly within school premises. The study presents results of empirical research conducted at selected elementary and secondary schools in Slovakia in 2017. The aim of the study was to elucidate the most frequent current cyber-bullying platforms and occurrence of individual forms of cyber-bullying with regard to cyber-victims. The research sample consisted of 1004 respondents, aged 10–20 (AM 14.9). Empirical data were collected using the method of questioning in the form of a written questionnaire. We focused on cyber-bullies, electronic platforms and identification of cyber-bullying forms from the point of view of cyber-victims and pupils’ gender and age. It was found out that 24.50% of pupils reported to have been cyber-victimized, girls more often than boys. The most frequent form of cyber-bullying from the point of view of cyber-victims was abusive or offensive language on the Internet and spreading rumours on the Internet.

Keywords: cyber-bullying, media, pupils, victim, school
Introduction

Contemporary children are born into the digital world, becoming generations growing up with technologies from their early age. Life of such “digital children” is made of real life intertwining with virtual life “transmitted” within the cyber-space. The cyber-space is created by individual information-communication media offering almost unlimited opportunities for people through various platforms of the virtual world.

S. Hinduja and J.W. Patchin (2014) define cyber-bullying as wilful and repeated harm inflicted through the use of computers, mobile phones, and other electronic devices. A more comprehensive characteristic of cyber-bullying is given by K. Hollá (2016, p. 15), according to whom cyber-bullying is “aggressive behaviour including harassment, threats, stalking, humiliation and other negative behaviour of a child or adolescent towards a victim or victims, through repeated attacks via computer, mobile phone, and other electronic devices, the content of which causes emotional injury.” In doing so, the cyber-bully uses various services, tools and applications: text messages, telephone calls, email, chat-rooms, blogs, discussion forums, social networking sites and instant messengers such as Messenger, Instagram, Anapchat, WhatsApp, Viber, Skype, etc.

The advantage of cyber-bullies over traditional bullies is that the harm aimed at their victim may be multiplied. In traditional bullying, the bully attacks his/her victim, e.g., in the classroom, may be joined by one of his/her school mates, however, it is only a single attack at a given time and place. Owing to the net (mobile or Internet one), the cyber-bully can involve a great number of other people in the attack on the victim and spreading of the attack becomes uncontrollable. Repetition of attacks is thus replaced by public access to the electronic content which is available at all times.

In traditional bullying, the imbalance between the bully and the victim is defined explicitly and lies in the physical and psychological weakness demonstrable visually (bully is higher, heavier) or by popularity – the bully’s popularity/victim’s unpopularity. The above forms are not clear in cyber-bullying – physical strength is not necessary to perpetrate cyber-bullying. Here, the cyber-bully’s superiority over the victim is created by the cyber-bully’s technical ability with information-communication technologies and anonymity (R. Slonje, P.K. Smith, A. Frisén, 2013).

The issue of cyber-bullying has been paid attention to at the theoretical-empirical level for several years. In Slovakia and abroad, cyber-bullying has been dealt with in particular by K. Hollá (2016, 2017), K. Hollá, L. Fenyvesiová, J.

Cyber-bullying takes place on various platforms and through various routes, which the existence of various cyber-bullying forms is connected with. N. Willard (2007) worked out a comprehensive classification of attacks, including: flaming; cyber-harassment; denigration, slandering; impersonation, masquerading; outing; trickery; exclusion from an online group; cyber-stalking; direct threats and distressing material (cyber-threats).

The cyber-bullying forms are not final and new ones keep on emerging. There are also other forms closely related to cyber-bullying and several authors include them in it (e.g., K. Kopecký, 2015; S. Livingstone, 2015; S. Slonje, P.K. Smith, A. Frisén, 2013; R.M. Kowalski, S.P. Limber, P.W. Agatston, 2008, etc.). They are: sexting; happy slapping; hating on the Internet; video-clip bullying; cyber-grooming; trolling; griefing; and bombing.

Identification of cyber-victim types by A. Černá (2013) is based on the basic typology of victims of traditional bullying:

- **Passive victims:** individuals, who are timid, shy, sensitive, psychologically and physically less attractive and proficient, with lower self-confidence and worse social skills; such a victim avoids aggressive behaviour;
- **Provocative victims:** individuals, who may be hyperactive, impulsive, aggressive, causing irritation, provoke those around them; unpopular in their group.

Cyber-victims are most frequently individuals revealing more personal information about themselves on the Internet, thus enabling cyber-bullies to contact them repeatedly and abuse the shared information against them (A. Černá, 2013).

**Research sample characteristics**

The research sample consisted of 1004 elementary (394) and secondary (610) school pupils, aged 10–20.

<table>
<thead>
<tr>
<th>School Type</th>
<th>N</th>
<th>%</th>
<th>N</th>
<th>%</th>
<th>n</th>
<th>%</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary school</td>
<td>394</td>
<td>39.24</td>
<td>210</td>
<td>20.92</td>
<td>400</td>
<td>39.84</td>
<td>1004</td>
<td>100</td>
</tr>
<tr>
<td>Grammar school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocational school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Distribution of respondents by school type
Table 2. Distribution of respondents by age and gender

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>Gender</th>
<th>Boys</th>
<th>%</th>
<th>Girls</th>
<th>%</th>
<th>TOTAL</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>n</td>
<td>17</td>
<td>37.77</td>
<td>28</td>
<td>62.23</td>
<td>45</td>
<td>4.48</td>
</tr>
<tr>
<td>11</td>
<td>n</td>
<td>57</td>
<td>50.89</td>
<td>55</td>
<td>49.11</td>
<td>112</td>
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<td>12</td>
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<td>30</td>
<td>39.47</td>
<td>46</td>
<td>60.53</td>
<td>76</td>
<td>7.57</td>
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<tr>
<td>13</td>
<td>n</td>
<td>55</td>
<td>51.87</td>
<td>51</td>
<td>48.11</td>
<td>106</td>
<td>10.56</td>
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<td>14</td>
<td>n</td>
<td>38</td>
<td>50.67</td>
<td>37</td>
<td>49.33</td>
<td>75</td>
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<td>15</td>
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<td>48</td>
<td>54.55</td>
<td>40</td>
<td>45.45</td>
<td>88</td>
<td>8.76</td>
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<td>n</td>
<td>72</td>
<td>42.11</td>
<td>99</td>
<td>57.89</td>
<td>171</td>
<td>17.03</td>
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<tr>
<td>17</td>
<td>n</td>
<td>60</td>
<td>38.96</td>
<td>94</td>
<td>61.04</td>
<td>154</td>
<td>15.34</td>
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<td>18</td>
<td>n</td>
<td>54</td>
<td>48.65</td>
<td>57</td>
<td>51.35</td>
<td>111</td>
<td>11.06</td>
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<tr>
<td>19</td>
<td>n</td>
<td>32</td>
<td>57.14</td>
<td>24</td>
<td>42.86</td>
<td>56</td>
<td>5.58</td>
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<td>20</td>
<td>n</td>
<td>8</td>
<td>80</td>
<td>2</td>
<td>20</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>471</td>
<td>46.92</td>
<td>533</td>
<td>53.08</td>
<td>1004</td>
<td>100</td>
</tr>
</tbody>
</table>

Research methods

The chosen research method was quantitative. Empirical data were collected by means of a questionnaire consisting of scaled questions the pupils were to rate on the scale 0 – 4, where 0 = never, 1 = once, 2 = sometimes, 3 = often, 4 = every day, and of questions consisting of statements the pupils could answer to yes or no. The questionnaire was a combination of the modified Cyber-bullying and Online Aggression Survey Instrument by S. Hinduja and J.W. Patchin (2010), tested on a similar age structure of pupils in the USA, as well as in Slovakia, in the research by K. Hollá (2016). That was the reason why our research was carried out on pupils of elementary and secondary schools. The questionnaire was added items of our own design because the standardized questionnaire did not include all social networks and mobile phone applications currently available to their users for installation.

The goal of the research was to map and analyse cyber-bullying in elementary and secondary school pupils. The goal was split into the following objectives: determine the occurrence of cyber-victims among elementary and secondary school pupils; determine cyber-bullying forms and perpetrators by pupils’ gender; determine the occurrence of cyber-bullying in online environments and on cyberspace platforms.
Results of empirical findings

Cyber-bullying and risks related to this phenomenon are current problems on platforms such as social networks and various electronic media. Our research focused on cyber-bullies, electronic platforms, and identification of cyber-bullying forms from the point of view of cyber-victims with regard to pupils’ gender and age.

The percentage of cyber-bullying on individual platforms is presented in Graph G1.

Graph 1. Percentage of cyber-bullying in online environments and on cyber-space platforms from the point of view of elementary and secondary school pupils

The pupils most frequently witnessed cyber-bullying on the social network Facebook, the same was reported by 50.30% of the pupils. Research results also showed 33.30% of the pupils reporting to have witnessed cyber-bullying via application Messenger. The application Messenger is an instant messenger that can be installed in smartphones or tablets and linked to the social network Facebook. Another platform on which the pupils observed cyber-bullying was the social network Instagram (27.00%) and 26.10% of the pupils reported cyber-bullying on YouTube.
Descriptive indicators of cyber-bullying perpetrators by gender are presented in Table 3.

**Table 3. Cyber-bullying perpetrators by pupils’ gender**

<table>
<thead>
<tr>
<th></th>
<th>Witness</th>
<th>Cyber-victim</th>
<th>Cyber-bully</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Boys</strong></td>
<td>AM</td>
<td>1.02</td>
<td>0.36</td>
</tr>
<tr>
<td>N</td>
<td>249</td>
<td>107</td>
<td>61</td>
</tr>
<tr>
<td>%</td>
<td>52.80</td>
<td>22.70</td>
<td>12.90</td>
</tr>
<tr>
<td><strong>Girls</strong></td>
<td>AM</td>
<td>0.85</td>
<td>0.41</td>
</tr>
<tr>
<td>N</td>
<td>267</td>
<td>139</td>
<td>60</td>
</tr>
<tr>
<td>%</td>
<td>50.10</td>
<td>26.08</td>
<td>11.20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>AM</td>
<td>0.93</td>
<td>0.38</td>
</tr>
<tr>
<td>N</td>
<td>516</td>
<td>246</td>
<td>177</td>
</tr>
<tr>
<td>%</td>
<td>63.10</td>
<td>24.50</td>
<td>17.70</td>
</tr>
</tbody>
</table>

516 pupils (63.10%) witnessed cyber-bullying in their lives. A total of 246 pupils (24.50%) were cyber-victimized, out of whom 7 (0.70%) on a daily basis. Based on the empirical findings, the direct position of a cyber-bully was admitted by 177 respondents (17.70%), out of whom 11 (11.10%) pupils cyber-bullied others daily.

Next, individual cyber-bullying forms were checked for statistically significant differences. Results are presented in Table 4. The table presents arithmetic means, standard deviations, minimums and maximums of individual cyber-bullying forms by the pupils’ gender.

**Table 4. Cyber-bullying forms by pupils’ gender**

<table>
<thead>
<tr>
<th></th>
<th>Abusive language on the Internet</th>
<th>Posting a mean/hurtful photograph/picture</th>
<th>Posting a mean/hurtful video on the Internet</th>
<th>Creating a mean/hurtful web-page</th>
<th>Spreading rumours on the Internet</th>
<th>Threats through text messages</th>
<th>Threats through the Internet</th>
<th>Abused/fake profile</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Boys</strong></td>
<td>AM 0.41</td>
<td>0.14</td>
<td>0.07</td>
<td>0.03</td>
<td>0.28</td>
<td>0.07</td>
<td>0.20</td>
<td>0.16</td>
</tr>
<tr>
<td>SD</td>
<td>0.845</td>
<td>0.497</td>
<td>0.325</td>
<td>0.188</td>
<td>0.730</td>
<td>0.419</td>
<td>0.607</td>
<td>0.540</td>
</tr>
<tr>
<td>Min.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Max.</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>N</td>
<td>471</td>
<td>471</td>
<td>471</td>
<td>471</td>
<td>471</td>
<td>471</td>
<td>471</td>
<td>471</td>
</tr>
</tbody>
</table>
Abusive language on the Internet
Posting a mean or hurtful photograph/picture
Posting a mean or hurtful video on the Internet
Creating a mean or hurtful web-page
Spreading rumours on the Internet
Threats through text messages
Threats through the Internet
Abused/fake profile

Results of the Mann-Whitney test allow us to state that there is a statistically significant difference in gender in forms of cyber-bullying, posting a mean or hurtful photograph/picture, spreading rumours (denigration), threats through text messages (direct threats and distressing material). These three cases more frequently involved the girls as victims of the above cyber-bullying forms. A statistically significant difference in favour of the boys was confirmed in the form threats through the Internet, which can be included in direct threats and distressing material.

Research findings presented in Table 5 make it obvious that the pupils were cyber-victimized most frequently by abusive or offensive language on the Internet and rumours spread on the Internet. In terms of percentages, it was 24.20% of abusive or offensive language on the Internet and 18.76% of rumours spread on the Internet. This form also confirmed a statistically significant difference in gender. In both cases, the victims of the above cyber-bullying forms were more frequently the girls.

Table 5 presents statistically significant differences for cyber-bullying forms by the Kruskal-Wallis test.
Table 5. Inference indicators of statistically significant differences for cyber-bullying forms

<table>
<thead>
<tr>
<th></th>
<th>Chi-square</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abusive language on the Internet</td>
<td>13.975</td>
<td>0.174</td>
</tr>
<tr>
<td>Posting a mean or hurtful photograph/picture on the Internet</td>
<td>18.137</td>
<td>0.053</td>
</tr>
<tr>
<td>Posting a mean or hurtful video on the Internet</td>
<td>17.137</td>
<td>0.071</td>
</tr>
<tr>
<td>Creating a mean or hurtful web-page</td>
<td>24.834</td>
<td>0.006</td>
</tr>
<tr>
<td>Spreading rumours on the Internet</td>
<td>28.576</td>
<td>0.001</td>
</tr>
<tr>
<td>Threats through text messages</td>
<td>15.253</td>
<td>0.123</td>
</tr>
<tr>
<td>Threats through the Internet</td>
<td>43.908</td>
<td>0.000</td>
</tr>
<tr>
<td>Abused/Fake profile</td>
<td>14.948</td>
<td>0.134</td>
</tr>
</tbody>
</table>

From the point of view of age, a statistically significant difference was confirmed in three cyber-bullying forms, i.e., posting a mean or hurtful photograph/picture, creating a mean or hurtful web-page, which can be included in denigration, flaming and cyber-harassment of the cyber-victim, and threats on the Internet (direct threats and distressing material). The cyber-bullying forms showed a statistically significant difference concerning the pupils aged 18–20. Table 6 presents a mean rank of selected cyber-bullying forms showing statistically significant differences by the pupils’ age.

Table 6. Mean rank of selected cyber-bullying forms by age

<table>
<thead>
<tr>
<th>Age</th>
<th>Poster a mean or hurtful photograph/picture</th>
<th>Creating a mean or hurtful web-page</th>
<th>Threats through the Internet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean rank AM SD</td>
<td>Mean rank AM SD</td>
<td>Mean rank AM SD</td>
</tr>
<tr>
<td>10</td>
<td>463.56  0.04 0.208</td>
<td>491.00  0.00 0.000</td>
<td>464.27  0.02 0.149</td>
</tr>
<tr>
<td>11</td>
<td>495.54  0.14 0.462</td>
<td>495.47  0.01 0.094</td>
<td>476.04  0.07 0.373</td>
</tr>
<tr>
<td>12</td>
<td>469.66  0.09 0.356</td>
<td>504.17  0.03 0.161</td>
<td>501.18  0.21 0.771</td>
</tr>
<tr>
<td>13</td>
<td>483.18  0.08 0.280</td>
<td>495.72  0.01 0.097</td>
<td>500.98  0.14 0.487</td>
</tr>
<tr>
<td>14</td>
<td>475.33  0.11 0.509</td>
<td>491.00  0.00 0.000</td>
<td>494.41  0.15 0.562</td>
</tr>
<tr>
<td>15</td>
<td>498.58  0.16 0.544</td>
<td>496.69  0.01 0.107</td>
<td>464.51  0.02 0.150</td>
</tr>
<tr>
<td>16</td>
<td>510.66  0.23 0.706</td>
<td>523.27  0.08 0.326</td>
<td>494.49  0.13 0.515</td>
</tr>
<tr>
<td>17</td>
<td>525.73  0.21 0.507</td>
<td>497.57  0.02 0.180</td>
<td>514.78  0.16 0.478</td>
</tr>
<tr>
<td>18</td>
<td>536.64  0.27 0.673</td>
<td>495.61  0.02 0.190</td>
<td>524.89  0.18 0.471</td>
</tr>
<tr>
<td>19</td>
<td>516.11  0.23 0.603</td>
<td>517.81  0.05 0.227</td>
<td>607.01  0.46 0.785</td>
</tr>
<tr>
<td>20</td>
<td>495.90  0.20 0.632</td>
<td>541.05  0.10 0.316</td>
<td>506.25  0.20 0.972</td>
</tr>
</tbody>
</table>
Discussion

Cyber-bullying and its various forms in online environments and platforms created by modern technologies undoubtedly affect elementary and secondary school pupils coming into contact with this socio-pathological phenomenon from various positions.

The popularity of social networks with young people was confirmed also by a survey conducted by a British institution, the Royal Society for Public Health in Great Britain, according to which up to 91% of 16 – 24 year-olds used the Internet for social networks. Survey results also showed that seven in ten young people had experienced cyber-bullying on social networks, twice as often having been bullied on Facebook than on any other social network (S. Cramer, B. Inkster, 2017). This finding was confirmed also by our research results, showing the highest occurrence of cyber-bullying from the point of view of the pupils on the frequently most used social networks, i.e., Facebook, Messenger, Instagram and YouTube.

Facebook allows for sharing privately among friends as well as public statuses, photographs and videos that may have the character of a direct or indirect attack on a cyber-victim. The attack on a victim may be strengthened and supported by other Facebook users forwarding ridiculing and embarrassing contents, thus multiplying indirect attacks on the cyber-victim. Facebook allows for forming groups that may be directed against a cyber-victim; similarly, it makes it possible to create private pages against a cyber-victim. However, formation of the groups creates another opportunity for “collective cyber-aggression” when the cyber-victim may be excluded, e.g., from a group formed by the class for sharing common school experiences, experiences from school trips, etc. In addition, there is a possibility to publicly comment on the cyber-victim’s contributions, thus potential trolling, flaming or hating. In their study, Ł. Tomczyk and K. Kopecký (2016) dealt with a comparative analysis of young people’s risky behaviour in the Internet environment in Poland and the Czech Republic. In both countries, Facebook is the dominant social network as a natural environment for sharing information about a place of residence, relationship status, maintaining relationships and establishing new network relations, etc. Their research results showed that young people had a similar level of risky behaviour in the environment of the studied social networks in both countries. Their research findings also showed that 20% of the young people formed a risk group by posting intimate photographs. Pictures of intimate or confidential content may be abused against their senders later.

Within her empirical research, K. Hollá (2016) found out that with every year, a respondent’s chance to belong to the group of cyber-bullies was 0.761 times
lower than the chance to belong to the group of uninvolved pupils, and 0.97 times lower to belong to the group of cyber-victims than to the group of uninvolved pupils. This showed that the chance to belong to the groups of cyber-victims and cyber-bullies decreased with increasing age. When compared with our empirical findings of cyber-bullying related to age, the results differ, ours confirming that cyber-bullying occurred among pupils more frequently with increasing age. We found out that the cyber-bullying forms with statistically significant differences concerned pupils aged 18 – 20. According to the research by K. Hollá, L. Fenyevesiová and J. Hanuliaková (2017), the most frequent forms were posting a mean or hurtful video, creating a mean web-page and threats through text messages, similarly as in our empirical research.

S. Hinduja and J.W. Patchin (2016) found in their research that 33.80% of the respondents interviewed had been cyber-victimized in their lives, which is by 9.30% more when compared with our findings. According to their research, cyber-victims had most frequently experienced encounters with mean or hurtful comments on their person on the Internet (22.50%) and rumours spread on the Internet (20.10). In terms of gender, girls were more likely to have been spread rumours about, while boys said to have been threatened to be hurt online.

Our research was conducted within the following limitations:

• The research did not map the occurrence of cyber-bullying in all regions of the Slovak Republic;
• The research did not analyse personal characteristics of cyber-victims;
• The research did not examine reasons why pupils have become cyber-victims.

The methodological limitations of the research may be tackled by further research revising and expanding the research results.

**Conclusion**

Cyber-bullying is a serious educational and social problem accompanying the development of information-communication technologies. Victims of cyber-bullying are more likely to experience low academic performance, depression, anxiety, self-harm, feelings of loneliness, and changes in sleeping and eating patterns, all of which could alter the course of a young person’s life, as they undertake important exams at school, and develop personally and socially (S. Cramer, B. Inkster, 2017). In this respect it is important to pay attention to its prevention, as well as solution in the school environment, as pointed out by several professionals, e.g.,
M. Dulovics (2014), S. Juszczyk (2014), Ø. Samnoen – A.M.P. Matos – A. Seixas (2014), I. Emmerová (2015, 2016), K. Hollá (2016), L. Pašková (2014), etc. In addition, prevention of risks related to the use of modern information-communication technologies is referred to also in two priorities of the “Strategy of Prevention of Criminal and Other Antisocial Activities in the Slovak Republic for Years 2016–2020” (Stratégia prevencie kriminality a inej protispoločenskej činnosti v SR na roky 2016 až 2020.). The purpose is not to completely restrict or forbid children and youth the use of information-communication technologies because it is not possible in the current digital society and Generation Z growing from it. Within primary prevention, a social pedagogue influences a pupil in respect of a victim and perpetrator.

References


Stratégia prevencie kriminality a inej protispoločenskej činnosti v SR na roky 2016 až 2020. (Strategy of Prevention of Criminal and Other Antisocial Activities in the Slovak Republic for Years 2016–2020)


Abstract
This paper aims to explore internationalization awareness and commitment of higher education in Indonesia. Since there are no publications on internationalization awareness and commitment for Indonesian higher education, this paper fills this gap. This qualitative case study involved 15 lecturers from an Indonesian university. This study used semi-structured interviews and data from the interviews were analyzed thematically. The research findings reveal that the internationalization of curriculum indicates awareness of internationalization by inviting experts and adapting curricula from developed countries. In addition, the commitment of internationalization was marked by the increasing quantity of international publications and collaboration with domestic and global agencies. The internationalization process faces both cultural and practical constraints. The finding suggests that there should be more elements of internationalization to indicate the preparation and the implementation of internationalization.

Keywords: internationalisation, awareness, commitment, higher education, Indonesia
Internationalization of higher education has been the focus of many developing countries, including Indonesia. Internationalization of universities in Indonesia has concentrated on all aspects of academic life including curriculum, teaching methods, lecturers exchange, educational facilities, the use of English as a medium of instruction, and international partnership with other universities overseas. These changes cause a large number of problems within Indonesian higher education institutions such as the need to increase English competences for lecturers who teach in international programs, the need to provide facilities to support internationalization, lack of interrelated goals among different academic sections, and limited supporting staff for internationalization of higher education. For these reasons, it is essential to further explore the internationalization of higher education within this context.

The Indonesian higher education strategic planning aims to compete at the regional level by 2015 and at the international level by 2020. Since there are not many publications on the internationalization of universities in Indonesia, this paper will explore the internationalization process of Indonesian higher education using Knight’s (2003) model. This article is significant concerning the identification of internationalization awareness and commitment of an Indonesian university to achieve world standards.

Literature review

Concept of internationalization awareness and commitment

Internationalisation has been applied in different countries such as internationalization in South Korean higher education (Park, Kim, & DeMatteo, 2016) and Canadian higher education (Qiang, 2003). The internationalization of higher education is seen as a continuous cycle rather than a static and linear process. The internationalization cycle includes awareness and commitment. The concept of the awareness and commitment of internationalization of higher education (Knight, 2003; Morosini, Corte, & Guilherme, 2017; Park et al., 2016) is applied in this paper (Table 1).

To facilitate the implementation of internationalization elements, higher education institutions need to understand these aspects, which fall within the remit of their current capacity and topical knowledge. They also need to have sufficient resources and facilities to support internationalization to indicate their readiness and
preparation to face internationalization. Conceptually, these internationalization elements are starting points for innovative ways to move internationalization beyond activity oriented. These features can become parameters to explore and measure the fluidity and mobility of higher education in providing a better quality and meaningful education.

**Previous studies on awareness and commitment to internationalization of higher education**

Despite there being a large number of studies of the internationalization of higher education, only several researchers concentrate on the internationalization process of higher education (Henard, Diamond, & Roseveare, 2012; Knight, 2003; Morosini et al., 2017; Wit, 2011).

First, Henard et al. (2012) investigated the collaborative work between government and universities to overcome challenges in the internationalization of higher education. Using online focus group discussions, 16 participants in the research were practitioners, researchers, volunteers, and non-government organization members from developed countries. The findings of the study included factors, challenges, and strategies to promote the internationalization of higher education. The research shows that the strategies they identified are applicable to higher education in non-developed countries. In addition, the research also suggests that the government should play a significant role in the internationalization of higher education.

Second, Knight (2003) conducted an online survey of 610 academics across the globe. The investigation uncovers practices and priorities of the internationaliza-
tions of higher education in Asia, Africa, America, and Europe. The findings show that a) mobility of students and lecturers is a crucial factor in internationalization; b) the loss of local identity becomes the challenge of internationalisation; c) international collaboration among academics has to be promoted in internationalization; d) funding is the second critical factor in internationalization; e) regional partnership has to be established prior to worldwide partnership; f) quality assurance has to be put in place in order to guarantee the process of internationalization. The finding also indicates that among various regions, Europe is the most prepared region to face internationalization.

Third, Wit (2011) explored the misconceptions of internationalization. Wit reviewed the database of journals and resources that discuss internationalization. The findings suggest that internationalization is not a separate approach to each section of higher education, but a more integral process-based approach focusing on a better quality of higher education. Most universities concentrate on an activity-based path which leads to the misconceptions of internationalization. Wit argued that internationalization is a comprehensive approach to a better quality of teaching and students in higher education institutions.

More recent research was conducted by Morosini et al. (2017) in the Brazilian higher education context. The research examined discourses on internationalization written by academics and research students in Brazil. The findings of the study suggest that the discourse of internationalization has been the focus of the debate among young scholars, the main topic of dissertations and theses of postgraduate doctoral and master’s degree students, and publications of senior academics. One of the key focuses was mobility to gain greater experience of the process of becoming global citizens. The process of internationalization in Brazil has been recognized as one of the Great Souths.

Even though the above-mentioned studies show positive and convincing evidence regarding the internationalization of higher education, Morosini et al. (2017) argued that there is still the need for exploring internationalization awareness and commitment in another context. So far, no empirical effort has been undertaken focusing on the internationalization awareness and commitment in the Indonesian context to help policymakers and leaders to provide views on the current practice of internationalization. This is important because all universities aim to be internationally recognized. To fill this gap, the presented study attempts to continue the scholarship of the internationalization of higher education.
Methodology

Research questions
1. What are the effective strategies to achieve internationalisation awareness and commitment?
2. What would be the challenges of the internationalisation of higher education?

Research design
This research applied the case study approach. A case study was an appropriate way to investigate current conditions of the phenomenon being implemented in an educational setting. It allowed the researcher to reveal present circumstances of an issue holistically using different kinds of evidence such as documents, interviews, artifacts and direct observations (Yin, 2013). Specifically, the case study method was appropriate for this study because it offered an overarching strategy to understand, explore and inform policymakers and educational stakeholders related to the implemented program (Gall, Gall, & Borg, 2007). In this case, the policy was the internationalization of an Indonesian higher education.

Participants and data collection
Participants were selected based on the following criteria: a) they were currently involved in international class programs; b) they were teaching in year one, year two and year three; c) they were between the ages of 30 and 60. The total number of participants from the university was 15 lecturers (Table 2).

Table 2. Participants in the study

<table>
<thead>
<tr>
<th>Participants</th>
<th>Age</th>
<th>Sex</th>
<th>Educational background</th>
<th>Position in a university</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant 1</td>
<td>40s</td>
<td>M</td>
<td>PhD</td>
<td>Dean</td>
</tr>
<tr>
<td>Participant 2</td>
<td>40s</td>
<td>F</td>
<td>PhD</td>
<td>Deputy Dean for Academics</td>
</tr>
<tr>
<td>Participant 3</td>
<td>40s</td>
<td>M</td>
<td>PhD</td>
<td>Deputy Dean for Administration</td>
</tr>
<tr>
<td>Participant 4</td>
<td>50s</td>
<td>F</td>
<td>PhD</td>
<td>Deputy Dean for Students</td>
</tr>
<tr>
<td>Participant 5</td>
<td>50s</td>
<td>M</td>
<td>PhD</td>
<td>Deputy Dean for Partnership</td>
</tr>
<tr>
<td>Participant 6</td>
<td>30s</td>
<td>F</td>
<td>PhD</td>
<td>Head of Department</td>
</tr>
<tr>
<td>Participant 7</td>
<td>40s</td>
<td>M</td>
<td>PhD</td>
<td>Head of laboratory</td>
</tr>
<tr>
<td>Participant 8</td>
<td>40s</td>
<td>F</td>
<td>PhD</td>
<td>Secretary of Department</td>
</tr>
<tr>
<td>Participant 9</td>
<td>40s</td>
<td>M</td>
<td>PhD</td>
<td>Professor</td>
</tr>
<tr>
<td>Participant 10</td>
<td>40s</td>
<td>F</td>
<td>PhD</td>
<td>Associate Professor</td>
</tr>
</tbody>
</table>
The presented study used semi-structured individual interviews that lasted between 45 minutes and one hour. The interviews followed Patton’s suggestion (2002) of creating an informal and convenient atmosphere, even though most of the interviews were conducted in the participants’ office rooms; few of them were interviewed outside campus. The interviews began with an easy topic discussing the purpose of the interviews and linking through all the semi-structured questions (cf., Appendix 1) and probing all the relevant information. Arranging time to meet the participants was a slight hurdle. However, the researchers overcame the difficulty meeting with the participants at a time that was convenient for them and visiting them in their offices several times to establish trust and sincerity in conducting the research.

**Data analysis**

Thematic analysis was used to code data inductively from different kinds of evidence. Thematic analysis “involves the searching across a data set – be that some interviews or focus groups, or a range of texts – to find repeated patterns of meaning” (Braun and Clarke, 2006, p. 15). Six steps of thematic analysis were adapted from Braun and Clarke (2006): a) reading transcript documents of the interviews; b) performing initial coding; c) searching for themes; d) reviewing and connecting themes; e) identifying global themes, and f) creating a storyline. This process of data analysis assisted the researchers to locate the participants’ quotes appropriately in the findings of this research.

**Findings and Discussion**

**Awareness of higher education internationalization**

This university shows a strong interest in promoting awareness to be internationally recognized. This university aims to make the institution a *World Class University*. To achieve this, two important ways were chosen: First, this institution...
internationalized their curricula through some ways: a) inviting experts and educational stakeholders to provide input for the improvement of the curricula and b) adapting the curricula from developed countries. The participants expressed their awareness of internationalization in as follows:

| Participant 1 | “We are committed to providing internationalized curricula for the international class programs. We tend to adapt curricula from the international standardized agency such as OECD countries. From these, we can learn what is going on overseas.” |
| Participant 13 | “We work together with our partner institutions to internationalize curricula, and we ask them to examine and verify our curricula so that we can get input and suggestions from them.” |
| Participant 3 | “We invite experts and other educational stakeholders to provide input for the development of our curricula. The aim is to adjust our curricula to the demand of the labour market.” |
| Participant 14 | “The curriculum we have is also verified by internal experts so that the combination of external and internal experts can provide overarching input for the improvement of the curricula.” |

As seen from the excerpts above, each participant emphasised the importance of internationalizing curricula for different reasons. Participants 13 and 14 chose to provide opportunities for input and suggestion by both internal and external educational stakeholders. This approach helped strengthen the curriculum of international class programs. For Participant 1, the internationalization of curricula was important for lecturers and students to be aware of the global situation. This approach assisted lecturers and students to be up-to-date with the current development of knowledge and technology. In addition, Participant 3 was concerned about meeting the demand of the labour market, i.e., the curriculum had to be adjusted to the needs of industry. The evidence of the internationalization of curriculum is in line with Knight’s idea that “the curriculum is a key thrust of internationalization” (p.16). Providing opportunities for curriculum input certainly raises and increases the internationalization awareness of lecturers, assists them to become globally engaged and, in turn, include self-awareness in the international curriculum.

Second, the awareness of this university was sending their academics and administrative staff to pursue further studies overseas. The participants in this study indicate:
Participant 5  “We support all academics and [administrative] staff to continue their studies. They can study at the master’s or doctoral levels. The reason is that we want them to experience living overseas and at the same time to have the opportunity to publish papers in international journals.”

Participant 6  “I believe that lecturers can benefit from seeing and experiencing the best practices of higher education. So when they finish they can adapt and apply it to the Indonesian context.”

Participant 7  “There are a lot of scholarships provided by the government such as BUDI [Outstanding Overseas] scholarship, LPDP [Ministry of Indonesian Finance] scholarship and a lot of other private scholarships. So there are no reasons for them not to study abroad.”

Participant 8  “We admit that sending them [lecturers] overseas is not easy, but we continue to provide support for them.”

Sending Indonesian lecturers and administrative staff to pursue Med/PhD degrees overseas could assist the improvement of the quality of human resources. This approach can enhance the performance of teaching and learning, which lead to a better quality of education. This evidence is in accordance with Knight’s (2003) concept of “mobility of lecturers is considered to be the most important reason for making internationalization a priority and is identified as the fastest growing aspect of internationalization” (p. 3). This aspect can be the point of departure for academics to engage in prolonged international activities.

**Commitment to higher education internationalization**

Internationalisation became one of the key commitments of this Indonesian university. The policies of internationalization are: a) the establishment of partnership both domestic and overseas; and b) encouraging educators to write and publish in international accredited journals. The participants in the study commented:

Participant 9  “The university is actively involved in collaboration with many domestic and international institutions. The domestic ones include local governments, schools and universities, and international agencies include universities, international donors, private foundations, and research institutions”.

Participant 10  “Yes, we have different kinds of partnership, for example with universities in ASEAN [Association of Southeast Asian Countries]. The partnerships include joint publications, partnership in community services, and student mobility”.

Participant 11  “The collaboration with all schools in this province, for example, has helped us to provide an opportunity for our students to have job training.”
Participant 12  “I am involved directly in the collaboration with universities overseas. We initiated an international conference together, which was held last month. That’s the evidence of how we build a partnership with universities abroad”.

These participants feel that they need to develop collaboration because within such an approach they can establish a more academic partnership. This work would be beneficial for lecturers because “academic partnership is something which forms the basis for cooperation and must necessarily lead to a much deeper development” (Morosini et al., 2017, p. 109). As their partnership becomes well established, the participants could collaborate on a joint publication, series of conferences, exchange of lecturers, and community services. This finding indicates that the connection could lead to a long-term professional relationship and academic friendship.

Also, the leaders at this university encourage educators to write and publish in international accredited journals. The participants in the study commented:

Participant 2  “From zero international publication, we have now more than 200 Scopus publications in international journals. This is important as an indicator of research activities in this university”.

Participant 4  “I think the government has provided the reward for authors whose articles are published in reputable journals. This message should be passed on to all lecturers so that they can be motivated to write in international journals”.

Participant 15  “We have set up a lot of agreement with our partners overseas. Our lecturers will have their articles peer reviewed by native English speakers so they will be readable and understandable”.

Based on the above excerpts, the participants did value international publication because this platform allows them to express, examine, share, and disseminate their thought globally. The participants’ voices here show that papers of their research output are the key to fruitful international engagement with the broader academic community. Thus, internationalization is regarded as a process to “upgrade the quality of education and research which remains ad hoc and marginal (Wit, 2011, p. 6). Also, encouraging educators to write and publish in international accredited journals was one of the university’s commitments to being internationally recognized for better quality research and education.
Challenges of internationalization of higher education

There were two types of challenges: cultural and practical perceptions. Regarding cultural constraints, the main problem, as most participants indicated, was lack of academic and intellectual cultures among academics, students, and staff. For example, Participant 9 commented: “We have to admit that there are limited academic activities such as a series of seminar and workshops that are held regularly among lecturers.” Similarly, Participant 14 stated that “it is a challenge for us to create the academic climate since there are not many such activities occurring at the moment.” This cultural constraint could become barriers that impede the internationalization of this institution due to limited funds. As a consequence, the lower subsidies for conducting educational seminars and workshops block their engagement with broader academic communities and researchers.

In addition, a practical constraint faced by this university is a lack of English language competence. The mastery of English as a medium of instruction is one of the critical components for the internationalization of higher education (Knight, 2009). Participant 15 commented: “We are improving our English through courses and training in both domestic and overseas programs. Some of us still have a low level of English. We aim at TOEFL score 525 [Test of English as a Foreign Language] for all lecturers teaching at international programs. This competence will enable them to teach contents in English fluently”. Additionally, Participant 1 said that “we are committed to providing continuing support for English language learning for lecturers because we still have some lecturers below the target level of English competence.” As a consequence, the lack of English competence to support internationalization could lead to poor quality teaching and learning at this institution. This, in turn, could impact on the process of internationalization of this higher education institution.

Conclusion

Based on the findings, the participants were aware of and committed to supporting the internationalization of higher education through engagement in curriculum development, lecturer mobility, research article publication in reputable journals, and collaboration with both domestic and international agencies. As the lecturers’ experiences and involvement in an international class program, this social process shows the value of commitment to the better quality of higher education. Despite cultural and practical challenges, as a whole, the lecturers
show socially and cognitively meaningful involvement in the internationalization of higher education. The findings of the study are obtained from the experiences of lecturers as practitioners in an international class program in an Indonesian university. Therefore, further work is required on other populations, particularly students’ and administrative staff’s experiences to gain more comprehensive evidence of the internationalization process and practice. Additionally, longitudinal ethnographic research should be undertaken to reveal the culture of the internationalization of higher education. Case studies are also needed to explore the use of different strategies to support the internationalization of higher education.

References
Abstract
This study aims to describe a culture-based social studies learning model to foster student multiculturalism. Research and Development design was employed, with junior high school students in Sumedang Indonesia as the subjects of the research. The proposed model is a strategy for crafting a learning environment and experience that integrate culture as inevitable part of the learning process. The teaching materials encompass the diversity of Indonesian cultures. Culture-based learning steps manifest in multiculturalism class contracts, delivery of introductory materials, library inquiry, demonstration of cultural performance, modeling/guest teachers, and value clarification technique (VCT) cultural value analysis, material review and reflection of multicultural values. The model significantly influenced the development of student multiculturalism.

Keywords: social studies, culture-based learning, multiculturalism education, multiculturalism, student, junior high school, Indonesia

Introduction

Indonesia is a country endowed with 300 ethnic groups with their own cultural uniqueness. This signifies that Indonesia is a multicultural country—a country consisting of a rich variety of cultures, which must be equally recognized. Therefore, it is imperative for Indonesian people to foster multiculturalism. Multicul-
The wisdom arises if one opens up to live a life together by seeing the plural reality as a natural necessity of life, both in one’s multidimensional life and in the more complex life of society, and hence a realization emerges that diversity in the dynamics of life is an indispensable reality that cannot be rejected, denied, let alone destroyed. Thus, multiculturalism is a must to construct a peaceful and harmonious society, which consists of a wide variety of cultural backgrounds (Fay, 1996; Jary & Jary, 1991; Kymlicka, 2010; and Mahfud, 2011).

Today, among many critical problems faced by the Indonesian youth, there is the shifting of ethical values in the life of the nation and state, the waning of the awareness of the nation’s cultural values, and the horizontal conflict owing to the diminishing awareness of Indonesian diversity. Therefore, multiculturalism among the younger generation needs to be developed by way of various channels, including formal education. Schools, as formal educational institutions, play a strategic role in the process of developing multiculturalism of the young generation through multicultural education (Barakoska, 2013; Saripudin & Komalasari, 2016a). The overall goal of multicultural education is world harmony, an understanding that will enable them to coexist in the world with diverse people. Without true understanding from all sides, there will inevitably be wars, more specifically, the primary aim of multicultural teaching is to develop the awareness of all human beings with similar needs and aspirations (Tiedt & Tiedt, 2010).

What kind of multicultural education does the school offer? According to Saripudin and Komalasari (2015) concerning the implementation of character education models in schools, in developing multicultural education the following characteristics are to be met: First, multicultural education should be value-based. Second, multicultural education should be based on school culture. Third, multicultural education should involve aspects “knowing the good, desiring the good/loving the good and acting the good” (Lickona, 1991).

All characteristics of multicultural education as character education should be integrated in core learning activities in schooling. The integration of multicultural character in the learning process in the classroom is to be done on the whole learning component including materials, methods, media, sources, and evaluation (Komalasari & Sapriya, 2016). One of the subjects closely related to the development of student multiculturalism is social studies because “The primary purpose of social studies is to help young people develop ability to make informed and reasoned decisions for the public good as citizens of a culturally diverse, democratic society in an interdependent world” (National Council for the Social Studies, 1992). The integration of multicultural education in social studies learning can
be realized through a culture-based learning model, which utilizes the diversity of Indonesian cultures to be studied, internalized and demonstrated in learning.

Culture-based learning makes students focus on “learning from experience” activities integrated in the classroom and within the community of indigenous peoples. A culture-based learning model is a form of contextual learning based on the values of local wisdom. It is a strategy for creating learning environments and designing learning experiences that integrate culture as part of the learning process (Harrison, 2008). Such learning is assumed to nurture multiculturalism, a crucial element to build the unity of Indonesia in the frame of “Bhinneka Tunggal Ika” (unity in diversity). Therefore, what is of immediate interest are studies based on research and development on a simple scale to produce a culture-based social studies learning model, which is assumed to effectively develop student multiculturalism.

**Research Problem**

Based on the background of the problem as outlined above, this research seeks to address the following questions: (1) what is a conceptual model of culture-based social studies learning for the development of student multiculturalism? (2) How to implement the learning model for the development of student multiculturalism? and (3) To what extent does the application of the proposed model affect the development of student multiculturalism?

**Research Methodology**

**Research General Background**

The presented research was conducted by adopting Borg and Gall's (1989) research and development design to produce a culture-based learning model for the development of student multiculturalism. This research is exploratory in nature, which is aimed at finding a model and an experimental method to test the influence of the model on the development of student multiculturalism.

**Research Sample**

Participants in the introduction study were students of Junior High School (SMP), teachers of Social Studies as practitioners, and lecturers who are experts in social studies learning. The participants in the experiment study were students of the eighth grade in Tanjungsari Junior High School (Sumedang Regency, West Java Province, Indonesia) of social studies subjects of Cultural Diversity of Indo-
nesia, comprising 38 students in the experimental group and 36 students in the control group.

**Instrument and Procedures**

The data collection instruments used in this study included: (1) observation sheet, (2) documentation study, (3) focus group discussion, and (4) attitude scale. The attitude scale was tested for validity with Pearson’s product-moment correlation, and its reliability was tested with Cronbach’s alpha (Shadish, et.al, 2002). The research procedure “Research and Development,” according to Borg and Gall (1989), was adapted, comprising four stages, namely: (1) preliminary study, (2) compilation of a conceptual model, (3) validation and revision of the conceptual model, and 4) model implementation.

**Data Analysis**

Qualitative data analysis was carried out with the following steps: (1) conducting data reduction by summarizing field reports, taking notes on the main points relevant to the research, (2) arranging data systematically based on certain categories and classifications, (3) presenting data in the form of tables or drawings so that emerging patterns from the data could clear and complete, (4) conducting a cross-site analysis by comparing and analyzing data in depth, and (5) presenting findings, drawing conclusions in the form of general trends and their implications, and recommendations for development (Fraenkel & Wallen, 1993). Analyzing quantitative data was performed for the data collected through attitude scale by using different test analysis (gain score) and t-test (Shadish, et.al, 2002).

**Research Results**

**A Conceptual Model of Culture-Based Social Studies Learning**

Based on the preliminary study and focus group discussion with experts (lecturers of learning model and cultural material of Indonesia) and practitioners (social studies teachers), the learning model in question was conducted in three major frameworks:

1. Learning about culture. Placing culture as a field of science. The topic under discussion was on the diversity of Indonesian cultures. Of the many local cultures in Indonesia, these cultures, the cultures of Aceh, Sunda, Java, Bali, Lombok, Flores, Dayak, Bugis, Ambon and Papua were selected.
2. Learning with culture. At this stage, the students take advantage of various forms of cultural manifestation. Culture and its manifestations serve as learning media and provide the contexts for the concepts or principles in social studies subjects. In the learning situation under study, the students wore cultural attributes, such as ethnic clothing and exhibited certain local cultures of Indonesia.

3. Learning through culture. In social studies subjects, learning methods provide opportunities for students to demonstrate their level of understanding through a variety of cultural manifestations. Learning through culture is a form of multiple representations of learning or assessment of student understanding in various forms. For example, students do not need to take a test to explain Indonesian culture, but rather make creative cultural material and a show of a local Indonesian culture (singing, food, dance, clothing, traditional ceremonies, etc.). By analyzing the cultural products the students produced, the teachers could assess the extent to which the students had exhibited an understanding of the topics of Indonesian cultural diversity and how they had internalized the topic. Learning through culture allows the students to pay attention to the depth of their thinking, their understanding of the concepts or principles they learned, and their creative imagination in expressing their understanding.

The Implementation of The Culture-Based Social Studies Learning Model

The learning model was implemented in eight meetings through the following steps:

1. A study contract and “multiculturalism class” contract, and division of student groups based on major Indonesian cultures;

2. Brainstorming and Value Clarification Technique (VCT) value analysis for the delivery of introductory materials on Indonesian cultures through the following: (a) the students listen to the material on the structure of Indonesian cultures in PowerPoint, (b) the students inquire about the nature of Indonesian cultures, (c) the teacher elaborates the material, and (d) the teacher and students reflect on the values within the Indonesian cultures and actual/current value actualization.

3. Library inquiry to write a paper on the cultures of Indonesia and preparation of cultural performances: (a) the students review various learning resources related to certain regional cultures in Indonesia; (b) the students write a paper related to certain regional cultures in Indonesia with reference to various available learning sources.
4. Paper presentation and Indonesian cultural performances: the students in groups present a paper on local cultures in Indonesia, analyze the values contained in the local culture, and display a sample form of the local culture in question. The steps include: a) presentation of a paper with creative multimedia (concepts, films, drawings, songs, etc.), b) exhibition of a sample form of local culture of Indonesia (attribute of ethnic clothing, art, food, dance, equipment, etc.), c) presentation of group yells for group motivation and dynamics, d) other students’ response by asking questions (chaired by the teacher), and e) the teacher’s deliberation on the material/the issue being discussed.

5. Modeling by inviting people from indigenous communities in Indonesia (Papua, Bali, and Dayak) as guest teachers in the learning activities. The learning steps are as follows: a) the guest teachers convey materials related to their respective local culture along with local wisdom contained in it, b) the students ask questions related to the local culture presented by the guest lecturers, and c) the teacher deliberates on the materials and reflects on the application of local wisdom values contained in the culture.

6. VCT cultural value analysis through the following steps: a) the teacher with the students explore the values of multiculturalism in the diversity of Indonesian cultures, and b) the teacher with the students explore the values of local wisdom that must be nurtured and applied to everyday life.

7. Reflection and Evaluation: a) the teacher with the students reflect on the learning process and the extent to which multiculturalism and the value of local wisdom can be applied to student everyday life, and b) the students take a test.

The Effect of the Application of the Learning Model on Student Multiculturalism

Based on the test results of paired samples t-test, Sig. (2-tailed) is 0.000 < α (0.05). It means there is a difference between the development of the students’ multiculturalism at the beginning of the measurement (pretest) and the final measurement (posttest) in both the experimental and control groups. The obtained scores of the control and experimental groups show significant differences in the development of the students’ multiculturalism formation between the group that used culture-based social studies learning (8.21) and the group that used conventional social studies teaching (0.58). Student multiculturalism in the group that integrated culture-based social studies learning is higher than that of the group that used conventional social studies teaching. Thus, the culture-based
Culture-Based Social Studies Learning Model evidently developed student multiculturalism. The average scores of the pretest-posttest and the obtained scores of the control and experimental groups are presented in Table 1.

Table 1. Average scores of pretest-posttest and obtained scores of control and experimental groups

<table>
<thead>
<tr>
<th>Classroom Data</th>
<th>N</th>
<th>Mean</th>
<th>Standard of Deviation</th>
<th>Variants</th>
<th>Gain</th>
<th>N Gain</th>
<th>Asymp Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Pre-test</td>
<td>36</td>
<td>17.72</td>
<td>5.10</td>
<td>12.82</td>
<td>0.58</td>
<td>0.03</td>
<td>0.000</td>
</tr>
<tr>
<td>Control Post-test</td>
<td>36</td>
<td>18.30</td>
<td>4.17</td>
<td>13.58</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Pre-test</td>
<td>38</td>
<td>13.47</td>
<td>3.97</td>
<td>10.36</td>
<td>8.21</td>
<td>0.36</td>
<td></td>
</tr>
<tr>
<td>Experimental Post-test</td>
<td>38</td>
<td>21.68</td>
<td>4.92</td>
<td>16.57</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Aspects of multiculturalism developed through this culture-based learning include: (1) an understanding of the diversity of Indonesian ethnic groups, religions and religious beliefs, social and economic classes, gender, life tools and technology, professions, social system, languages, arts, and knowledge system, (2) realization of the alignment of diverse cultures, (3) recognition of Indonesian local cultures; (4) loving and preserving diversity of Indonesian cultures, (5) taking pride in diverse Indonesian cultures, (6) learning the diversity of Indonesian local cultures, (7) gratifying the cultural diversity as God's blessing, (8) living in peaceful coexistence, (9) exhibiting tolerance and reducing prejudice against different cultural groups, (10) resolving conflicts due to existing differences, (11) refraining from doing discriminatory acts to others, violent acts to the minorities, upholding excessive fanaticism, and (12) respecting differing opinions among community members.

Discussion

Empirically, the results of this study suggest that the application of culture-based social studies learning model plays a significant role in the development of student multiculturalism. The results and findings of the above research can be analyzed using various theories and views.

First, culture-based social studies learning is not just transferring or conveying culture or cultural embodiment but it uses culture to allow students to make meaning, penetrate the limits of imagination, and creativity to achieve a deep
understanding of the material they learn. Thus, the three strategies in culture-based learning, i.e., learning about culture, learning with culture, and learning through culture were implemented in their entirety (Goldberg, 2000). This culture-based learning was applied through the integration of contextual learning with value learning. The learning model developed is value clarification technique (VCT) of cultural value analysis with contextual learning inquiry (literature, demonstration, and modeling/guest teachers). Culture-based learning can offer meaningful and contextual learning strongly related to cultural communities and make learning interesting and fun (Saripudin & Komalasari, 2016b). Learning conditions that allow for the creation of contextual meaning are among the basic principles of the theory of constructivism of thought as proposed by Vygotsky (1978) (“Social and Emancipatory Constructivism”) and Piaget (1970) (“Piagetian Psychological Constructivism”).

Second, the development of multiculturalism in cultural-based lessons emphasizes the cultivation of a respectful, tolerant, democratic way of life to the diversity of learners and the creation of a conducive and non-rigid, non-exclusive, and unbiased learning environment for the existence of all forms of difference (Naim & Sauqi, 2010). Culture-based learning provides an understanding of multiculturalism in building the life of the nation and state of Indonesia, which is composed of a rich variety of cultures. Cultural learning fulfills several dimensions of Banks’ (2002) multicultural education: 1) content integration: integrating various cultures and groups to illustrate fundamental concepts, generalizations and theories in social studies learning. Students learn the various cultures of Indonesia theoretically with the aim of forming “human culture” and creating “a civilized society”, 2) knowledge construction process: making students understand the cultural implications into the subjects of social studies. Students try to internalize and demonstrate the diverse regional cultures in the classroom, 3) an equity pedagogy: adjusting the teaching method by means of student learning in order to facilitate the academic achievement of students whose backgrounds vary in terms of race, culture, culture or social backgrounds. This type of learning uses a form of active, creative, effective, and fun learning, and 4) prejudice reduction: identifying the characteristics of ethnicity and race of students and determining the method of learning. A contextual approach was used by considering diverse student entry behaviors.

Thirdly, in culture-based learning, teachers should have the ability to be: (a) student guides, negotiators of meaning, student mentors in exploration, analysis, and decision-making, (b) self-controllers, not as authoritarian figures or the sole source of information for students, (c) active, creative, and interesting learning
process designers, (d) creative designers of the strategy in order to identify a full range of abilities and skills that each student achieves, (e) strategy designers that allow the student to get used to thinking scientifically, expressing ideas, explaining rationally, arguing, and producing scientific work, and (f) taking advantage of the uniqueness of students’ prior knowledge and experience in the learning process. Cultural learning places students in strategic positions in the learning process, and teachers as creative designers and actors. It is certainly a challenge for teachers in a culture-based class to be able to design learning that allows students to optimally display all their creativity and abilities (Goldberg, 2000).

Fourthly, based on the results of the research, culture-based learning has a significant effect on the development of student multiculturalism. The results of this study indicate that culture-based learning implements multicultural education, i.e., education on cultural diversity that contains the introduction and understanding of Indonesian cultures, and appreciates cultural differences. Multicultural education should be a strategy in managing culture by offering a powerful cultural transformation strategy, i.e., through the mechanism of education to respect cultural differences (Mahfud, 2011). Culture-based social studies learning as part of multicultural education provides an understanding of the acceptance of human differences as a matter of necessity. Multicultural education imparts equality, justice, plurality, nationality, race, ethnicity, language, tradition, and religious respect. It requires a balanced, harmonious, functional and systematic lifestyle and discourages the occurrence of discriminatory acts against humanity and democratic values required in various social activities (Kymlicka, 2010).

Conclusions

Cultural-based social studies teaching is a strategy for crafting and fostering learning environments and experiences that integrate local culture within the overall components and learning stages. Cultural learning meets the dimensions of multicultural education that include content integration, the knowledge construction process, an equity pedagogy, and prejudice reduction. The learning model was conducted through the following steps: a) learning contracts to build a “multiculturalism class” commitment, b) group sharing and delivery of cultural introductory materials through brainstorming and value clarification techniques (VCT), c) delivery of introductory materials, d) culture-based learning (library inquiry, demonstration, modeling/guest teachers, and VCT cultural value analysis), and e) reviewing material and reflecting on values. Implementation of the
culture-based social studies learning model significantly influences the development of student multiculturalism. Therefore, this culture-oriented learning model is recommended to be applied to other subjects in school, by taking into account the characteristics of the subject matter.

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Predicting the Effectiveness of School Principals Based on Fiedler’s Leadership Model

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Abstract
The purpose of this study was to predict the effectiveness of Zahedan elementary school principals based on the triple factors of position in the Fiedler leadership model. The presented study was a descriptive correlational study in which 356 elementary school teachers were studied with stratified randomized sampling through two questionnaires including determining the leadership situation and the effectiveness of school administrators. The correlation coefficient and simultaneous multiple regression were used for data analysis with the help of SPSS software. Based on results, there was a positive and significant relationship between the three factors of leadership position (authority, leader-member relationship, duty structure). The results of multiple regression analysis also showed that the three situational factors can predict the effectiveness of school principals. Therefore, it can be concluded that school administrators should benefit from good authority, have good interactions with teachers and emphasize the structure of tasks to increase their effectiveness.

Keywords: effectiveness, Fiedler’s leadership model, school principals
Introduction

Various definitions have been presented of effectiveness. For example, organizational effectiveness, from the viewpoint of Daft, is referred to as the extent to which the organization approaches its goals or, as stated by Robbins, organizational effectiveness is a situation in which the organization uses resources to a limited extent and can achieve goals according to the determined criteria (Hasani and Samari, 2010). Therefore, organizational effectiveness is the extent to which organizational goals are realized. It has also been mentioned in another definition that the organization’s effectiveness is the extent to which it realizes its long-term and short-term goals, identifies its effective strategic factors and meets the needs (Bakhtiari et al., 2013). Thus, it can be accepted that effectiveness is the criterion of achieving the goals of the organization.

Educational organizations attempt to achieve the goals of their organizations and this effort provides a framework for studying and evaluating the effectiveness of the school (Zaki, 2010). Due to the sensitivity and importance of the quality of education as well as its effect on the future of their children, students’ parents are strongly inclined to send their children to schools where they have good and effective performance according to their research, (Hasani & Samari, 2010).

The success of schools depends on the realization of educational goals and achieving these goals depends on effective management and leadership (Ranjbar et al., 2014). School principals have the greatest impact on school goals, especially students. To do this, they do a variety of activities. They provide a capable, efficient and deserving force. They also supply resources which are necessary to build and address them. Moreover, they coordinate, direct and control the school and do any other things they recognize as the necessary activities to achieve educational goals. Hence, the future of schools and their improvement depend on their effective management (Bakhtiari et al., 2013).

The effectiveness of educational managers is of particular importance and it seems that effective learning, which is the main focus of all activities in school, is largely owed to the school and the effective principal. It can be said that successful management requires efficiency and effectiveness (Alagheband, 2011). Without leadership efforts, a manager cannot achieve the fundamental mission of securing the success of school students. In a school where there is ineffective leadership and management, the training task is not well done while in a school where there is effective leadership and management, not only are the teachers able to do their job, but also the employees and students are well-motivated and individuals know their goals (Abdollahi and Heidarifar, 2014).
One of the factors influencing the effectiveness of managers is their leadership style. But research shows that there is no definite leadership style that would ensure effectiveness in all situations. As indicated in the study of Hina et al. (2014), there is a positive, strong and meaningful correlation between the communication competences of supervisors, task-oriented leadership as well as relationship-oriented styles and staff performance. Tabernero & Arana (2009) claim that task-oriented leadership style has a greater and positive impact on group effectiveness while the relationship-oriented leadership style causes greater coherence among the members of the group. According to Muchiri et al. (2011), effective leadership emphasizes justice, equality, honesty, employee development, fostering workplace coordination and trust. Luthans & Peterson (2002) state that employees’ participation and managers’ effectiveness affect each other.

One of the prevailing styles of leadership is Fiedler’s contingency model. This model is one of the positional theories of leadership in which constructive leaders have no specific attributes and specifications but specific conditions and interactions between the leader’s personality and the conditions of the group cause leaders to become effective. According to Fiedler, three factors, i.e. leader-member relations, the structure of duty and the power of authority in the leader, determine the situational desirability. Leader-member relationships refer to the degree of mutual trust, respect and confidence between the leader and their subordinates while the structure of duty is related to the degree of clarity and stability of the job. Furthermore, the power of authority is associated with the internal and external power of the position that the leader has achieved and can apply. According to Fiedler’s theory, an effective leader will have good relationships with their employees, will express the structure of duty clearly and they also have good authority (Sharif et al., 2006).

Based on the research in management science, human resources are the main resources of each organization and the success of organizations is linked to the effective use of human resources and from the findings it follows that the success and effectiveness of the organization depends, to a large extent, on the desirable use of potential forces, especially human resources. The realization of this goal is subject to the appropriate leadership style. The effectiveness of leadership in organizations depends on the styles that leaders use. Fiedler’s contingency theory is one of the most prestigious theories of contemporary leadership which is designed to provide a conceptual framework for determining the effective factors in leadership effectiveness. Based on this model, effective group performance depends on the leader’s position power, leader-member relations, and task structure. According
to Fiedler, the effectiveness of the outcome of the implementation of leadership attitudes and the constraints and conditions of leadership. Considering the importance of management and leadership in the education sector, and since the assumptions of Fiedler's contingency theory have been studied and emphasized in military and administrative-business areas, and according to the importance of educational leadership and to clarify the importance of leadership style in the effectiveness of school principals, this research aimed to test the relationship between the Fiedler leadership style and the effectiveness of school principals. Therefore, the main objective of this study was to predict the effectiveness of primary school principals in Zahedan based on the positional factors of leadership in Fiedler’s theory, i.e., the leader-member relations, the structure of duty and power of authority by referring to the materials mentioned.

**Research Method**

The presented study is a descriptive correlation. Based on the Cochran sampling formula, 356 teachers of Zahedan city were selected by stratified random sampling. Two questionnaires were used to collect data:

A) The Determination of Leadership position Questionnaire by Sharif et al. (2006): The questionnaire examines the role of the leadership of school principals and it is in the form of 3 components and 46 items: Executive power (16 items), Functional structure of manager (15 items) and manager interactions with employees (15 items).

(B) The questionnaire on the effectiveness of school administrators by Alagheband (1992): The questionnaire is presented in the form of 6 components (teacher leadership, relationships with students, relationships with parents, proper treatment of teachers, assessment methods, school administration) and 30 items (each component with 5 items) which assesses the effectiveness of school administrators. The Questionnaire was set based on a five-point Likert scale (the method of grading was determined from 1 = too low up to 5 = very high). To determine its reliability, Cronbach’s alpha coefficient was used, in which the Cronbach alpha value for the leadership determination questionnaire was 0.89 and it was 0.87 for the questionnaire of managers’ effectiveness. For data analysis, inferential statistics of the Pearson correlation coefficient and multiple simultaneous regressions were implemented using SPSS software.
Results

To examine the relationship between the situational leadership style (and its triple factors) and management effectiveness, the Pearson correlation coefficient was used at the first stage (Table 1).

Table 1. Pearson correlation coefficients of situational leadership style and management effectiveness

<table>
<thead>
<tr>
<th>Variable</th>
<th>Leadership of teachers</th>
<th>Interactions with students</th>
<th>Interactions with parents</th>
<th>Worthy treatment</th>
<th>Staff assessment</th>
<th>School Administration</th>
<th>Management Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power of Authority</td>
<td>0.726</td>
<td>0.685</td>
<td>0.712</td>
<td>0.704</td>
<td>0.752</td>
<td>0.761</td>
<td>0.805</td>
</tr>
<tr>
<td>Interactions</td>
<td>0.659</td>
<td>0.661</td>
<td>0.65</td>
<td>0.708</td>
<td>0.706</td>
<td>0.69</td>
<td>0.755</td>
</tr>
<tr>
<td>Structuring</td>
<td>0.693</td>
<td>0.634</td>
<td>0.607</td>
<td>0.632</td>
<td>0.697</td>
<td>0.69</td>
<td>0.733</td>
</tr>
<tr>
<td>Leadership style</td>
<td>0.759</td>
<td>0.722</td>
<td>0.717</td>
<td>0.744</td>
<td>0.786</td>
<td>0.781</td>
<td>0.836</td>
</tr>
</tbody>
</table>

* All coefficients at the level of 0.001 are significant.

The findings presented in Table 1 indicate that all the correlation coefficients between the management effectiveness and the situational leadership style as well as its triple factors (and its dimensions) are positive and significant (p < 0.01). At the second stage, after discovering a positive and meaningful relationship between the situational leadership style and management effectiveness, multiple regressions were used simultaneously to estimate the relationship (Table 2).

Table 2. Summary of simultaneous multiple regressions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standard coefficients</th>
<th>Non-Standard coefficients</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>Std. Error</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Power of authority</td>
<td>0.482</td>
<td>0.146</td>
<td>1.44</td>
<td>9.87</td>
</tr>
<tr>
<td>Interactions</td>
<td>0.33</td>
<td>0.134</td>
<td>1.004</td>
<td>1.48</td>
</tr>
<tr>
<td>Structuring</td>
<td>0.109</td>
<td>0.131</td>
<td>0.282</td>
<td>2.16</td>
</tr>
</tbody>
</table>

* Sig=0.000 f= 297.785 R2= 0.717 R= 0.847
Based on the findings presented in Table 2, the value of the correlation coefficient (R) is 0.847 and the coefficient of determination (R²) is 0.717, i.e., 71.7% of the variations in the criterion variable (management effectiveness) can be explained based on the predicting variables and the rest belongs to other variables, not included in this study. Moreover, with respect to the significance of the β coefficients, the zero assumption that “beta coefficients are zero” is rejected with the confidence of 99%. Among the three factors of organizational health, authority with the value of β (0.482), interactions with β (0.33) and task structure with β value (0.109) have the greatest impact on management effectiveness.

**Discussion and conclusion**

The findings of this study show that there is a positive and meaningful relationship between the effectiveness of primary school administrators and three situational factors, i.e., the power of the principal, interactions of the manager with subordinates and constructing a task. Also, the results of multiple regressions indicate that all the three factors including authority of the manager, administrators’ interactions with subordinates and task structure can predict the effectiveness of school administrators. The findings of Sharif et al (2006) also showed that there is a positive and significant relationship between the three factors of position in Fiedler’s leadership style and effectiveness. Leadership style affects the efficiency and effectiveness of employees and ultimately the organization directly and indirectly as a facilitating and provocative factor (Chukwunenyi, 2004).

Leaders who communicate with their staff, pay attention to their individual differences, help employees implement their potential talents and enhance the sense of responsibility for their duties in the organization, not only strengthen independence and work challenges and accelerate inspirational motivation in the organization by promoting thinking in the work processes but also take steps in order to strengthen the organizational culture and finally cause organizational effectiveness in their respective organizations (Nazari et al., 2012).

According to the findings of this study and in order to enhance the effectiveness of the school, it is suggested that:

School principals should try to benefit from the legal support of higher authorities of the education organization and use their legal influence and support in the interest of school teachers (agent of authority), increase the teachers’ commitment to the goals and values of the school and the education organization (agent of interacting with subordinates) by showing emotions, friendly, supportive, open
and collaborative behavior along with respect, mutual trust and finally they should clearly specify goals, tasks and expectations of the organization, maintain accurate performance standards and avoid non-structural work (structuring agent).

One of the most important limitations of this study is the statistical population, which was limited to the principal and teachers of the elementary school in Zahedan. Therefore, the results should not be generalized to other managers or staff.

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Supporting the Learning of Polish and Czech Students by Digital Tools

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Abstract
The article presents the results of exploring the purposes of using digital tools to support student learning at universities. This comprises some identified types of digital tools and the frequency of their use by academic staff, which varies due to their level of digital literacy. Then the collected data is provided concerning the numbers of academic staff using basic electronic communication methods. The above data were collected in Polish and Czech universities and later compared to each other.

The presented study was conducted over the period 2015–2016 within the IRNet project – International research network for study and development of new tools and methods for advanced pedagogical science in the field of ICT instruments, e-learning and intercultural competences in Poland (University of Silesia, Faculty of Ethnology and Educational Science in Cieszyn) and the Czech Republic (University of Ostrava, Pedagogical Faculty).

The undertaken research was aimed at recognizing academic teachers’ activities concerning their support in university students’ learning process.

Keywords: higher education, academic teachers, supporting the learning process, digital tools, MOOC, comparative study
Introduction

E-learning is successful today as a method which supports or substitutes the traditional didactic process (t-learning). A growing interest is also observed in e-learning as a scientific discipline (Woolf, 2010; Maloy, Verock-O’Loughlin, Edwards, Woolf, 2016). In the area of didactics in higher education, due attention should be paid to many potentialities of individualizing the education in regard to the diversification of both the pace of work and the implemented contents. Undoubtedly, this turns out to be beneficial for very able learners as well as those with learning difficulties. Thus, e-learning can be treated as a tool which levels out educational chances. While building systems of distance education, higher education institutions face four main problems associated with adjusting the curricula and the educational processes to the requirements of e-learning systems, to activating university student environments, and to technological requirements and problems with building an e-learning system. What is also worth attention is a change in the teacher’s role in the educational process – drifting away from the position of a source of knowledge (learners can obtain the latest information from websites, coursebooks, dictionaries, multimedia encyclopaedias, chats and fora) in favour of the position of a person who indicates the way to knowledge and supports learners in the acquisition of knowledge on their own by, e.g., sharing appropriate programs and teaching the skills of applying them (Moore, Anderson, 2003; Midgley, 2016; Malach, Kostolánová, Chmura, Ogrodzka-Mazur, Szafrańska-Gajdzica 2016; Juszczyk, Kim, 2016; Ogrodzka-Mazur, Szafrańska, Malach, Chmura, 2017).

Online learning at universities

In the context of exploring the support of student learning by digital tools, it seems necessary to mention the annual reports on online education in the USA. The 2010 report (Allen and Seaman, 2010) collected data from 2,500 dormitories and universities (i.e., from 57.3% of all tertiary institutions). It provides the classification of university courses from the point of view of their didactic interpretation – the applied methods, which were created on the basis of the comparison of classification approaches of the interviewed institutions. The traditional type of courses has a zero share of the online presented content. The web facilitated course can have a 1–29% share of the online presented content. The
blended/hybrid\(^1\) course has a 30–79% share. The online course has a share higher than 80% while it has no share of direct instruction. 63% of all the interviewed institutions consider online education an integral part of their long-term strategy.

5.6 million students (nearly 30% of all university students and this number continues to rise) studied at least one online course in the year the research took place. The number of the authorities of academic institutions who consider the study results of online education to be the same or better than the results of traditional education is also rising (from 57% in 2003 to 66% in 2010). More than 75% of public school authorities state that online education is the same or better than traditional (face-to-face) education. 75% of the institutions state that the economic decline increases the requirements for online courses and programs.

The 2011 report (Allen and Seaman, 2011) shows only small shifts concerning the application of online education. The number of university students who study at least one online course increased to 6.1 million, which is 31% of all students. The number of the authorities of academic institutions who consider the study results of online education to be the same or better than the results of traditional education has increased to 67%. The academic authorities of the institutions with online offers have a much more favorable opinion on the learning outcomes of online courses than those of the institutions with no online courses or programs. It is interesting that over the past eight years the acceptance of online education almost has not changed and that it is different at different types of institutions in spite of the growing number of online programs and courses. Fewer than one-third of leading academic scholars believe that their department accepts the value and justness of online education. The departments profusely support the development of online education by combining mentoring and optional courses, which ensures pleasant and successful realization of online courses.

Omitting the three following reports, the 2015 report (Allen and Seaman, 2015) includes the summary of the incorporation or planning of Massive Open Online Courses (MOOCs), which already exist in 8% of institutions. The percentages of higher education institutions that currently have a MOOC are diversified. Many institutions (39.9%) report they are still undecided about MOOCs, while the single largest group (46.5%) says they have no plans for a MOOC. Only 16.3% of academic authorities believe that MOOCs represent a sustainable method of offering online courses (28.3% in 2012). Decreasing numbers of authorities see

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\(^1\) Blended learning may fall into four basic models: the rotation model (with variants: rotation, lab rotation, flipped rotation and individual rotation), flex model, a la carte model and enriched virtual model (cf., Powell et al., 2015).
MOOCs as a way for institutions to learn about online education: 27.9% this year, 49.8% and 44.0% in the last two years. The acceptance of online education has decreased to 28%, this slightly declining trend is permanent. The report once again deals with a question whether or not students require more discipline to complete online courses. Academic authorities have been consistent in their belief that “students need more discipline to succeed in an online course than in a face-to-face course.” In 2005, the majority of respondents (64.7%) agreed with this statement. By 2013, the proportion had grown to 68.9%, and it now stands at 68.3% for the current 2014 results.

Moreover, the report pursues the identification of the developmental barriers of online education. It argues that “when online education first arrived on the scene, one of the hopes was that teaching with technology would be more efficient than current methods”. Perhaps faculties could teach more students with improved quality by taking advantage of the new technology. This has not proven to be the case. Academic authorities have continued to report that it takes more time and effort for faculty staff to teach an online course than to teach a corresponding face-to-face course (Allen and Seaman, 2015, p. 26). Unfortunately, the majority of leaders report that the additional effort required to deliver an online course represents a barrier for online instruction. New technologies, the academic experience with teaching online, and expanded and improved institutional support services have not resulted in reducing this problem. The level of concern in 2014, with 78.0% reporting it as an “important” or “very important” hindrance for the adoption of online instruction, is higher than it was in 2008 (76.3%).

It seems that the technical support for university teachers in using online education alone cannot limit the perception of this way of education as more demanding in comparison to the traditional way, which can result in the teachers’ lack of motivation concerning online education and its application. Moreover, the report also showed considerable diversification concerning the perception of the term Open Educational Resources (OER), which is caused by the lack of terminological uniformity. The report mentions the findings of the previous reports (Allen and Seaman, 2012), which led to two crucial conclusions:

- “Nearly two-thirds of all chief academic officers agreed that open educational resources have the potential to reduce costs for their institution.
- There was wide agreement among academic authorities that open educational resources will save time in the development of new courses” (Allen and Seaman, 2015, p. 28).

On the other hand, the result of the faculty awareness of open educational resources is surprising. “A bit more than one third claimed to have some level of
awareness. Just over 5% reported that they were very aware (“I am very aware of OER and know how they can be used in the classroom”), with around three times that many (15.2%) saying that they were aware (“I am aware of OER and some cases of their use”). An additional 13.8% of the faculty reported that they were only moderately aware (“I am moderately aware of OER but I am not sure how they can be used”). This left nearly two thirds of the faculty reporting that they were generally unaware of OER (“I am not aware of OER” or “I have heard of OER, but don’t know much about them”) (Allen and Seaman, 2015, p. 29).

Another remarkable issue, which was part of the latest report, was the retention of students in online courses. “There is a growing concern among academic authorities about the issue of student retention. A total of 44.6% of chief academic officers reported that they agreed that retaining students was a greater problem for online courses than for face-to-face courses. This compares to rates of 40.6% in 2013, 28.4% in 2009 and 27.2% in 2004 for the same question” (Allen and Seaman, 2015, p. 24).

The authors of the report explain the issue by stating that students choose online courses because they are not able to attend traditional courses because of work, family or other commitments. The essential question, however, can be more complex: “If students are more likely to drop out of an online course because of work or family commitments, does that reflect on the nature of the course or the nature of the student?” (Allen and Seaman, 2015, p. 24). In any case, two thirds of all academic authorities continue to regard retention of online students as a critical issue for the future of online education.

The research results of Cegarra-Navarro and Rodríguez (2012) suggest that the use of e-learning by a university may depend on how university administrators handle the Internet, Groupware and Collective Systems. Not only will the Internet make universities more transparent and provide access to a wider range of information and services, but when integrated with Groupware and Collective systems, it will also create opportunities for partnership and collaboration between students and teachers. Limniou, Haldcroft and Holmes (2015) have shown that the Internet, as a medium for social activities, opens up entirely new features in the academic society. However, academics should understand how people learn and how people can be facilitated to learn through ICT in order to create a pedagogically valuable virtual course/community. Socio-emotional and informational motivations mainly lead research students to the involvement in a virtual community in order to discuss with others and/or collect information about common interests. University staff can collaborate with students in a flexible digital environment and consciously empower them.
Supporting the Learning of Polish and Czech Students by Digital Tools

The research into digital tools to support student learning

The main research problem was the lack of information concerning the purpose of using digital tools to support students’ learning at universities, the frequency of their use, the dependence on the degree of digital literacy of academics and the number of academics who apply the basic methods of electronic communication.

The objective of this descriptive research was to find out:

- what are the aims of supporting student learning by the use of digital tools and how Polish and Czech teachers differ,
- what is the frequency of use of certain types of digital tools (programs), depending on the level of digital literacy of academics and universities,
- what percentage of academics of both universities use individual basic instruments of electronic communication with students.

Data collection

The data (obtained from the research questionnaire for academic scholars) was collected at the end of the 2015/16 academic year. The research sample consisted of 46 academic teachers of the Faculty of Ethnology and Educational Science of the University of Silesia, including 30.4% of full-time professors, 39.2% of assistant professors and 30.4% of assistants. The research also involved 40 university teachers working at the Pedagogical Faculty of the University of Ostrava. The majority of the respondents were assistant professors (72.5%), the remaining ones were doctors with habilitation and full-time professors.

Research results

The examined academic teachers in Poland and the Czech Republic indicated the most important goals of using network communication in their didactic activities. The comparison of the answers provided by the Czech scholars with the answers of the Polish university staff concerning the goals which can be achieved owing to the use of digital tools as well as the conducted statistical analyses revealed significant differences in the following responses:

- encouraging students for mutual evaluation ($\chi^2 = 6.2; p < 0.05$ and $\Phi = 0.27$),
- creation of the educational social network ($\chi^2 = 9.3; p < 0.05$ and $\Phi = 0.33$),
- solving telecommunication problems ($\chi^2=25.7; p<0.05; \Phi=0.55$).
The respondents were asked to select those of the eight proposed goals (purposes) that – according to them – could be achieved through the use of digital tools. They were allowed to choose as many goals (purposes) as they wished. The data in Figure 1, respectively show that 67.5% of all the teachers are convinced that the digital tools are suitable for student consultations, 60% of them think that they should be used for evaluation of and comments on students’ tasks and 40% think they should be used in discussions concerning study problems, preferably in online mode.

The examined academic teachers assessed the programs applied in didactic activity. Using a five-point scale, the respondents were asked to evaluate the use of the four presented computer programs, which differed in the degree of commonness or specialization for university education (1 means less often and 5 means very often). The data presented in Figure 2 show that the more specialized a program is, the less often it is used. In other words, non-specialized office programs are used very often while programs managing the educational process and the choice of its content are used more rarely.

When comparing the evaluations of the programs applied in didactic activity by the scholars from Ostrava and Cieszyn, it can be noticed that the academic teachers from Poland evaluate significantly higher:

* In all figures and tables, statistically significant differences are marked in bold

**Figure 1.** The purpose of using digital tools to promote learning
Source: own elaboration
Supporting the Learning of Polish and Czech Students by Digital Tools

• specialized computer programs for teaching (Mann-Whitney U test: \( Z = 3.04; p = 0.002 \)),
• modern gadgets and services (Mann-Whitney U test: \( Z = 5.07; p = 0.0000 \)).

What was also compared were the evaluations of programs by the respondents in Ostrava and Cieszyn and ICT competences as their determinant. Both in the Polish and Czech environment, in each case, the academic teachers who considered themselves “advanced users” evaluated the software used in education significantly higher (Figures 3 and 4).

Figure 2. Frequency of teachers’ use of particular groups of programs in education (factor – environment)
Source: own elaboration

- Office programs, email, search engines, etc.
- Programs managing the education process and electronic content
- Specialized educational computer programs
- Modern utilities and services (the Internet, mobile devices, etc.)

Figure 3. Frequency of Czech teachers’ use of particular groups of programs in education (factor – ICT competence)
Source: own elaboration
Significant differences in the evaluations of the Czech scholars were confirmed in the analyses only in the category:

- programs managing the educational process and electronic content (Mann-Whitney U test: Z = 2.04; p = 0.041).

The evaluations of the Polish scholars differ significantly in the following more often:

- office programs, email, search engines, etc. (Mann-Whitney U test: Z = 1.98; p = 0.048),
- specialized educational computer programs (Mann-Whitney U test: Z = 3.3; p = 0.001),
- modern utilities and services (Mann-Whitney U test: Z = 2.81; p = 0.005).

Moreover, the teachers who consider themselves advanced users evaluate the programs applied in the didactic process significantly higher.

Table 4 presents the research results for which the conducted analyses confirmed significant differences in regard to the environment and ICT competences.

The academic teachers were also asked to indicate the communication networks which they use in the process of teaching their students. The respondents could choose more than one of the eight possible answers. The results are summarized Figure 5.

When communicating with their students, the Czech university teachers prefer emails and relevant LMS tools (85% of all the teachers and 55.7% of all the answers). 20% of all the teachers use media channels and 12.5% of all the teachers...
Table 4. Frequency of teachers’ use of particular groups of programs in education (factor – ICT competence and environment)

<table>
<thead>
<tr>
<th>ICT competences</th>
<th>Office programs, email, search engines, etc.</th>
<th>Programs managing the educational process and electronic content</th>
<th>Specialized educational computer programs</th>
<th>Modern utilities and services (the Internet, mobile devices, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Czech R.</td>
<td>Poland</td>
<td>Czech R.</td>
<td>Poland</td>
</tr>
<tr>
<td>Advanced users</td>
<td>Mean</td>
<td>4.5</td>
<td>4.9</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>1.000</td>
<td>0.363</td>
<td>1.267</td>
</tr>
<tr>
<td>Beginners or intermediate users</td>
<td>Mean</td>
<td>3.8</td>
<td>4.3</td>
<td>3.1</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>1.481</td>
<td>1.061</td>
<td>1.508</td>
</tr>
<tr>
<td>Sig. (M.-W. test)</td>
<td>Z = 1.98 p = 0.048</td>
<td>Z = 2.04 p = 0.041</td>
<td>Z = 3.3 p = 0.001</td>
<td>Z = 2.81 p = 0.005</td>
</tr>
<tr>
<td>Total</td>
<td>Mean</td>
<td>4.0</td>
<td>4.5</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>1.387</td>
<td>1.006</td>
<td>1.501</td>
</tr>
<tr>
<td>Sig. (M.-W. test)</td>
<td>Z = 3.04; p = 0.002</td>
<td>Z = 5.07; p = 0.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: own elaboration
use internet discussions. Every eighth teacher, however, has not used any of the electronic communication instruments yet. Four teachers use one of the social networks and one teacher uses teleconferences for communication with students.

The academic teachers from Cieszyn evaluate their use of communication networks in a different way. Only the answers “messages (e-mail, instant messaging, LMS, etc.)” and “other” are similar to the evaluations formulated by their colleagues from Ostrava. The other responses differ and statistical analyses confirm the significance of these differences.

They have the following values (factor – environment):
- media channels (publishing audio and video files, comments) – 43.5% ($\chi^2 = 5.4; p = 0.02$ and $\Phi = 0.25$),
- internet discussions (blog, forum) – 56.5% ($\chi^2 = 18.0; p = 0.000$ and $\Phi = 0.46$),
- I do not use any – 0.0% ($\chi^2 = 6.1; p = 0.02$ and $\Phi = 0.27$),
- social networks – 30.4% ($\chi^2 = 5.4; p = 0.02$ and $\Phi = 0.25$),
- joint work on documents (wiki, mass smart cards) – 39.1% ($\chi^2 = 11.6; p = 0.0005$ and $\Phi = 0.37$),
- teleconferences – 43.5% ($\chi^2 = 19.5; p = 0.000$ and $\Phi = 0.48$).

The obtained research results seem to confirm that the scholars from Cieszyn use all types of communication networks in their didactic process and apply them...
significantly more often than the academic teachers from Ostrava. This may be determined by the development of the integrated information system of university management, which the respondents use and which, in this way, improves the quality of students’ education.

**Conclusion**

Due to its potentialities and the elimination of territorial barriers, e-learning is a system which increases educational chances of all participants in the educational process. The numerous advantages of e-learning result in its growing use. The possibility to adjust the pace of knowledge acquisition and to decide about the time of undertaking education, as well as using various forms of presentation enhance the effectiveness of learning. Moreover, the time and money saved due to the lack of necessity to travel to the places where classes take place help to strengthen the motivation to learning on one’s own. The use of e-learning is particularly beneficial in the context of the functioning of higher education institutions – the possibility to organize classes for all students without their physical gathering in a particular place; reduced costs; saving the staff’s time; the way of passing knowledge which allows for using the resources in any way by its recipients; easy control over the progress of students’ knowledge acquisition – are just a few reasons why this type of education gains popularity.

The comparative studies carried out in Poland and the Czech Republic seem to confirm differences in the way in which academic teachers evaluate the potentialities of technologies and in which they apply them in educational practice. The effective use of e-learning and modern ICT in universities largely depends on the familiarization with appropriate methodology and knowledge (and the ways of preparing for its application) concerning the use of computers and information technologies. Educators’ attitude to teaching in this mode is equally important. In this situation, special significance should be attributed to preparing and implementing programs which support the education and training of academic teachers in the field of applying ICT and e-learning in educational practice. What might serve as an example of good practice are the undertakings of Eugenia Smyrnowa-Trybulska at the Faculty of Ethnology and Educational Science in Cieszyn (University of Silesia) (2016). Among other things, they comprise shaping competences in the field of designing, conducting, and evaluating e-learning courses, exemplified by the Moodle system.
Acknowledgement
The research resulting in these results received, within the framework of the IRNet project, funding from the People Programme (Marie Curie Actions) of the European Union's Seventh Framework Programme FP7/2007–2013/ under REA grant agreement No: PIRS-ES-GA-2013–612536 and statutory research.

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Burnout among Malaysian Teachers in Implementing Curricular Changes

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Abstract
Burnout has been widely reviewed and studied. However, the relationship between teacher burnout syndrome and curricular reform is rarely studied. Thus, the aim here is to report on the burnout syndrome among teachers during the implementation of the curriculum in Malaysia namely Integrated Secondary School Curriculum (ISSC). Two hundred and sixty four secondary school teachers who were involved in the ISSC program completed the Maslach Burnout Inventory (MBI) and the Secondary School Curricular Change Questionnaire (SSCCQ). The stepwise regression results showed that the emotional exhaustion (EE) predictor is overall workload and time sufficiency, depersonalization (DP) predictor is complexity of the ISSC, and personal accomplishment (PA) predictor is ISSC practicality. Preventing this phenomenon in the school system can lead to better retention rates among teachers.

Keywords: teacher burnout, Malaysia’s Integrated Secondary School Curriculum, emotional exhaustion, depersonalization, personal accomplishment

Introduction
The curricular changes bring a host of problems and challenges that have to be solved effectively (Huang, Cai, Cheng, Kosik, Mandell, Wang, & Fan, 2014). One of the problems resulting from the curricular changes is burnout among teachers. This phenomenon has probably existed at all times and in all cultures
(Kaschka, Korczak, & Broich, 2011) and is conceptualized as resulting from long-term occupational stress, particularly among human service workers, including teachers (Jennett, Harris, & Mesibov, 2003) including commitment to an underlying philosophy of a treatment and professional self-efficacy, were explored. Teachers using one of two different treatment approaches to autism participated: those using Applied Behavior Analysis (n = 34. An indication of the size of the burnout problem can be seen in a representative survey carried out by Taylor Nelson Sofres (TNS) Emnid in December 2010, which showed that 12.5% of all the people working in Germany felt stressed in their job (Kaschka, Korczak, & Broich, 2011). In the field of education, the rate at which teachers leave the profession is significantly higher than in other professions (Minarik, Thornton, & Perreault, 2003). Almost 50% of teachers leave their career before they attain their sixth year of teaching (Ingersoll & Smith, 2004). The situation worsens as the number of teachers who left within the first five years ranges from one third to a half (Hanushek, 2007; Ingersoll & Smith, 2003). Most reasons and factors are associated with a lack of administrative support (Blasé, Blasé, & Du, 2008; Lambert, McCarthy, Gilbert, Sebree, & Steinly-Bumgarner, 2006) and an excessive number of tasks (Brown, 2005), which can make teachers suffer from burnout. As a consequence, teacher shortages will lead to an increase in class size and the teaching and learning process will become ineffective.

In this study, the curriculum called Integrated Secondary School Curriculum (ISSC) was introduced to the old curriculum in Malaysia. Gomes (1991), Mukundan and Ahour (2011), Suseela (1994) and Toh (1991) reported that teachers had problems that may lead to burnout. Accordingly, there was a rapid increase in the number of senior teachers applying for early optional retirement due to stressful working conditions (Minarik et al., 2003). As subsequent thoughts about leaving one’s job and actual leaving are significant predictors of teacher burnout (Jackson, Schwab, & Schuler, 1986) especially in human service occupations, but empirical data about burnout are relatively scarce. We report the results of a study designed to test several hypotheses about the burnout phenomenon. Burnout is considered as a three-component syndrome of emotional exhaustion, depersonalization, and feelings of low personal accomplishment. Burnout was hypothesized to be associated with both unmet employee expectations and job conditions. Hypothesized consequences of burnout included and this phenomenon should present itself more prominently after the implementation of the ISSC, there is a need to look into a possible relationship between teachers burnout and the implementation of the ISSC itself. Finally, it has to be pointed out that while teacher burnout has been a much talked about topic, there is little empirical evidence from the
Asian context, particular from Malaysia. Thus, the presented study investigated the relationship between burnout among Malaysian teachers and the curricular changes. It was hypothesized that there was a positive correlation between ISSC and burnout symptoms.

**Research Focus**

The presented study is an exploratory attempt to investigate burnout among Malaysian teachers in a particular context, i.e., the implementation of a major curricular change. More specifically, this study attempts to investigate a possible predictor that contributes to teacher burnout during the implementation of the ISSC by first describing the burnout level in the teachers and secondly, by investigating possible predictors among 20 curricular change implementation variables and the three subscales of burnout, namely emotional exhaustion (EE), depersonalization (DP) and personal accomplishment (PA).

**Research Methodology**

The presented study comprised 264 teachers (female, n = 232; male, n = 32) teaching in forms 3, 4 and 5. The sample comprised 188 teachers (71.2%) who were under 40 years of age and 76 teachers (28.8%) over 40 years of age (average age = 35.7). In terms of the ISSC teaching experience, 55 teachers (20%) had up to 3 years of experience, and 209 teachers (79.2%) had over 3 years of experience. The instruments used in this study were the MBI and SSCCQ. The MBI consists of 22 items and each is rated for its intensity. The intensity is rated from 1 (very mild and barely noticeable) to 7 (major and very strong). The respondent scores 0 (zero) if the feeling or attitude described is never experienced. Item scores are summed to obtain subscale scores. The mean for each of the subscales can also be found. The SSCCQ is a four-section self-administered survey questionnaire. Section A consists of nine items, designed to provide information on respondents’ background, such as gender, educational qualifications, length of teaching experience and preferences for teaching. Section B consists of 30 items on the 15 variables of the curricular change implementation. Section C is the MBI and section D consists of three items on the remaining three curricular change implementation variables. In addition, section D also contains one open-ended item asking respondents to list three of the most problematic hindrances to their implementation of the ISSC.
There is another open-ended question soliciting respondents’ comments on the implementation of the ISSC. There were 20 curricular changes implementation variables, of which 3 (gender, ISSC implementation clarity and ISSC implementation flexibility) were treated as nominal variables while 15 other variables were treated as interval data variables. The variables were chosen for three reasons. Firstly, an initial survey was carried out on fifteen form 3, 4 and 5 teachers. The teachers were interviewed and asked to list 10 variables they found most disturbing in the implementation of the ISSC. Secondly, the variables which repeatedly surfaced in the review of the literature on ISSC implementation as problematic ones were given priority. Thirdly, if a variable was found to be related to both teacher burnout and curricular change implementation in the literature review, it was also given priority.

The SSCCQ was expert-validated. The Cronbach α reliability coefficient was 0.88 for EE, 0.81 for DP and 0.72 for PA. The subscales showed good internal consistency. T-test analysis and stepwise multiple regressions were used to analyze the relationship between the three burnout subscales and the variables. The analyses used depend on the type of independent variables (nominal or interval data). T-test analysis was used for the nominal independent variable only, whereas stepwise multiple regressions were applied to all the 20 independent variables.

**Research Results**

**Level of Burnout**

The scores of the whole sample for EE, DP and PA burnout were examined in terms of the percentage of teachers in the low, moderate and high level of burnout for the three subscales. This was achieved in the categorization of MBI scores by Maslach and Jackson (1981). As can be seen in Table 1, 20.1% of the teachers in the sample showed a lower level for EE burnout, 46.2% showed a moderate level and 33.% a high level. For DP burnout, 31.4% showed a lower level and 29.9% a high level. For PA burnout, the figures are 12.1%, 33.0% and 54.9%, respectively.

Based on the above results, the percentage of high-burnout teachers implementing the ISSC was the highest for the PA subscale and the lowest for DP. The results also showed that the percentage of low-burnout teachers was the lowest for PA and the highest for DP. It is, thus, pertinent to note that while the sample registered the highest mean for EE, a higher proportion of the teachers were burnt out in the PA subscales than those in the other two subscales.
Table 1. Percentage of Malaysian Teacher Sample (N=264) in the low, moderate and high level Burnout based on Maslach’s Categorization of Scores

<table>
<thead>
<tr>
<th>MBI Burnout Subscale</th>
<th>Range of Experience Burnout</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low (Lower third)</td>
<td>20.1%</td>
<td>46.2%</td>
<td>33.7%</td>
</tr>
<tr>
<td>EE</td>
<td>Moderate (Middle third)</td>
<td>31.4%</td>
<td>38.6%</td>
<td>29.9%</td>
</tr>
<tr>
<td>DP</td>
<td>High (Upper third)</td>
<td>12.1%</td>
<td>33.0%</td>
<td>54.9%</td>
</tr>
<tr>
<td>PA</td>
<td>Total</td>
<td>1.9%</td>
<td>86.0%</td>
<td>12.1%</td>
</tr>
</tbody>
</table>

Using Maslach and Jackson’s (1981) criteria while considering all the three subscales together, it was found that 1.9% of the teachers were at the lower level for all the three subscales, 86.0% were at the moderate level of burnout and 12.1% were at the high level of burnout. This means that as many as 12.1% of the teachers in the sample were deemed to experience an overall high burnout.

Differences of Burnout with Two sub-groups of the Nominal Independent Variables

T-test was used to test for significant difference in the mean scores for the EE, DP and PA burnout of the two sub-groups of the nominal independent variables. Table 2 shows the results.

Table 2. T-test Comparisons of Mean Burnout scores by Nominal Independent Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>EE</th>
<th></th>
<th>DP</th>
<th></th>
<th>PA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (±Stddev)</td>
<td>P-Value</td>
<td>Mean (±Stddev)</td>
<td>P-Value</td>
<td>Mean (±Stddev)</td>
<td>P-Value</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3.71 (±1.25)</td>
<td>0.54</td>
<td>2.57 (±1.15)</td>
<td>0.03*</td>
<td>2.71 (±0.61)</td>
<td>0.50</td>
</tr>
<tr>
<td>Female</td>
<td>3.86 (±1.24)</td>
<td></td>
<td>2.06 (±1.27)</td>
<td></td>
<td>2.63 (±0.84)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 40 years</td>
<td>3.83 (±1.28)</td>
<td>0.89</td>
<td>2.28 (±1.29)</td>
<td>0.00*</td>
<td>2.71 (±0.84)</td>
<td>0.01*</td>
</tr>
<tr>
<td>≥ 40 years</td>
<td>3.85 (±1.13)</td>
<td></td>
<td>1.74 (±1.09)</td>
<td></td>
<td>2.44 (±0.73)</td>
<td></td>
</tr>
<tr>
<td>ISSC Teaching experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 3 years</td>
<td>3.79 (±1.43)</td>
<td>0.76</td>
<td>2.27 (±1.37)</td>
<td>0.37</td>
<td>2.78 (±0.75)</td>
<td>0.17</td>
</tr>
<tr>
<td>≥ 3 years</td>
<td>3.85 (±1.19)</td>
<td></td>
<td>2.09 (±1.23)</td>
<td></td>
<td>2.60 (±0.83)</td>
<td></td>
</tr>
</tbody>
</table>
As shown in Table 2, the male teachers have a DP burnout mean of 2.57 and standard deviation of 1.15, whereas the female teachers have a DP burnout mean of 2.06 and standard deviation of 1.27. The p-value of 0.03 is significant at p < 0.05. Hence, the results show that there is a significant difference between the DP burnout mean of the male and female teachers. The results also show that there is no significant difference between the EE and PA burnout means of the male and female teachers. As far as age is concerned, the teachers aged below 40 and over 40 are significantly different in DP and PA (p values 0.00 and 0.01 respectively), but not in EE burnout (p value 0.89), while for ISSC teaching experience, there is no difference between the teachers with more than 3 years of ISSC experience compared to the teachers with less than 3 years of ISSC experience in all the three subscales (p values 0.76, 0.37 and 0.17 respectively for EE, DP and PA).

Table 2 also shows that there is no significant difference between the group of teachers that were of the opinion that the implementation of ISSC was clear and the teachers that thought that the implementation of ISSC was unclear concerning their EE burnout. However, the two groups differ significantly for the other two subscales. The last nominal variable, which is ISSC implementation of flexibility, on the other hand shows that the two groups are significantly different in all the three burnout subscales.

**Result of Stepwise Regression**

Three sets of stepwise multiple regression analysis were carried out using EE, DP and PA burnout as criterion variables and all the variables (20) as predictors. For each of the burnout subscales, the regression method employed allows for a prediction equation for those burnout subscales to be formulated by choosing
one component at a time, first choosing the component that is the best predictor. The variables were then added step-by-step until no other variables would make a significant contribution to the prediction equation. For the inclusion of variables in this stepwise mode, the minimal F-value was 0.05 and the tolerance level was 0.0001.

Table 3 presents the results found to be significant in the step-wise regression analysis using EE burnout as the criterion variable and all the variables as predictors.

**Table 3. Stepwise Regression Analysis of Emotional Exhaustion (EE) Burnout as Criterion**

<table>
<thead>
<tr>
<th>Significant Predictor Variables</th>
<th>Multiple R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Workload</td>
<td>.41</td>
<td>.17</td>
<td>.16</td>
<td>.24</td>
</tr>
<tr>
<td>Time Sufficiency</td>
<td>.46</td>
<td>.21</td>
<td>.04</td>
<td>.19</td>
</tr>
<tr>
<td>ISSC Flexibility</td>
<td>.49</td>
<td>.24</td>
<td>.02</td>
<td>.13</td>
</tr>
<tr>
<td>ISSC Complexity Implementation</td>
<td>.51</td>
<td>.26</td>
<td>.01</td>
<td>.14</td>
</tr>
<tr>
<td>Collegial Support</td>
<td>.53</td>
<td>.28</td>
<td>.01</td>
<td>.12</td>
</tr>
</tbody>
</table>

As seen in Table 3, the overall workload is the best single predictor of EE burnout and accounts for about 17% of the total variance of EE burnout. The table also shows that time sufficiency together with overall workload account for about 21% of the total variance of EE burnout. When the third predictor, ISSC flexibility, is added to the prediction equation, the total variance accounted for is about 24%. The inclusion of the last two predictors, i.e., ISSC complexity and collegial support account for approximately another 4% of the total variance. The remaining 72% of the total variance of EE burnout is not accounted for.

Table 4 presents the results found to be significant in the stepwise regression analysis using DP burnout as criterion variable and all the variables as predictors.

**Table 4. Stepwise Regression Analysis using Depersonalization (DP) Burnout as Criterion**

<table>
<thead>
<tr>
<th>Significant Predictor Variables</th>
<th>Multiple R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISSC Complexity Implementation</td>
<td>.28</td>
<td>.08</td>
<td>.79</td>
<td>.24</td>
</tr>
<tr>
<td>ISSC Flexibility</td>
<td>.33</td>
<td>.11</td>
<td>.02</td>
<td>.16</td>
</tr>
<tr>
<td>Support from Principal</td>
<td>.36</td>
<td>.13</td>
<td>.01</td>
<td>.16</td>
</tr>
<tr>
<td>Gender</td>
<td>.39</td>
<td>.15</td>
<td>.01</td>
<td>-.13</td>
</tr>
</tbody>
</table>
ISSC complexity implementation was the best single predictor of DP burnout and it accounted for about 8% of the total variance. Together with ISSC flexibility, the total variance accounts for about 11% of DP. Another 2 variables that contribute significantly to the variance of DP burnout are support from principal and gender. As can be seen in the above table, when those predictors are added to the prediction equation, the total variance accounted for is about 15%.

As indicated in Table 5, ISSC practicality is the best single predictor of PA burnout and alone accounts for about 9% of the total variance of PA burnout. The data also show that ISSC conceptual clarity contributes to about 3% to the total variance of PA burnout. Three other significant predictors found are ISSC implementation-clarity, overall workload and sufficiency of physical amenities, which contributes to about 1% of the total variance of PA burnout. Together, all the five predictors account for about 15% of the total variance of PA burnout.

Table 5. Stepwise Regression Analysis Using Personal Accomplishment (PA) Burnout as Criterion

<table>
<thead>
<tr>
<th>Significant Predictor Variables</th>
<th>Multiple R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practicality</td>
<td>.30</td>
<td>.09</td>
<td>.08</td>
<td>.20</td>
</tr>
<tr>
<td>Conceptual Clarity</td>
<td>.35</td>
<td>.12</td>
<td>.03</td>
<td>.15</td>
</tr>
<tr>
<td>Implementation Clarity</td>
<td>.37</td>
<td>.13</td>
<td>.01</td>
<td>.14</td>
</tr>
<tr>
<td>Overall Workload</td>
<td>.39</td>
<td>.14</td>
<td>.01</td>
<td>-.18</td>
</tr>
<tr>
<td>Physical Amenities</td>
<td>.41</td>
<td>.15</td>
<td>.01</td>
<td>.13</td>
</tr>
</tbody>
</table>

As in the case of both EE and DP burnout, a large portion of the variance (85%) is unaccounted for. It appears that although the above five predictors account for about 15% of the total variance of PA burnout, there may be other variables which have to be considered when one attempts to predict the PA burnout of the teachers of forms 3, 4 and 5 in implementing curricular change in national secondary schools.

**Discussion**

As indicated in this paper, approximately one-third of the teachers suffered from burnout to a high degree for both the EE and DP subscales and more than half of the teachers suffered from burnout to a high degree in terms of PA (Table 1). In terms of EE burnout, out of 17 variables, 12 variables show a significant
relationship in Pearson product-moment correlation analysis. The variables are (i) overall workload, (ii) time sufficiency, (iii) non-teaching task hampering, (iv) ISSC complexity implementation, (v) salary sufficiency, (vi) handling curriculum and co-curriculum duties, (vii) clerical workload, (viii) diversity of students, (ix) collegial support, (x) sufficiency of teaching material, (xi) effectiveness of training and (xii) sufficiency of physical amenities. Out of these 12 variables, 4 variables appear as predictors in the stepwise multiple regressions, which are (i) overall workload, (ii) time sufficiency, (iii) ISSC complexity implementation and (iv) collegial support.

The result (Table 2) shows that there are significant differences between two sub-groups: the teachers that think that ISSC implementation is flexible (mean score 3.62) and the teachers that think that ISSC implementation is not flexible (mean score 4.39) in all the three burnout subscales and it means that ISSC flexibility is significantly related to the burnout subscales and in line with the results in stepwise multiple regression.

These results show that out of 20 variables, overall workload, time sufficiency, ISSC flexibility, ISSC complexity implementation and collegial support significantly contribute to the variance of EE burnout. This is not surprising that these variables are predictors of EE burnout, as by definition, EE burnout refers to feelings of physical and emotional exhaustion and ennui as a result of daily work pressure and time constraints.

DP burnout shows a significant relationship with 9 interval data variables, i.e.: (i) ISSC complexity implementation, (ii) clarity of ISSC concept, (iii) effectiveness of training, (iv) ISSC practicality, (v) collegial support, (vi) overall workload, (vii) age, (viii) support from principal and (ix) sufficiency of teaching material, with coefficient values 0.28, 0.23, 0.23, 0.19, 0.19, 0.16, 0.15, 0.15 and 0.15, respectively. In line with this result, 2 variables that are ISSC complexity implementation and support from principal are predictors in stepwise analysis (Table 5). Another 2 variables that appear as predictors, i.e., ISSC flexibility and gender, are nominal independent variables. As mentioned above, ISSC flexibility is related to all the three burnout subscales based on t-test analysis. As far as gender is concerned, only DP burnout shows a significant difference between the male and female teachers.

The results of the stepwise multiple regression analysis indicate the predictors of PA: ISSC practicality, conceptual clarity, implementation clarity, overall workload and physical amenities (Table 5). These variables, except implementation clarity, were found to have a significant relation in correlation analysis. The coefficients values are 0.30, 0.29, 0.15 and 0.15, respectively. Consistent with stepwise analysis,
the implementation clarity variable shows a significant difference between two sub-groups of teachers: the teachers who think that ISSC implementation is clear and those who think that ISSC implementation is not clear.

Only the ISSC teaching experience variable, which shows no association with any of the three subscales of burnout and our findings, is consistent with the study by Bayani, Bagheri and Bayani (2013), which found no difference in burnout between teachers with less teaching experience and teachers with more teaching experiences. These findings are inconsistent with the study of Duli (2016) and also Tijdink, Vergouwen and Smulders (2014). One possible reason is the teachers in this study do not differ much in experience with the new ISSC implemented in the school system of Malaysia. Another possible explanation for these findings is that the teachers, both novices and veterans, were having difficulty with the implementation of the change for some reason or another.

The presented study indicates that teacher burnout is related to the ISSC implementation, bringing with it several implications. First, this finding signifies that there is a need to be cautious when introducing curricular changes in the future. Serious considerations have to be made before a decision to adopt a curricular change in an attempt to avoid teacher burnout. For example, teachers’ job scopes or teaching duties should be designed to be more focused, i.e., they should include either curriculum or co-curriculum duties, but not together. Another consideration is to reduce non-teaching tasks such as landscaping or supervising gardeners. Furthermore, it is recommended that both pre-service and in-service teachers should attend training for coping with teacher burnout.

Conclusions

To summarize, the results of the presented study suggest that overall workload is central to the other variables. As in previous studies, the three components of burnout are related to the work stress caused by overall workload (Steinhardt, Smith Jaggars, Faulk, & Gloria, 2011). It seems appropriate for the curricular change planners to ensure that “something is taken away every time something is added”. This is to ensure that the curriculum does not become a “non-subtractive” one. Ultimately, our findings may be useful in creating intervention strategies of coping with burnout among teachers especially those who face curricular changes.
References


Abstract
Building professional identities of student teachers at the beginning of their vocational education and professional training provides opportunities to explore diversity of practice and provide external support. In the available literature, there is only a small number of studies that explore the professional identity of pre-service and student teachers. The main problem of this research is to examine self-reported attitudes toward student teachers’ professional identity dimensions. The second aim of the presented study was examining the reliability and concurrent validity of the Student Teachers Professional Identity Scale (Fisherman & Abbot, 1998), which was used for the first time in Serbia. The initial sample of respondents consisted of 158 students from the Faculty of Pedagogical Sciences. Results indicate that university students perceive teaching roles more as a specific job and not as a profession. They are goal-directed towards their job as teachers and perceive their practice as a part of their studies and not as a result of their professional identity development as teachers. The mentioned scale (for one-factor solution with the satisfactory criterion of confirmatory factor analysis) obtained very good reliability (α = .935) and concurrent validity indicators and values. Researching professional identity at early career stages can help educators to emphasize the multidimensionality and complexity of the teaching profession.

Keywords: student teacher, professional identity, factor analysis, concurrent validity
**Introduction**

Teacher educators have been invited “to recreate the space for construction of an individual, meaningful, resilient professional identity underpinned by strong beliefs and values” (Smethem, 2007:478). Understanding the initial identity of student teachers can enable teacher mentors to prepare future teachers for a teaching career by facilitating the development of professional identity as in-service teachers.

The professional identity of future teachers has been investigated as a research variable most frequently as a control variable in teacher identity research (Volkmann and Anderson, 1998; Cheung, 2008; Pillen, 2013; Fisherman and Abbot, 1998; Fisherman and Weiss, 2008; Živković, 2012).

Bullough (1997) pointed to identity as a phenomenon critical to the practice of teacher education. According to him, “understanding the pupils’ thinking of learning and teaching themselves as teachers is vital to educators of teachers, because it is the basis for making significance and making decisions” (p. 21). This represents a complex emotional challenge that not only affects teachers’ professional life, but also their personal life (Meijer, Graaf and Meirink, 2011).

Hammerness, Darling-Hammond and Bransford (2005) have identified three common issues in the learning process for learning:

- Student teachers must understand and acknowledge their own biases about teaching based on their many years of experience as students in classroom settings.
- Students need to put theory into practice. This requires a deep understanding of theory and practice before students are trained. Practice is situational-specific, but theory is not.
- Student teachers must take control of their own learning to understand and move in the complexity of teaching.

Meijer et al. (2011) studied the way in which candidates view their own development after a year of teaching work, and what key experiences they help to develop. The authors found that the positive and/or negative experiences of the participants played a significant role in their development. They found that the teachers who had two or more “disillusionment phases” were struggling to devise their role in key experiences. The teachers perceive their development as a permanent upward line, but the data point to falls with internal transformational changes.

Lamote and Engles (2010) found shifts in student thinking after workplace experiences in their research on pre-service teachers’ perceptions of their professional identity at different stages of their education.
Key factors that affect a pre-service teacher candidate's identity development were identified as the following (Lerseth, 2013:121):

- Pre-service teacher candidate's past experiences affect his/her identity development during student teaching.
- Teacher’s views on classroom management impacts on identity development.
- Teacher’s content area knowledge determines how he/she teaches.
- Teacher’s pedagogy or teaching philosophy impacts his/her identity development.
- Teacher’s involvement in or engagement with students affects development (dispositions).
- Pre-service teacher candidate’s identity recognition is critical for identity development.
- Experiencing heightened tension helps shape teacher identity.
- Mentor/Supervisor experience and connections impact on the pre-service teacher candidate’s identity development.

**Method**

The main problem of this research was to examine self-reported attitudes toward student teachers’ professional identity dimensions. The second aim of the presented study was examining of the psychometric characteristics of the STPIS (Student Teachers Professional Identity Scale) (Fisherman and Abbot, 1998), used for the first time in Serbia.

It is expected that there is one plausible and interpretable teacher professional identity dimension that expresses student teachers professional identities characteristics according to the STPIS and research results.

The initial sample of respondents consisted of 158 students from the University of Kragujevac, Faculty of Pedagogical Sciences in Jagodina. The sample comprised 54.1% of the 2nd year teacher program students and 45.9% of those who were the 3rd year and master’s postgraduate teacher program group. The study group consisted of 158 participants, 131 (83%) women and 27 (17%) men (M=1.83, SD=.375), 50 (32%) post-graduate and 108 (68%) under-graduate students (M=1.06, SD=.206). The test distribution for academic achievements is normal (Kolmogorov-Smirnov Z=1.999, p=0.001, M=2.46, SD=.706).

*Student Teacher Professional Identity Scale* (Fisherman and Abbot, 1998)(STPIS). This questionnaire examines students’ attitudes towards being a teacher and how
much they identify with the role of the teacher. The questionnaire examines their confidence about their professional choice, their sense of self-actualization as teachers, and the extent to which they see their profession as a mission and as a challenge. The questionnaire consists of 12 items. The teachers were asked to what extent they agreed with the items on a five-point scale (ranging from 1: complete disagreement, to 5: complete agreement). The total scores ranged from 5 to 60 points. The alpha reliability in the previous study was \( \alpha = 0.93 \) (Fisherman and Abbot, 1993), and in the repeated it was \( \alpha = 0.84 \) (Fisherman and Weiss, 2006).

*Rosenberg Self-Esteem Scale (RSES)* (Rosenberg, 1965; Todorović, 2005). The RSES assesses the overall sense of being capable, feeling worthwhile, and competent. The internal consistency and factor validity of the Serbian version of the RSES were shown to be high (Todorović, 2005). It consists of 10 items, and the degree of self-esteem for each item is rated on a 7-point Likert scale (range: 10–77). The internal reliability of the presented study: Cronbach’s alpha coefficient \( \alpha = 0.78 \).

*Maslach Teachers Burnout Inventory-Educators Survey (MBI-ES)* (Maslach, 1986). This scale consists of 22 items. Generally speaking, in our sample of teachers, the instrument shows satisfactory metric characteristics (Živković and Grozdanović, 2015). Reliability was determined by Cronbach’s alpha coefficient. The internal reliability of the questionnaire is over 0.60 (Cronbach’s alpha coefficient \( \alpha = 0.604 \), with standardization value of \( \alpha = 0.633 \)).

*Warwick–Edinburgh Mental Well-Being Scale (WEMWBS)* (Tennant, Hiller, Fishwick, Platt, Joseph, Weich, Parkinson, Secker and Stewart-Brown, 2007). The WEMWBS comprises 14 positively phrased items, which measure positive affect, psychological functioning and interpersonal relationships. Each item is scored (based on experience over the previous 2 weeks) on a 5-point Likert-style scale from ‘none of the time’ (1) to ‘all of the time’ (5). The overall score is the sum of each item score, giving a possible summary score of 14–70; higher scores indicate higher levels of mental well-being (Tennant et al., 2007). The calculated Cronbach’s Alpha was \( \alpha = 0.83 \).

*Cheung Teacher Professional Identity Scale* (Cheung, 2008). Initial set consisted of 41 items. After determining the psychometric characteristics, the final scale included 18 items (on a 5-point Likert-style scale), which possessed good psychometric characteristics (Cronbach’s Alpha \( \alpha = 0.83 \)). In our study (Živković, 2013), the reliability calculated for 18 items reached \( \alpha = 0.87 \).

*Resilience Scale–RS14* (Wagnild & Young, 1993). In order to provide clinicians and researchers with a shorter instrument for reducing the burden on participants, a short version of RS (RS-14) (Vagnild, 2009) was developed. Cronbach’s alpha of the RS-14 was reported to be excellent (\( \alpha = 0.93 \)) and it correlates strongly (\( r = 0.97 \))
with the original RS (Wagnild, 2009a). In the presented study, Cronbach’s Alpha was $\alpha=.84$. The survey was conducted anonymously and voluntarily in the Faculty of Education in Jagodina. The translation of the STPIS from English into Serbian was accomplished by a professional translator. The aim of the translation was not to achieve literal or syntactic equivalence, but to maintain the original denotation and connotation of items.

Cronbach’s alpha coefficient, the test-retest correlation coefficient, and the correlations between the STPIS and other measures were established by calculating Pearson’s correlation coefficients. Exploratory factor analysis (EFA), parallel analysis (PA) and confirmatory factor analysis (CFA) were conducted by using data at initial assessment. All the statistical analyses used two-tailed tests. For all statistical evaluations, $p$ values under 0.05 were considered indicative of significant differences. The statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) for Windows, version 17.0. For statistical analysis, $p$ values lower than .05 were considered statistically significant. The normality of the total scores of STPIS was evaluated with the use of the Kolmogorov-Smirnov test of normality. Reliability and internal consistency (item-total item correlation) for STPIS were assessed using Cronbach’s alpha coefficient. The correlations between STPIS and self-reported burnout stress, self-esteem, well-being, in-service teacher professional identity and resilience were calculated with the use of Pearson’s correlation coefficient (one-tailed significance).

To evaluate and confirm the factor structures that were found in previous studies (Fisherman and Abbot, 1998; Fisherman and Weiss, 2008), a confirmatory factor analysis was made with the use of STATISTICA. The Goodness-of-Fit Index (GFI), the Adjusted Goodness-of-Fit Index (AGFI), the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA) were used to evaluate the fit of the models using the following criteria: GFI $> .90$, AGFI $> .90$, CFI $> .95$ and RMSEA $< .06$ (Kline, 2005).

**Results**

The calculated mean score for the STPIS was $M=49.19$ (SD=9.47). The overall Cronbach alpha coefficient of the STPIS, $\alpha=0.935$, indicates good reliability. In the item-statistics analysis in Cronbach’s Alpha, if items deleted section, there would be no items that had value over the obtained $\alpha=.935$. KMO (.889) and Bartlett’s test of sphericity ($p=0.000$) had satisfactory values. The Kolmogorov-Smirnov test
of normality $Z=1.264$ ($p=.082$). The test-retest correlation coefficient of the STPIS was 0.83, and that of the STPIS-5 was 0.84.

From the principal component extraction with varimax rotation, one factor emerged. The 12 items in the STPIS were entered into principal component analysis according to the previous study. All the items loaded onto the first component, and factor loadings were greater than 0.68. One-factor solution accounted for 59.83% of the total variance.

Table 1. Results of Exploratory Factor Analysis (EFA) – Component Matrix

<table>
<thead>
<tr>
<th>Component Matrix</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>STPIS6</td>
<td>.870</td>
</tr>
<tr>
<td>STPIS10</td>
<td>.851</td>
</tr>
<tr>
<td>STPIS7</td>
<td>.820</td>
</tr>
<tr>
<td>STPIS9</td>
<td>.815</td>
</tr>
<tr>
<td>STPIS5</td>
<td>.804</td>
</tr>
<tr>
<td>STPIS11</td>
<td>.761</td>
</tr>
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<td>STPIS4</td>
<td>.751</td>
</tr>
<tr>
<td>STPIS3</td>
<td>.751</td>
</tr>
<tr>
<td>STPIS8</td>
<td>.740</td>
</tr>
<tr>
<td>STPIS1</td>
<td>.709</td>
</tr>
<tr>
<td>STPIS2</td>
<td>.701</td>
</tr>
<tr>
<td>STPIS12</td>
<td>.683</td>
</tr>
</tbody>
</table>

Results of parallel analysis (PA) suggested one factor solution (first row of results matrix).

Table 2. Results of Parallel Analysis (PA)

<table>
<thead>
<tr>
<th></th>
<th>Raw Data Eigenvalues</th>
<th>Means</th>
<th>Random Data Eigen.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>7.179979</td>
<td>1.881299</td>
<td>2.130988</td>
</tr>
<tr>
<td>2.</td>
<td>.755297</td>
<td>1.621155</td>
<td>1.784577</td>
</tr>
<tr>
<td>3.</td>
<td>.735777</td>
<td>1.423281</td>
<td>1.547844</td>
</tr>
<tr>
<td>4.</td>
<td>.693463</td>
<td>1.265534</td>
<td>1.376179</td>
</tr>
<tr>
<td>5.</td>
<td>.550129</td>
<td>1.127458</td>
<td>1.227064</td>
</tr>
<tr>
<td>6.</td>
<td>.525474</td>
<td>1.000943</td>
<td>1.096849</td>
</tr>
<tr>
<td>7.</td>
<td>.405448</td>
<td>.880000</td>
<td>.980203</td>
</tr>
</tbody>
</table>
Although EFA and PA strongly support one-factor solution for the STPIS 12 items, confirmatory factor analysis (CFA) obtained unsatisfactory results for Model 1 (12 items) and Model 2 (10 items, items without lowest values of communalities and factor loadings). Model 3 (items 3,4,5,6,7) reached criterion values for RMSEA, GFI, AGFI and CFI (Kline, 2005). Cronbach's Alpha for this one-factor model (named STPIS-5) was α=.882, with 69.78% of total variance explained (59.83% for 12-item STPIS). Correlation with the 12-item version of STPIS (Model 1) r=.996.

Table 3. Summary of Test Statistics for Confirmatory Factor Analysis for STPIS and STPIS-5

<table>
<thead>
<tr>
<th></th>
<th>χ²/p</th>
<th>RMSEA</th>
<th>GFI</th>
<th>AGFI</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model1</td>
<td>6.242/0.351</td>
<td>0.049</td>
<td>0.84</td>
<td>0.76</td>
<td>0.95*</td>
</tr>
<tr>
<td>Model2</td>
<td>5.660/0.011</td>
<td>0.009</td>
<td>0.85</td>
<td>0.76</td>
<td>0.93*</td>
</tr>
<tr>
<td>Model3*</td>
<td>4.487/0.480</td>
<td>0.002*</td>
<td>0.96*</td>
<td>0.90*</td>
<td>0.99*</td>
</tr>
</tbody>
</table>

Note: GFI=Goodness-of-Fit Index; AGFI=Adjusted Goodness-of-Fit Index; CFI=Comparative Fit Index; RMSEA=Root Mean Square Error of Approximation. **Criterion:** *Criteria: GFI > .90, AGFI > .90, CFI > .95, RMSEA < .06 (Kline, 2005).

Model 1:1–12 items (59.83% of variance explained) not satisfactory CFA criterion.

Model 2: 1,3,4,5,6,7,8,9,10,11 items (63.02% of variance explained) not satisfactory CFA criterion.

Model 3: 3,4,5,6,7 items (69.78% variance explained) satisfactory CFA criterion (Cronbach’s Alpha α=.882). Correlation with 12-item version r=.996.

Statistical analysis for STPIS-5. The obtained inter-item correlation for five extracted items shows that all the correlations are over r > 0.40. Cronbach’s Alpha for STPIS-6 α=.882 and the correlation with the 12-item original version of the STPIS is r=.996. There are no items with Cronbach’s Alpha if item deleted value α> .882. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO=.854) and Bartlett test of sphericity (p=0.000) had satisfactory values. Factor analysis (PCA) for STPIS-5 extracted one-factor solution. One factor explains 69.78% of variance.
Table 4. Component matrix for STPIS-5

<table>
<thead>
<tr>
<th>Component Matrix</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am attracted by the work of a teacher.</td>
<td>.889</td>
</tr>
<tr>
<td>I always wanted to be a teacher.</td>
<td>.861</td>
</tr>
<tr>
<td>I think that it will be good for me to be engaged in education.</td>
<td>.850</td>
</tr>
<tr>
<td>When someone says something negative about teachers, I feel hurt.</td>
<td>.814</td>
</tr>
<tr>
<td>Being a teacher is the central part of my life.</td>
<td>.757</td>
</tr>
</tbody>
</table>

Indicators of concurrent validity of the STPIS-5 are shown in Table 5. The STPIS-5 was negatively correlated with the RS-14 and positively correlated with the CTPI, RSES and WEMWBS.

Table 5. Indicators of Concurrent Validity: Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>STPIS-5</th>
<th>RSES</th>
<th>MBS-ES</th>
<th>WEMWBS</th>
<th>CTPI</th>
<th>RS-14</th>
</tr>
</thead>
<tbody>
<tr>
<td>STPIS-5</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RSES</td>
<td>.263*</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MBS-ES</td>
<td>.295*</td>
<td>.047</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEMWBS</td>
<td>.178</td>
<td>-.161</td>
<td>.135</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTPI</td>
<td>.463**</td>
<td>.070</td>
<td>.225*</td>
<td>.144</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>RS-14</td>
<td>-.005</td>
<td>.127</td>
<td>-.185</td>
<td>-.203</td>
<td>-.137</td>
<td>1.000</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

Note: STPIS-5-Student Teacher Professional Identity Scale; RSES-Rosenberg Self-Esteem Scale; MBS-ES-Maslach Burnout Inventory-Educators Survey; WEMWBS-Warwick Edinburgh Mental Well-Being Scale; CTPI-Cheung Teacher Professional Identity Scale; RS-14-Resilience Scale.

Discussion

Although it was used for the first time in Serbia, the questionnaire we used showed satisfactory psychometric indicators in the respondent sample (reliability and concurrent validity). Theoretical and empirical analyses in research dealing with the problem of professional identity of student teachers prove or presuppose possible links of identity with well-being (Kessels, 2010), self-esteem (Joseph and Heading, 2010), burnout stress (Pillen, 2013) and resilience (Pearce and Morrison, 2011; Papatraianou & Le Cornu, 2014). In our sample of respondents and related instruments that measure the mentioned variables, in order to examine
the concurrent validity of the student teacher professional identity scale, values of statistically significant correlations of the STPIS-5 with well-being ($r=.278$), self-esteem ($r=.263$), burnout stress ($r=.295$) and in-service teacher professional identity ($r=.463$) were obtained.

The obtained correlation of resilience and teacher identity is negative and not statistically significant. The obtained negative values of the correlation of resilience and burnout stress (which can be assumed to be significant) indicate the need to examine this relationship in greater detail (regression analysis). The obtained high values of the correlation between the in-service teacher professional identity and student teacher professional identity indicate the need to establish and examine latent dimensions in the explanatory factor and confirmatory factor analysis. All the obtained correlation values were expected and are in line with theoretical assumptions, except for the obtained value of the correlation with burnout stress, which is supposed to be low and negative (Pillen, 2013). Interestingly, a statistically significant correlation of stress with the identity of experienced teachers was obtained ($r=.225$).

The results of this empirical study are in line with Fisherman and Abbot’s (1998) results: university students perceive the teacher’s role more as a specific job and not as a profession. They are goal-directed towards their job as teachers and see their practice as a part of their studies and not as a result of their professional identity development as teachers. The professional identity influences their self-regulation, but separately from ego identity, which means that these students are specifically goal-directed towards their job as teachers (Fisherman and Abbot, 1998). Our one-factor solution, with the 5-item structure, which meets the criteria of confirmatory factor analysis, indicates one dimension: job-orientation (rather than profession-orientation) in the structure of pre-service student teacher professional identity. It is interesting to note that in the previous research into the professional identity of experienced teachers we obtained one prominent factor in the factor loadings of teacher professional identity structure: job-satisfaction (Živković, 2013; Li, 2016).

What teachers initially believe about teaching and learning is vital to education, professional development and is the basis for designing and making decisions, as Bullough (1997) points out.

The data suggests a possible conclusion that what the teacher does should be at the heart of the student teaching experience, but what the teacher is, what they bring with them in terms of philosophy, identity and preconceived notions of learning, affects what they do. Factors beyond the control of pre-service candidates also create an impact on what the teacher does.
Conclusions

Based on the results we can conclude that the student teacher professional identity scale meets the criterion of reliability and concurrent validity. The factor and parallel analysis singled out a one-factor solution (job-orientation). The criteria for confirmatory analysis satisfy the five-item solution, and it is applicable to the sample of respondents in the Republic of Serbia. Research on forming a professional teacher identity is relevant to mentors in the training of future teachers in schools, and their goal is to better understand and conceptualize the support and needs of future teachers.

References


Živković, P., Grozdanović, M. (2016). Factor Analysis of Teacher Burnout Scale. *Teacher*, 16(2), 6–16
Abstract
The purpose of the study was to determine on which domain teachers focus most during additional professional support for children with special needs and what differences there are among the groups. A total of 1863 professionals were included in the study, seven different groups of professionals were compared regarding their work on learning, motivational and social-emotional domain. Results reveal that support for students with special needs is mainly focused on the learning domain, moderately on the motivational domain and little on the social-emotional domain, with significant differences between professionals. In the social-emotional domain significant decreases occur among subject teachers, professionals in other job positions and principals.

Introduction
Teachers and their work with students during additional professional support (APS) or additional educational support have a great impact on achievements, motivation, executive functions and inclusion of students with special needs in the educational environment (Cohen, Manion and Morrison, 2014). Lifelong competences like learning to learn and social competences are very important (Deakin Crick, Stringher and Ren, 2014; McCormick, 2006; Rychen & Salganik, 2003). Teachers should support students with special needs to develop these com-
petences, because they are transferable to other environments and circumstances, can have lifelong effects and enable students to become more autonomous, self-determined and empowered (Soresi, Nota and Wehmeyer, 2011; Deakin et al., 2014).

Studies show that students with special needs can and should be taught about specific competences such as motivation, social-emotional competences and teaching of thinking and metacognition, which can be achieved with the use of specific methods such as instruction scaffolding, cognitive coaching and cooperative learning, together with high-quality teaching in key subject areas (Howie, 2011). Studies also indicate that interventions related to various domains, e.g., learning domain, motivational domain and social-emotional domain, are important and support students with special needs (Archer & Hughes, 2011; Baker et al., 2009; Bowles et al., 2017; Ennis et al., 2014; Graham et al., 2013; Reid et al., 2013). These are the reasons why professionals who work with students with special needs should focus on specific methods and strategies that would support and develop essential knowledge, skills and attitudes related to basic skills and empower students with special needs to use these competences in multiple contexts (Archer & Hughes, 2011).

However, few studies analyse the use domains employed by various professionals who work with special needs students in mainstream education. Some studies focus on effective inclusive practice (e.g., Choate, 2000; Gee, 2002; McLesky et al., 2001) and investigate the effectiveness of practices in general, but they do not analyse the methods and domains used by different professionals in mainstream education, which would reflect the current state of support for students with special needs, which is important for many reasons, e.g., planning of instruction, professional development of teachers, education policy of learning to learn, improvement of effective learning, standard achievement, etc. With this research our aim was to fill this gap, so the purpose of the study was to analyse: a) professionals’ support in three domains: learning domain, motivational domain and social-emotional domain; b) which of the three domains are used most often; and c) what the differences are in the use of domains between various profiles of professionals who implement additional professional support for children with special needs.

The data collection and basic analyses were carried out as part of a national evaluation study of different forms of additional professional support assigned to children with special needs according to the Placement of Children with Special Needs Act (Vršnik Perše et al., 2016). In this paper, we present additional analyses related to differences regarding the job positions of the teachers providing additional professional support.
Method

Participants
The participants in the study were various professionals who implement additional professional support for children with special needs in basic/primary education in Slovenia. We included 1863 professionals who provide additional professional support for students with special needs, of whom 94.2% were females and 5.6% were males. The teachers who teach in the 6th to 9th grades and are teachers of specific subjects (maths, languages, geography, etc.) comprised 40.3% (N = 750) of them, while 21.1% (N = 392) were teachers who provided additional professional support (educated as special education teachers, inclusive pedagogues, pedagogues, social pedagogues), 14% (N = 263) were teachers who teach in the 1st to 5th grades and are elementary teachers, 11.6% (N = 217) were mobile teachers providing additional professional support (mostly educated as special education teachers), 6.1% (N = 113) were school counsellors and 5.6% (N = 105) of the teachers were in the “other” category. This category included: librarians, a combination of various profiles like psychologists and pedagogues, school counsellors and subject teachers, escorts of children with special needs, etc. The smallest share of professionals providing additional support was principals (head teachers) (1.2%, N = 23).

Instrument
The instrument was developed for the purpose of a national evaluation study on additional professional support for children with special needs (Vršnik Perše et al., 2016). The instrument included eight sets of questions regarding: a) demography; b) specifics of identification and support of children with difficulties but without the special educational needs status, c) planning and implementation of additional professional support (APS); d) evaluation of APS; e) APS for twice-exceptional children (talented with special needs); f) effect assessment of APS; g) professional development of APS teachers; h) teachers’ opinions and beliefs about the APS system.

In the results section, data are presented as results of the question: Assess your work with student during APS related to specific domain. The question was assessed by professionals who implement APS using a five-item Likert-type scale.

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2 Basic education in Slovenia is for children aged from 6 to 15. Basic education is compulsory and consists of three cycles: the first and second cycles are primary education, while the third cycle is lower secondary education.
The scale ranged from 1 to 5 (1 – none, 2 – low, 3 – moderate, 4 – high, 5 – very high). The questionnaire was pilot-tested on a smaller sample of APS teachers, classroom teachers and school counsellors in two basic schools and two upper secondary schools. After the pilot testing, some suggestions for improvements in terms of the clarity and length of the instrument were included and the final version of the instrument was prepared as an e-version.

**Data collection and analysis**

Data collection was done using the e-version of the instrument with the collaboration of the research team from the Faculty of Education at the University of Maribor and the Ministry of Education, Science and Sport in Slovenia, which financed the initial study. Data were collected in collaboration with the schools that participated in the study; each school had one coordinator for the study. The data collection was anonymous. The whole data collection process was carried out during November and December 2015.

Analysis of the data for the results presented in this paper was performed in 2017 and was only partially presented in the study report, which was finished in September 2016 (Vršnik Perše et al., 2016). Data in the initial study were analysed at the level of descriptive statistics (mean, standard deviation, frequencies). Here we also present some further analysis of differences between groups regarding the learning domains. Analysis was made with one-way ANOVA, post-hoc tests and retested with the Kruskal Wallis test for one domain where homogeneity of variances is not met. Effect sizes are also presented.

**Results**

This section presents the results for the domains of APS related to learning to learn and differences among professionals in using these domains during APS regarding job position.

The results presented in the table indicate that most often the teachers of APS implement the learning domain (M = 4.44; SD = 0.72), with more than half (55.1%) of the teachers of APS expressing a very high level of work in this domain and 36.5% expressing a high level of work in the learning domain. Most of the support is focused on this domain, as 91.6% of the teachers express a high or very high focus on learning during APS. An important part of learning to learn is motivation. However, the results indicate that 31.2% of the teachers express a very high level of work and 47.8% express a high level of work in the motivational
What are the Differences in the Focus on Various Domains

For the social-emotional domain, the results are even lower, with 19.4% expressing a very high level of work, 37.0% expressing a high level of work and 33.1% of the teachers expressing a moderate level of work in this domain. A total of 10.6% express low or no focus on the social-emotional domain, which represents almost 200 teachers in our sample who do not use this support in working with children with special needs.

Table 1. Descriptive statistics for the domains of APS

<table>
<thead>
<tr>
<th>Domains of APS</th>
<th>None (f %)</th>
<th>Low (f %)</th>
<th>Moderate (f %)</th>
<th>High (f %)</th>
<th>Very high (f %)</th>
<th>Total (f %)</th>
<th>M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning domain</td>
<td>0.4</td>
<td>1.6</td>
<td>6.5</td>
<td>36.5</td>
<td>55.1</td>
<td>100.0</td>
<td>4.44 (0.72)</td>
</tr>
<tr>
<td>Motivational domain</td>
<td>0.8</td>
<td>2.3</td>
<td>18.0</td>
<td>47.8</td>
<td>31.2</td>
<td>100.0</td>
<td>4.06 (0.81)</td>
</tr>
<tr>
<td>Social-emotional domain</td>
<td>1.8</td>
<td>8.8</td>
<td>33.1</td>
<td>37.0</td>
<td>19.4</td>
<td>100.0</td>
<td>3.63 (0.95)</td>
</tr>
</tbody>
</table>

Note: N = 1863.
Distribution of the variables indicate that all the three variables are skewed left, with highly left skewed Learning domain (SC = -1.39, SE = 0.57; KC = 2.42, SE = 0.11), moderately left skewed Motivational domain (SC = -0.73, SE = 0.57; CC = 0.72, SE = 0.11) and moderately left skewed Social-emotional domain (SC = -0.33, SE = 0.57; CC = 0.26, SE = 0.11).

domain (the total for very high and high in motivational domain is 79.0%). For the social-emotional domain, the results are even lower, with 19.4% expressing a very high level of work, 37.0% expressing a high level of work and 33.1% of the teachers expressing a moderate level of work in this domain. A total of 10.6% express low or no focus on the social-emotional domain, which represents almost 200 teachers in our sample who do not use this support in working with children with special needs.

Table 2. Differences in domains regarding the job positions of APS teachers

<table>
<thead>
<tr>
<th>Domains of APS</th>
<th>Job position</th>
<th>Numerus</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Levene test of homogeneity</th>
<th>Analysis of variance</th>
<th>Effect size</th>
<th>Kruskal Wallis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning domain</td>
<td>School counsellor</td>
<td>111</td>
<td>4.06</td>
<td>0.97</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>APS teacher</td>
<td>389</td>
<td>4.50</td>
<td>0.66</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mobile APS teacher</td>
<td>215</td>
<td>4.31</td>
<td>0.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elementary teacher</td>
<td>260</td>
<td>4.56</td>
<td>0.63</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subject teacher</td>
<td>733</td>
<td>4.49</td>
<td>0.62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Principal</td>
<td>23</td>
<td>4.39</td>
<td>0.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other job positions</td>
<td>104</td>
<td>4.34</td>
<td>0.82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: N = 1863.
A one-way ANOVA was conducted to determine differences among various groups of professionals who implement additional professional support for students with special needs. The participants were classified in seven groups according to job positions. The data was non-normally distributed in all the three domains and there was not homogeneity of variances in the learning domain as assessed with the Levene test (p < 0.0005) and the Welch test (p < 0.0005). However, the assumption of homogeneity of variances is met for the motivational domain and social-emotional domain, so we decided to run ANOVA anyway and also to do the retest with the non-parametric Kruskal-Wallis test.

### Results for the learning domain

For the learning domain, the results of ANOVA indicate the CWWS score was statistically significantly between different groups ($F (6, 1828) = 9.07, p < .0005, \eta^2 = 0.17$). The same result is confirmed with the Kruskal Wallis test ($H (6) = 30.40; p < .0005$). The CWWS score increases from the school counsellors ($M = 4.06, SD = 0.97$), to mobile APS teachers ($M = 4.31, SD = 0.90$), to teachers in other job positions ($M = 4.07, SD = 0.75$).
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positions ($M = 4.34$, $SD = 0.82$), to principals ($M = 4.39$, $SD = 0.89$), to subject teachers ($M = 4.49$, $SD = 0.62$), to APS teachers ($M = 4.50$, $SD = 0.66$) and to elementary teachers ($M = 4.56$, $SD = 0.63$).

The Games-Howell post hoc test for the learning domain reveals that the mean values increase from the school counsellors to APS teachers and are statistically significant ($0.44$, 95% CI [0.14, 0.73], $p < .0005$), as well as the increase from the school counsellors to elementary teachers ($0.50$, 95% CI [0.20, 0.80], $p < .0005$) and school counsellors to subject teachers ($0.42$, 95% CI [0.14, 0.71], $p < .0005$). The mean values also increase and are statistically significant between the mobile APS teachers and elementary teachers ($0.26$, 95% CI [0.04, 0.47], $p = .01$). No other group differences were statistically significant.

Results for the motivational domain

For the motivational domain, the results of ANOVA show the CWWS score is statistically significantly different between different groups ($F (6, 1806) = 10.01, p < .0005, = 0.18$). The same result is confirmed with the Kruskal Wallis test ($H (6) = 62.81; p < .0005$). The CWWS score increases from the principals ($M = 3.78$, $SD = 0.67$), to subject teachers ($M = 3.90$, $SD = 0.82$), to teachers in other job positions ($M = 4.07$, $SD = 0.75$), to school counsellors ($M = 4.13$, $SD = 0.84$), to APS teachers ($M = 4.18$, $SD = 0.76$), to mobile APS teachers ($M = 4.21$, $SD = 0.79$) and to elementary teachers ($M = 4.21$, $SD = 0.79$). The last two groups have the same mean value.

The Tukey-Kramer post hoc test reveals that the mean values which are statistically significant decrease from the subject teachers to elementary teachers (-0.31, 95% CI [-0.49, -0.05], $p < 0.0005$), from subject teachers to mobile APS teachers (-0.31, 95% CI [-0.50, -0.13], $p < 0.0005$), from subject teachers to ASP teachers (-0.28, 95% CI [-0.43, -0.14], $p < 0.0005$) and from subject teachers to school counsellors (-0.24, 95% CI [-0.48, -0.01], $p = 0.05$). No other group differences were statistically significant in the motivational domain.

Results for the social-emotional domain

The CWWS score was statistically significantly different between the groups $F (6, 1820) = 43.75, p < .0005, = 0.35$. The same result is confirmed with the Kruskal Wallis test ($H (6) = 234.22; p < .0005$). The CWWS score in the social emotional domain increases from the subject teachers ($M = 3.25$, $SD = 0.89$), to principals ($M = 3.39$, $SD = 1.11$), to teachers in other job positions ($M = 3.57$, $SD = 0.94$), to elementary teachers ($M = 3.70$, $SD = 0.86$), to APS teachers ($M = 3.99$, $SD = 0.86$), to mobile APS teachers ($M = 4.01$, $SD = 0.92$) and to school counsellors ($M = 4.05$, $SD = 0.90$).
The Tukey-Kramer post hoc test for the social-emotional domain reveals statistically significant results related to the subject teachers. Namely, the values decrease from the subject teachers to school counsellors (-0.80, 95% CI [-1.07, -0.54], \(p < 0.0005\)), from subject teachers to mobile APS teachers (-0.76, 95% CI [-0.96, -0.55], \(p < 0.0005\)), from subject teachers to APS teachers (-0.74, 95% CI [-0.91, -0.58], \(p < 0.0005\)), from subject teacher to elementary teachers (-0.45, 95% CI [-0.64, -0.26], \(p < 0.0005\)) and from subject teachers to teachers in other job positions (-0.32, 95% CI [-0.60, -0.04], \(p = 0.01\)).

In the social emotional domain, statistically significant results occur also for the principals, the values decrease from the principals to school counsellors (-0.66, 95% CI [-1.26, -0.06], \(p = .01\)), from principals to mobile ASP teachers (-0.62, 95% CI [-1.19, -0.04], \(p = .03\)) and from principals to ASP teachers (-0.60, 95% CI [-1.17, -0.04], \(p = .03\)).

And finally, in the social-emotional domain, statistically significant results occur also for the professionals in other job positions (POJP), e.g., school librarians. The values decrease from the POJP to school counsellors (-.48, 95% CI [-0.84, -0.12], \(p = .002\)), from POJP to mobile ASP teachers (-0.44, 95% CI [-0.75, -0.12], \(p = .001\)), from POJP to ASP teachers (-0.42, 95% CI [-0.71, -0.13], \(p < .0005\)) and increase from POJP to subject teachers (0.32, 95% CI [0.04, 0.60], \(p = .01\)). No other group differences were statistically significant in this domain.

**Discussion**

**General conclusions**

We can conclude that according to the teachers’ opinions, APS in Slovenia is mainly focused on the learning domain, moderately on the motivational domain and less on the social-emotional domain, although social-emotional functioning is a very important part (and often an issue) and the basis for the successful learning and social functioning of children with special needs in the education environment (Education Council, 2006; Ennis et al., 2014). Work with students with special needs should not be focused primarily on one domain, but should be more balanced between different types of support, which would help student to be successfully included in the classroom and to develop various ranges of skills, including social-emotional skills (Elias, 2004). The quality of APS regarding the social-emotional domain raises concerns as 10.6% of the teachers express low or no focus on this domain. APS in elementary school should be more focused on this domain because social and emotional functioning of any student in ele-
mentary school is very important, even more important if it is a student with special needs. Social and emotional skills are equally important as cognitive skills (Baker et al., 2009; Ennis et al., 2014), so teachers of APS should focus more on the social and emotional domain and empower students with special needs to gain social-emotional skills as they can be transferred to other environments and used in lifelong learning (Reis, McGuire and Neu, 2000), they can also have an impact on student engagement, achievement and wellbeing (Tomlinson, 2014).

Conclusions about the differences between professionals

Significant differences between seven groups of professionals occur in all the three domains.

In the learning domain, the effect size is large (Richardson, 2011). However the smallest among effect sizes in all the three domains. The learning domain is most often used by elementary teachers, APS teachers and subject teachers. A statistically significant increase in the learning domain occurs among the school counsellors and three other groups (APS teachers, elementary teachers and subject teachers), which is an expected result, as school counsellors are usually focused on other areas of support. The CWWS scores also significantly increase between the mobile APS teachers and elementary teachers, which can be explained by the fact that elementary teachers usually have the student in the classroom and are therefore more focused on learning support than mobile APS teachers, who only visit the school a few times a week.

In the motivational domain, all the tests confirm significant differences, the effect size is large. The motivational domain is most often implemented by the elementary teachers, mobile APS teacher and APS teachers. A significant decrease in the use of the motivational domain is revealed in the group of subject teachers and four other groups (elementary teachers, mobile APS teachers, APS teachers and school counsellors), which indicates that subject teachers could be more supportive in motivating students with special needs during APS.

In the social-emotional domain, differences are significant and effect size is large, the results of post-hoc test reveal that differences occur in the group of subject teachers, principals and professionals in other job positions (POJP). Namely, the decrease in CWWS scores is high in comparison to the decrease in other domains. The subject teachers work in the social-emotional domain less than five other groups (school counsellors, mobile APS teachers, APS teachers, elementary teachers and professionals in other job positions), the principals work in the social-emotional domain less than the school counsellors, mobile APS teachers and APS teachers. The POJP work in the social-emotional domain significantly
less than the school counsellors, mobile APS teachers and APS teachers. These results reveal that subject teachers and principals who work with students with special needs and professionals in other job position need interventions in terms of the awareness and importance of the social-emotional domain for each student with special needs as the majority of students with special needs (e.g., with specific learning disabilities) have difficulties in social relationships, they tend not to be accepted by their peers, they often have shortcomings in interactions with peers and adults, they may have lack of age-appropriate social understanding of complex interactions or difficulties in communicating effectively with others (Elias, 2004).

References


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Abstract
People with intellectual disabilities (IDs) are often recognised as suffering from “social exclusion”. Attempts aimed at combating this exclusion include support in finding employment and preparing them for living independently. Unfortunately, for a large group of people with intellectual disabilities the aforementioned strategies of promoting social inclusion are unattainable, and thus alternative areas of social inclusion are sought after. The arts/artistic work may be one of them. Due to the fact that the study was conducted as participatory action research, the main areas of social exclusion of people with intellectual disabilities were exposed. This allowed for attempting to prevent this phenomenon. In this study, artistic work has become a laboratory of social practices toward people with intellectual disabilities and the solutions created in the realm of the arts may serve as an example for designing a normalising model of support for people with intellectual disabilities in other areas as well.

Keywords: intellectual disability, Participatory Action Research, inclusion and belonging, the arts
Introduction

The places where people with intellectual disabilities can engage in artistic work are usually facilities providing day- or full-time care and support – nursing homes, art therapy facilities, centres for people with special needs, and social clubs. According to Bakiera and Stelter, art workshops are found in as many as 91% of art therapy facilities in Poland (Bakiera, Stelter, 2010, p. 150). Artistic activity usually performs a therapeutic function, and therapy through art plays a crucial role in the process of treatment and rehabilitation of people with intellectual disabilities and as such is treated as complimentary to social rehabilitation of people with disabilities. At day care facilities for people with intellectual disabilities art classes are also seen as a way of organising their leisure time. Regardless of whether the artistic practice performs its therapeutic function or is treated only as a leisure activity, it often happens that the resulting work itself is of secondary importance or may even be perceived as waste of undetermined purpose.

For the researcher, exploring the subject of arts/artistic activity stems from the conviction that the artistic work of people with intellectual disabilities may become a strategy for promoting their social inclusion understood as a process of returning to society of individuals as well as entire social groups, in this instance people with intellectual disabilities. The intellectually disabled are often defined as “socially excluded” and the policy of “social inclusion” aims to counter this by the provision of employment opportunities and preparing them for independence. Unfortunately, the above-mentioned methods of social inclusion seem unattainable for a large group of people with intellectual disabilities, and therefore alternative areas of social belonging are sought after (Hall, 2010, p. 48). One of these areas may be the arts/artistic work. Owing to its universal language, it is an opportunity for the voice of the people with intellectual disabilities, initially “weak, shy and helpless,” to be heard (Krzemińska, 2009, p. 574). This may constitute a seed of tolerance and ultimately of social belonging. The prerequisite, however, is that the artistic work becomes legitimate and that it can leave the niche of art with the stigma of being created by the intellectually disabled and as such considered worse.

The issue explored in this study was social and cultural exclusion of people with intellectual disabilities in the area of the arts. The aim of the descriptive and diagnostic research was to identify the main areas of exclusion of the intellectually disabled in the realm of the arts. And the practical and social aim of the research
was to promote artistic work of the intellectually disabled as occupying a certain space in the social and cultural life, by means of which their discrimination in this area can be actively challenged and their social belonging fostered.

**Research Methodology**

**General background of the problem**

The primary aim of the participatory action research was defined as a method of empowering the subjects by utilising their own knowledge in the research process (Whyte, 1991). The main focus of the research are collective and self-reflective research practices which help both parties to properly understand their situation and identify ways to mitigate it. Nowadays the need to conduct participatory action research among people with disabilities, including those with intellectual disabilities, has been increasingly stressed. It results from the need to protect the rights of persons with disabilities as well as from demands for their full inclusion, which would radically change their place in society (cf., Hall, 2010). Participatory action research requires that the role of the person with intellectual disability should be changed from the subject to an active participant in the entire research project, in which they influence the research concerning their life and aimed at improving its quality, according to the principle of participatory action research: “nothing about us without us” (Stack, McDonald, 2014, p. 83). The outcome of the participatory action research, as emphasised by Kemmis and McTaggart (2000, p. 596), should be real and material changes in the studied community as to: what people do, their interactions with the world and others, what they find meaningful and valuable as well as the discourse through which they understand and interpret the world (Kemiss, McTaggart, 2000, p. 596).

Following the guidelines proposed by Kemmis and McTaggart, the presented participatory action research aims to promote changes in the areas outlined in the table below.

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1 The researchers and the subjects, however this traditional division seems to be no longer valid within PAR.
### Table 1. The intended changes

<table>
<thead>
<tr>
<th>Intended Change in the Studied Community Acc. to Kemmis and McTaggart</th>
<th>Intended Change within the Research Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANGE IN WHAT PEOPLE DO</td>
<td>Change in the ways and places in which the artistic work is exhibited and promoted (location, descriptions)</td>
</tr>
<tr>
<td>CHANGE IN HOW THEY INTERACT WITH THE WORLD</td>
<td>Changes in the reception of art created by people with IDs, perception of a person with ID as an autonomous artist</td>
</tr>
<tr>
<td>CHANGE IN WHAT THEY FIND MEANINGFUL AND VALUABLE</td>
<td>Change in the evaluation of art created by people with IDs (with reference to its artistic value and not the artist’s disability)</td>
</tr>
<tr>
<td>CHANGE IN THE DISCOURSE THROUGH WHICH THEY UNDERSTAND AND INTERPRET THE WORLD</td>
<td>Change of the language used to describe art created by people with IDs and showing links between the discourse relating to art created by people with IDs and their perception in the community</td>
</tr>
</tbody>
</table>


## The Committee

Artists with intellectual disabilities, instructors, representatives of cultural institutions and parents were asked to participate in the research project.

**The artists with intellectual disabilities:**

- **Person 1** – an author of several hundred works – drawings and prints; one of the most widely recognised and original representatives of naïve art in the region,
- **Person 2** – a class participant at the community centre for people with special needs, her works are remarkably dynamic,
- **Person 3** – a participant in art therapy classes; creates drawings and linocut prints (mainly with animal motifs),
- **Person 4** – a class participant at the community centre for people with special needs; a self-taught artist with a great creative potential,
- **Person 5** a participant in art therapy classes, the eldest research participant, incapable of verbal communication; the human motif dominates in her works – it is present in most of them,
- **Person 6** – a class participant at the community centre for people with special needs; human beings are the exclusive motif in her works,
- **Person 7** – a class participant at the community centre for people with special needs; a characteristic feature of her artistic work is unusual precision and fondness for neatness and order.
• Person 8 – a class participant at the community centre for people with special needs; his artistic work mostly revolves around daily life.

Instructors:
• Person 8 – secondary school of fine arts graduate, art tutor.
• Person 9 – an instructor in charge of the arts workshop, artist, painting faculty graduate.
• Person 10 – an artist, print-maker, art therapist, special education teacher, art therapy class teacher.
• Person 11 – facility manager, a specialist in management and therapy of emotional disorders.

Family:
• Person 12 – a single mother raising an intellectually disabled son.

A cultural institution representative (as an expert):
• Person 13 – museum employee dealing with non-professional art, including art created by people with intellectual disability, responsible for promoting it at the museum and local communities.

Instruments and procedures
The methods of collecting data in the research were “dictated by action itself”. The data collection methods were as follows:
• participatory observation conducted from the insider’s perspective (Angrosimo, Mays de Perez, 2000, p. 678), in which owing to the undertaken steps it was possible to approach the studied environment involved in the artistic work of people with intellectual disabilities as well as practices employed in promoting this form of art,
• note-taking was a method employed throughout the process, whose role was not only to record the events, but also to interpret them (Have, 2004, p. 119),
• unstructured interviews (Fontana, Frey, 2000, p. 645) with research participants – artists, their families, instructors and members of audience regarding the artistic work of people with intellectual disabilities.

The process of participatory research
Planning change (Kemmis, McTaggart, 2000). In this part of the study, thanks to the interviews conducted with its participants, several major problems emerged and finding means to solve them should provide guidance for further action.

1. Art created by people with intellectual disability remains in a niche designated for it. The artistic work of artists with IDs is only perceived in the context
of their disability, and different criteria are employed for the evaluation of their work than for other artists.

*It is often the case that the artistic work of people with IDs is appreciated only because it was created by people with disabilities and it is not appropriate to say that you don't like it, as this is "politically incorrect". Very often "we like it" because at the back of our minds there is this thought that it was painted by someone worse, who does it worse, so we must like it* [act. int. 6].

The notion of an “artistic niche” also relates to exhibition venues which offer no opportunities to leave the isolated environment of the disabled. Thus, there is a closed circle where the art created by intellectually disabled people can only be seen by other disabled people and their families.

**Researcher:** Have you had any exhibitions yet?  
**Person 1:** Yes.  
**Researcher:** Do you remember where they were organised?  
**Person 1:** Well… at the library (the local library branch) [act. int. 1].

*In order to allow the people in care of other facilities to attend them [day care facilities and centres are meant here – ed.], the exhibitions are held at noon, when it is impossible for other audiences to attend them, two or three representatives of the local authorities come at the most. I haven't heard of any other way. But if there was a will to educate people, the works of these disabled artists would be shown at a museum and subject to the same rules as other artists’. Nobody is going to worry then if it's possible for other disabled artists attending art classes to come* [act. int. 6].

Artists with intellectual disabilities remain in the “artistic niche” also due to some mental barriers existing in society which result from fears and prejudice against people with intellectual disabilities.

*No other form of disability is as stigmatising for a human being as an intellectual disability. The intellectually disabled are treated as if their condition was an infectious disease. All physical barriers are easy to remove, whereas the mental barriers in society are hard to eliminate* [act. int. 6].

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2 Interview code
2. Limited respect for the artist’s individuality can also be observed. At the facilities providing care for people with intellectual disabilities, artistic activity is often guided by a predetermined schedule, and individual preferences or talents are not taken into account. This is due to the excessive standardisation of services provided for people with disabilities.

*I wanted to work with D., he drew one incredibly good thing then. I went to talk to our psychologist about that and she said that ‘unfortunately there were groups’, and the will to create is so transient […]*. Artistic work should give pleasure and joy… you can’t just tell someone: ‘create something here and now’… for me talent is the most important thing [act. int. 4].

[… I can be more independent now. When I’m alone, I can do what I want, and when I’m in class, activities change, for example, there is ceramics or glass art or crafts… and they are not my favourite… taking part in other workshops was tiring for me and I wasn’t very good at these things [act. int. 2].

3. Another issue is compensation of people with intellectual disabilities. Artists with IDs and their families point out that they cannot decide how to spend the money earned from selling the works or cash prizes won in art competitions. Yet another problem is the negligible worth of non-cash prizes in competitions for people with disabilities.

*It’s better for me to work on my own, because if my drawings are sold, I can earn some money, and when I was in workshops, when some works were sold, we didn’t get any money [act. int. 2].

*They don’t give us any money… it doesn’t work like that at all. But he sometimes tells me: ‘Mummy, look, this was sold for this much and that was sold for this much, and I got nothing’. And I tell him then that all the money was for the centre […]*. This is how I explain it to him. For the first grand prix… it was agreed that he wouldn’t get the money, but they would buy something for him… he got something instead of money [act. int.5].

**Researcher**: Have you won any competitions?  
**Person 1**: Yes.  
**Researcher**: And what was the prize?  
**Person 1**: … A T-shirt and crayons and a paint set.
In conclusion, three main areas of exclusion of people with intellectual disabilities in the field of art have been identified:

- exclusion due to little social awareness of the value of art created by people with intellectual disabilities resulting from social prejudice against them and unprofessional strategies of presentation and promotion of the artistic work of people with IDs,
- exclusion due to little respect for their artistic uniqueness and individuality,
- financial exclusion of people with intellectual disabilities in the field of art, resulting from a lack of clear and transparent criteria for sharing profits from the sales of art created by people with intellectual disabilities at the care and support facilities, a lack of clear criteria for the assignment of non-cash prizes and the low worth of prizes in competitions exclusively addressed to people with disabilities.

Action and observation (Kemmis, McTaggart, 2000). The main part of the research project involved action whose aim was to address the issue of exclusion of people with intellectual disabilities in the field of art. The action was focused on the organisation of an exhibition titled *Trzecia Przestrzeń* [The Third Space]. The space mentioned in the title refers to an area where relations between the non-disabled and the intellectually disabled can be transformed thanks to art, by creating a “borderland culture” (Krzemińska 2006, p. 574), wherein the universal language of art blurs the differences between the two, bordering worlds, thus creating a new form of social solidarity.

Preparations for the exhibition involved collecting and selecting the works created by artists with intellectual disability. The opening of the exhibition was preceded by promoting the event on social networking sites and on posters. Invitations to individual representatives of local authorities, cultural institutions and scholars were also sent out. The venue of the exhibition was the local cultural centre. The curator of the exhibition was the manager of the department of non-professional art at the regional museum. Seventeen works by eight artists were finally displayed.

An exhibition catalogue was published to accompany the exhibition featuring the introduction by the exhibition curator. The catalogue comprised the artists’ profiles, which in itself emphasised the artistic individuality and autonomy of the people with intellectual disabilities.
Discussion

Action evaluation and reflection on the research process (Kemmis, McTaggart, 2000). An inherent part of the participatory action research is its evaluation as an element helpful in finding ways to further improve this practice. The is presented in three key areas as presented in the following table.

Table 2. Reflection and evaluation of the conducted research

<table>
<thead>
<tr>
<th>Successes</th>
<th>area I</th>
<th>area II</th>
<th>area III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>creating an environment</td>
<td>action</td>
<td>participation</td>
</tr>
<tr>
<td>Forming a group of individuals (instructors, therapists, museum workers) willing to engage in the process of preventing discrimination of people with intellectual disabilities in the arts.</td>
<td>Publishing a professional exhibition catalogue with the artists’ profiles, which emphasised respect for the artistic individuality and autonomy of the people with intellectual disabilities participating in the study.</td>
<td>Engaging people with intellectual disabilities at the stage of planning change. They expressed their own views on discrimination in the arts, primarily regarding their own artistic preferences and compensation for their work.</td>
<td></td>
</tr>
<tr>
<td>Challenges</td>
<td></td>
<td>Leaving the “artistic niche”. Due to the time of the opening of the exhibition and its venue, the event was mainly attended by people with disabilities.</td>
<td>Full commitment of the people with intellectual disabilities at the action stage and changing the pattern in “the non-disabled” working for people with disabilities according to the principle “nothing about us without us”. Lack of long-term action.</td>
</tr>
</tbody>
</table>

Source: own study

Repeated planning cycle. Reasons for continuing the action research. The issue of discrimination of people with intellectual disabilities has proven extremely complex and further research in this area conducted as participatory action research is considered necessary by the author. Designing further change will be focused on the same areas as those reflected upon and evaluated with regard to the research project.
1. Participation. Further research process will be focused on forming a research team including self-advocates as its legitimate participants and engaging them in the research at every stage thereof.

2. Creating an environment. Further action will be aimed at establishing a local sub-institutional, independent environment concentrated on the artistic activity of people with intellectual disabilities, composed of people actively involved in changing attitudes and practices regarding the art created by people with intellectual disabilities. The goal will also be to include in the research process experts professionally promoting art of people with intellectual disabilities as well as some scholars.

3. Long-term action. The action in the next cycle of the research will concentrate on four main pillars for fighting discrimination of people with intellectual disabilities in the arts.

- PERSONAL AND ARTISTIC DEVELOPMENT of the participants, wherein the undertaken action will stem from their interests and preferences, and forms of artistic expression will not be forced upon them.
- VOLUNTARY PARTICIPATION contrary to the observed excessive standardisation of support of adults with intellectual disabilities; only self-advocates willing and interested in the action will participate in the study.
- DEMOCRATIC STRUCTURE based on cooperation of all research participants at each stage of the study.
- INCLUSIVE NATURE of the action thanks to cooperation with professional artists, cultural institutions and museums and due to creating opportunities for artists with intellectual disabilities to meet the audiences while maintaining professional strategies of presentation and promotion of their works.

Conclusions

The research on the strategies for fighting social and cultural exclusion of people with intellectual disabilities in the area of the arts was an attempt to follow the principles of participatory action research with regard to studying groups of people with intellectual disabilities. In the author’s view it is an important step toward protecting the rights of people with disabilities as well as meeting the demand for their social belonging.
The study showed that despite a number of obstacles hindering full social inclusion of people with intellectual disabilities, owing to the presence of art created by them in the public, mainstream space, it is possible to create a “social laboratory” of practices and attitudes toward these people (cf., Hall, 2010). If people with intellectual disabilities are recognised as individuals capable of conceiving their own artistic message, the field of the arts will become a space where they can be seen and heard. As a result, people with disabilities gain “the right for their expression to be recognised as socially meaningful” and thus their message goes beyond pure aesthetics and becomes a political manifesto (Godlewska-Byliniak, Lipko-Konieczna, 2016, p. 15).

In conclusion, in this research studying the subject of artistic work (the arts) has become a laboratory of social practices toward people with intellectual disabilities. The solutions created in the realm of the arts may serve as an example for establishing a normalising model of support for adults with intellectual disabilities in other areas as well.

References


Support
for Adults with Disabilities

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Abstract
This paper is a hermeneutic analysis of selected academic publications. This paper examines a number of issues related to undertaking social roles by adults with disabilities and the problem of their postponed transition to adulthood, restricting or delaying developmental tasks typical of adulthood, which has negative implications and may exacerbate disability. Support provided by various entities and institutions may reduce existing barriers and enhance their social integration. Both positive and negative effects of using social support by people with disabilities have been pointed out. Sources of social support have been listed along with their specifics. The analysis included the disabled person’s gender, as it determines the nature of support and its reception. Finally, the need for personalised support was emphasised along with risks resulting from institutional discrimination. The role of local community was highlighted as it corresponds to the concept of community-based support and the need to promote various initiatives aimed at integration and normalisation of life for people with disabilities.

Keywords: adulthood, person with disability, issues, social support, normalisation, integration
Support for adults with disabilities

Studying the situation of growing up and transition to adulthood of people with disabilities, researchers have identified numerous challenges and obstacles that these people faced with regard to undertaking social roles.

The survey on models of social functioning of people with disabilities or with long-term health conditions carried out by the Legal Services Commission revealed that in comparison to the non-disabled they were less educated, less often in employment, but were more often beneficiaries of various welfare systems, and less often reported the will to have children. More often than the representatives of the non-disabled sample they reported experiencing problems such as: discrimination, unemployment, poor relations with neighbours, difficulties in becoming tenants, homelessness, poverty, problems with obtaining social security benefits, domestic violence, neglect by healthcare institutions, mistreatment by social control services, mental health issues. There was also a risk of developing a spiral of problems, which demonstrated itself in the disabled people experiencing two or several of the above-mentioned problems at the same time, while there were also links between the situations that caused the said problems. Consequently, four groups of problems were identified across a range of domains: family issues, problems connected with homelessness, health and social security problems, and those regarding economic factors (O'Grady, Pleasence, Balmer, Buck, Genn, 2004, 19: 264–266).

Problems regarding the transition to adulthood of people with disabilities are mostly characterised by the fact that social roles are adopted later in life, in a delayed manner.

Among people with disabilities we can observe (Rękosiewicz, Brzezińska, 2011/4: 103) either restricting such demonstrations of independence and adulthood by the environment, which is often driven by fear or misunderstanding resulting from insufficient knowledge, or the close environment and the general public falsely interpreting the fact of delaying or avoiding undertaking developmental tasks typical of adulthood as a manifestation of their disability, understood as an inability to accomplish these tasks. Therefore, delayed transition to adulthood of people with disabilities is not always a result of their own choices, decisions or a means of adapting to the requirements of, e.g., the labour market, but it at times results from the impact of the family environment, neighbours, school, who fail to propose actions that are appropriate for their needs as well as abilities. Moreover, these environments can restrain their natural tendencies to learn independence, to experiment with social roles, or attempts to pursue “adult-
“like” forms of activity. This attitude is normally displayed toward people with intellectual disabilities, typically perceived as helpless, dependent and incapable of becoming fully grown-up persons. The obstacles, either real or those resulting from the lack of understanding and support appropriate for the needs of the disabled, in undertaking developmental tasks typical of adulthood exacerbate the sense of being different and lead to developing one’s identity around the awareness of one’s limitations and deficits, rather than around one’s strengths and already acquired competences. Thus, the disturbed transition to adulthood becomes a secondary consequence of disability which further exacerbates it. Consequently, in people with limited ability both physical (less often) and intellectual (more often) we may talk of a delayed, or even suppressed, transition to adulthood, understood as a postponement resulting not from one’s own will, but rather as a necessity caused by one’s inability to overcome barriers in the environment.

It occurs that people with disabilities completely fail to make a transition to adulthood in the period appropriate for their age, and thus remain dependent on their parents, maintaining roles characteristic of children rather than adults, which may be due to their difficult mental and social situation as well as limitations in terms of their abilities, and the limitations of the socialisation process taking place in their family home and educational institutions and care facilities.

Karin Barron (1997: 3) claims that western society attaches great importance to the existing gender patterns, and therefore expectations toward disabled girls/women differ from those toward disabled boys/men, which results in different life opportunities in these two groups.

The process of socialisation of disabled boys and girls to social roles undertaken in adult life varies depending on the time when they became disabled and the reason thereof.

According to M.L. Beleza, difficulties which disabled men and women face are not the same, as they stem from different causes and largely depend on the social roles stereotypically assigned to men and women. Beleza claims that women with limited abilities suffer from a disadvantageous cumulative effect of discrimination factors. Disabled women experience the same forms of discrimination as their non-disabled peers, but additionally encounter the same obstacles as disabled men. Women are often, to a larger extent than men, treated as individuals incapable of being self-sufficient and needing support (Beleza, 2003).

The research conducted (Nowak, 2012b: 369–374) among adult women with visual impairment and mobility impairment confirmed the existence of challenges related to fulfilling social roles, acquiring professional qualifications, gaining professional experience, employment commensurate with their qualifications and
abilities, as well as problems related to satisfying social security needs. The area that proved difficult for the disabled women was their personal and sexual life, as well as marriage. The social activity of the subjects, understood as undertaking social roles characteristic of adults, mirrored the process of their social exclusion. The experts – social workers (Nowak, 2012a) working with disabled women also identified numerous barriers in their social functioning.

It is worth noting in this context that there is a number of existing challenges. It is still not rare that people with disabilities are treated as objects: their dignity and the value of their lives is diminished, in many situations their humanity is seen as incomplete (Brigham, Kauffman, Mcgee, 2004).

People with disabilities are still not perceived in terms of ordinary, everyday social interactions, but as “others”, which means they are treated as objects rather than as subjects, they are seen as “welfare recipients” rather than free individuals, making a valuable contribution to the achievements of civilization (Spraque, Hayes, 2000: 671–695).

Disabled people are assumed to be weak (both physically and mentally, timid, insecure) and suffering from social isolation (suspiciousness, secrecy, seclusion), frequently they are believed not to have reconciled with their situation, to mourn for the lost ability, they are seen as unhappy or jealous of the non-disabled. The stereotype of a person with mobility impairment in the United States suggests that such a person is dependent on others, isolated and emotionally unstable (Shannon, Schoen, Tansey, 2009: 75:11–18).

By reinforcing stereotypes concerning people with disabilities, social attitudes, expectations and demands are created, thus affecting their behaviour and close environment. Due to their stigmatising function, stereotypes, negative attitudes, obstacles and barriers increase the risk of social exclusion of people with disabilities in numerous spheres of social life.

As T. Żółkowska (2004) points out, along with the growing impact of the humanistic paradigm of disability, the importance of support as a determinant not only of common human sensitivity to the needs of others, but also of an organised system of institutions and services corresponding to the broadly defined concepts of normalisation, independent living and integration, becomes increasingly clear.

People with intellectual disabilities may need support primarily due to their lack of autonomy. The idea behind the support they are offered is to help them realise the potential of autonomy (Petner-Arrey, Copeland, 2014, 3: 39). People with severe and profound intellectual disabilities spend most of their time isolated and disengaged. Hence, the quality of their life is largely determined by the nature
and quality of support (Beadle-Brown, Leigh, Whelton, Richardson, Beecham, Baumker, Bradshaw, 2015, 29:409).

The sources of support are usually divided (Cunnigham, A. Barbee, 2000) into: family, e.g., husband, wife, parents, siblings and more distant relatives; groups of friends from outside the family, social groups, neighbours, superiors at work and work colleagues; religious groups; members of the caring professions, e.g., therapists, doctors, and social workers.

It is highlighted that women benefit from social support more than men. Contrary to men, women are also more satisfied with the support they receive from friends and other members of their social network. They more often mention their children, family and friends as a source of support. However, this situation is reverse in marriage – men mention their wives as a source of satisfactory support more often than women mention their husbands (Kahn, 1994: 163–184).

Women have a more developed sense of personal responsibility for the problems of other members of their social network, which prompts them to help in solving these problems. They may depend on the help of relatives to a greater extent than men, whereas men are more dependent on their wives, and when a man is unmarried he may feel more isolated or less capable of taking proper care of himself (Barer, 1994: 29–40).

Women are able to find considerably more sources of support than men, they use them more willingly and more intensively, they are more spontaneous in expressing their emotions, more effective in seeking additional sources of support – this results from social patterns and stereotypes, according to which a man should not show weakness. It is also worth noting the gender-dependent direction of social support in stress situations. Social support at work is a stress buffer for men, whereas for women a more significant stress buffer is social support received from their spouse/family (Barer, 1994).

It may be concluded that social support at work has a more advantageous effect on men than on women in terms of shaping the work-family balance. What matters here is the perceived organisational support, defined as the employee’s beliefs concerning the extent to which the organisation appreciates his contribution and cares about his well-being (Aryee, Srinivas, Hwee Hoon, 2005:90).

Social support in relation to marriage may be considered as sensitivity toward the partner’s needs (a disabled wife), and more specifically as acts of care, validating or confirming the partner’s worth, her feelings and actions and those which facilitate dealing with problems by providing them with information, help or with material, concrete resources or means. This sensitivity contributes to building trust and various expectations based thereon, including expectations to satisfy the needs
which may emerge in difficult, stressful situations, as well as those resulting from the woman’s disability. Social support in marriage may at least indirectly affect mental and physical well-being of both partners, thanks to the improved quality of their relationship and consequent level of satisfaction. Men usually receive more social support in marriage than women, whereas wives provide their husbands with more support than they receive (Aryee, Srinivas, Hwee Hoon, 2005:90).

The form of support that is most appreciated in marriage both by men and women is acceptance. It is worth noting that women who were professionally active highly appreciated any help of their partner in everyday chores and problems typical of the family environment (Cutrona, 1996).

While carrying out research among groups of people with intellectual disabilities and physical disabilities T. Lippold, J. Burns (2009: 463–473) found that adults with ID had more limited social networks than those with PD, but they engaged in more activities (e.g., shopping, using public transport, active ways of spending free time, etc.) than people with physical disabilities. Moreover, the researchers discovered that people with intellectual disabilities mainly relied on social support provided by their families and carers. The intellectually disabled were shown to have few relations with non-disabled people, whereas in the case of people with physical disabilities it was found that the ratio between relations with non-disabled people and the relations with other disabled persons was more balanced. The authors (Lippold, Burns, 2009) drew several conclusions concerning social support: intellectual disabilities are accompanied by phenomena and processes leading to a more impoverished lifestyle with regard to social relations (despite their greater engagement in various activities compared to people with physical disabilities). For people with intellectual disabilities integration and engaging in a wide range of activities does not grant good social and emotional support. Despite assistance provided by numerous carers, adults with intellectual disabilities do not develop their social networks compared to those formed by people with physical disabilities. Hence, the type of disability affects the type and quality of social relations and this is, unfortunately, especially conspicuous in the case of people with intellectual disabilities.

The research conducted showed that women with disabilities (mobility and visual impairments) use various sources of social support, they mention their children, spouses, parents (if living together) and friends as primary sources of support (Nowak, 2012b).

Social support is a phenomenon accompanying people with disabilities throughout the course of their lives. The possibility to receive support helps a person with disabilities to prevent isolation, exclusion, increases their mental strength, may
prove an effective way to integrate social roles fulfilled by these people, especially their professional and marital roles. Skilled support fosters development and proper adaptation of an individual to a challenging situation.

Active support is most desirable. Beadle-Brown, Leigh, Whelton, Richardson, Beecham, Baumker, and Bradshaw (2015, 29: 420) claim that active support is an integral part of assistance provided for the intellectually disabled, regardless of the degree of their disability.

While exploring the issue of social support, it is also worth looking at the negative implications thereof. For some people social support may be a source of embarrassment and emotional discomfort. Some people may perceive such attempts as a proof of their dependency, need for commitment, and even inferiority, especially when they are unable to meet the demands of such a commitment. In these situations the persons receiving support experience embarrassment instead of gratitude, and consequently may even begin to dislike the person providing support (Campbell, Simpson, Boldry, Kashy, 2005: 510–531).

As Petner-Arrey and Copeland (2014, 3: 47) point out, ultimately the support for people with intellectual disabilities provided by institutions prevails over their need for autonomy and thus creates persistent obstacles for promoting autonomy of people receiving support.

It appears that the provision of support for people with intellectual disability and their use of various forms of support may be hindered by institutional discrimination. P. Alcock, A. Erskine, and M. May point out to institutional discrimination as a consequence of institutional social actions. They claim that policies and activity of public or private organisations, social groups and all institutionalized forms of social life lead to unequal treatment or unequal opportunities of the non-disabled and the disabled, and that social welfare institutions deprive people with disabilities of their right to autonomy. Such unjust treatment of people with disabilities is, in the authors’ opinion, a consequence of statutory obligations pursued by the social welfare services which interfere with the privacy of disabled persons due to a variety of legislative acts, inappropriate and categorizing actions (Alcock, Erskine, May, 2003: 317). The financial and medical assistance offered to the disabled by a number of institutions, though necessary and often indispensable, is nevertheless a meagre compensation for their marginalisation – depriving them of independence, dignity and respect associated with active participation in community life (including employment) to an extent comparable to the opportunities enjoyed by their non-disabled counterparts (Ingram, 2006).

The disabled should be able to benefit from all schemes and systems available for the public. It is recommendable that a personalized and individually tailored offer
should be prepared and implemented for the disabled, by which their presence in the community could be enhanced, their social and professional competences improved, their ability to undertake social roles fostered and by which they could be relieved from the state of helplessness or exclusion. The most advantageous conditions for development and living can be created in the local environment, their place of residence, which corresponds to the concept of providing community-based support, and is confirmed by research. For example, Beadle-Brown, Leigh, Whelton, Richardson, Beecham, Baumker, and Bradshaw (2015, 29: 410) claim that “Following the move from larger congregate settings to smaller-scale services in the community, people with intellectual disabilities typically experience better outcomes across almost all quality of life domains.” It is indispensable to include their families, neighbours, mutual support groups, local authorities, agencies responsible for healthcare, education, welfare and employment in the provision of support, and also to influence people with disabilities and the environment in which they live through promoting initiatives encouraging their social integration and normalisation.

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Chosen Aspects of Psychology
Acknowledging Feelings to Enhance Prosociality: Emotional Awareness and Prosocial Behaviors in Adolescence

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Abstract

Prosocial behavior is correlated with better social adjustment among adolescents, while emotional abilities are prominent factors that enhance prosocial behaviors. Attention to emotions and clarity of emotion were found as two core dimensions of emotional abilities. In the presented study the relationships between attention to emotion and clarity of emotion and prosocial behavior were examined with gender as a moderator. Two hundred and fourteen adolescents participated in the study (86 males). The participants filled in the Toronto Alexithymia Scale (TAS-20), Trait Meta-Mood Scale (TMMS), and Prosocial Behavior Questionnaire (PBQ). Two dimensions underlying the subscales of TAS-20 and TMMS were found: inattention to emotions and unclear emotion. Gender differences appeared in emotion awareness dimensions and prosocial behavior. Using structural equation modeling it was shown that inattention to emotion, yet not unclear emotion, inhibits prosocial behavior.

Keywords: emotional awareness, prosocial behavior, adolescence

Introduction

Prosocial attitudes and behaviors play a crucial role in the successful development and adjustment of adolescents (Caprara et al., 2014). Prosocial children and adolescents have better peer relationships (Eisenberg, Fabes, & Spinrad, 2006),
are less at risk of externalizing behaviors and aggression (Kokko et al., 2006), and perform better in school (Caprara et al., 2014). In adolescence, due to the development of social competences (e.g., perspective taking; Van der Graff et al., 2014), prosocial behavior may be more helpful in establishing beneficial social bonds (Fabes et al., 1999). Displaying prosocial behavior is also a protective factor against association with deviant peers and subsequent delinquent and antisocial behaviors in adolescence (Carlo et al., 2014).

Prosocial behavior is defined as a voluntary behavior aimed at benefiting others (Caprara et al., 2014). Carlo and Randall (2002) extracted six types of prosocial behavior: altruistic (voluntary helping, motivated primarily by concern for the needs and welfare of others, often induced by sympathy and internalized norms/principles consistent with helping others), compliant (helping others in response to a verbal or nonverbal request), emotional (an orientation toward helping others under emotionally evocative circumstances), dire (helping in crisis or emergency situations), public (prosocial behaviors conducted in front of an audience are likely to be motivated, at least in part, by a desire to gain the approval and respect of others) and anonymous (helping performed without knowledge of who helped). Nielson, Padilla-Walker, and Holmes (2017) differentiated five types of prosocial behaviors: defending, emotional support, social inclusion, physical helping, and sharing. In a sample of Polish teenagers, three factors of prosocial behavior were obtained: charitable behaviors, active prosocial behaviors, and support behaviors (Moroń, 2012).

Displaying prosocial behavior is boosted by empathy and problem-focused coping (Carlo et al., 2012) and enhanced with high agreeableness (Eisenberg et al., 2006), yet inhibited by dispositional envy (Yu, Hao, & Shi, 2018). There are also gender differences in prosocial behavior, mainly in favour of women (Fabes et al., 1999), and the evidence for a greater role of emotional abilities in fostering helping behavior among women (Kuhnert et al., 2017). While emotional abilities were stressed as critical antecedents of prosocial behavior (Eisenberg et al., 2006), the initial stages of school-based preventive interventions include development of emotion regulation skills, acknowledging feelings and broadening of emotional awareness of adolescents (Caprara et al., 2014).

Two core dimensions of emotional abilities could be differentiated, namely: attention to emotions and clarity of emotion (Coffey, Berenbaum, & Kerns, 2003; Palmieri, Boden, & Berenbaum, 2009). Both dimensions refer to consciousness of one's emotional states. Winkelmann, Berrie and Sher (2011) stressed that any form of consciousness allows the organism to go beyond simple, habitual reactions and design novel, complex, context-sensitive forms of responding. This
regulatory function is perceived as implicating tremendous social consequences (Ochsner & Gross, 2004), which could be also seen in the propensity to prosocial or aggressive behavior.

Attention to emotions refers to focusing attention on emotional processes, and becoming aware of and valuing them (Boden & Thompson, 2017). Attention to emotions is linked to extraversion, openness (Coffey, Berenbaum, & Kerns, 2003), and emotion intensity rather than to emotional variability (Thompson, Dizen, & Berenbaum, 2009). Individuals higher in attention to emotion tend to have increased levels of both negative and positive affect. However, in a prospective study, attention to emotion was found to predict a decrease in levels of negative affect, but no change in the level of positive affect (Thompson et al., 2011).

Emotional clarity refers to meta-knowledge about emotions, and reflects the extent to which people unambiguously identify, label, and characterize their own emotions (Boden & Thompson, 2017). Clarity of emotion is negatively correlated with self-focused needs (Dizèn, Berenbaum, & Kerns, 2005), while an ambiguity over emotions is positively correlated with neuroticism (Coffey, Berenbaum, & Kerns, 2003). Clarity of emotion is more highly associated with emotion variability than attention to emotions is (Thompson, Dizen, & Berenbaum, 2009). Diminished emotional clarity is associated more strongly with social anxiety than with depression (Thompson, Boden, & Gotlib, 2017).

Emotional abilities in general are found to be correlated with a greater propensity to prosocial behavior (e.g., Charbonneau & Nicol, 2002; Gil-Olarte Marquez et al., 2006), whereas low emotional awareness favors suspiciousness (Boden & Berenbaum, 2007). Emotional awareness correlates with perspective taking, empathic concern and agreeableness (Abbate et al., 2006), which are significant predictors of helping others (Eisenberg et al., 2006). Attention to emotion and clarity of emotion were positively correlated with pro-social attitudes (Jiménez & López-Zafra, 2013), while alexithymia (a reverse of emotional awareness) is linked with lower prosocial tendencies (FeldmanHall et al., 2013).

The aim of the presented study was to examine associations between facets of emotional awareness, attention to emotion and clarity of emotion, and prosocial behaviors of adolescents. According to the abovementioned results it was hypothesized that both attention to emotion and clarity of emotion would be positively correlated with prosocial behavior. It was also hypothesized that gender would be a significant predictor of emotional awareness and prosocial behaviors, while levels of both variables would be higher among women than men. The present study contributes to the current knowledge mainly by examination of emotional awareness as a predictor of prosocial behavior and by inspection of a separate
role of components of emotional awareness for prosocial behavior. Given that emotional awareness is possible to develop, results of the study may be useful in preparing prevention programmes in schools. The results may also show in what way emotional awareness should be trained to foster desirable prosocial behaviors among adolescents.

**Method**

**Participants**

Participants were 214 students of secondary schools (86 males). The participants’ age ranged from 15 to 23 ($M = 17.77$; $SD = 1.01$). The participation was fully voluntary. The number of participants is larger than the sample size appropriate for detection of correlational coefficients of magnitude around .261, which was previously demonstrated by Jiménez and López-Zafra (2013) for a relationships between emotional awareness and prosocial attitudes, therefore the study ensures high statistical power for detection of such relationships (appropriate sample size to restrain Type II error to $\beta = .100$, while keeping $\alpha$ at the level of .01 should be $N = 211$; cf., Hulley, Cummings, Browner, Grady, & Newman, 2013).

**Materials**

*The Toronto Alexithymia Scale, TAS-20* (Bagby et al., 1994; author’s translation). The TAS-20 consists of three subscales: difficulty identifying feelings (DIF; 7 items; e.g., “I am often confused about what emotion I am feeling”), difficulty describing feelings (DDF; 5 items; e.g., “I am able to describe my feelings easily”), and externally oriented thinking (EOT; 8 items; e.g., “I prefer talking to people about their daily activities rather than their feelings”). Items were assessed on a Likert-type scale from 1 (completely uncharacteristic of me) to 5 (completely characteristic of me). A score for each subscale was computed as an average rating. The TAS-20 is in wide international use and has shown good reliability and construct validity (Taylor, Bagby, & Parker, 2003).

*The Trait Meta-Mood Scale, TMMS* (Salovey et al., 1995; author’s translation). The TMMS is a 30-item scale consisting of three subscales – attention (13 items; e.g., “I pay a lot of attention to how I feel”), clarity (11 items; e.g., “I am usually very clear about my feelings”), and repair (6 items; e.g., “When I become upset, I remind myself of all the pleasures in life”). The participants ranked items on a scale from 1 (completely uncharacteristic of me) to 5 (completely characteristic of me). A score for each subscale was computed as an average rating. The TMMS
has also shown good reliability, and construct validity in many language versions (e.g., Salguero et al., 2010).

*The Prosocial Behavior Questionnaire, PBQ* (Moroń, 2012). The PBQ is a 20-item measure of prosocial behavior adapted to use in studies conducted among adolescents. Participants indicate how often they undertake several helping behaviors from three domains: charity, active prosocial behavior (e.g., volunteering), and prosocial supporting behavior (e.g., sharing) on a five-point scale ranging from 0 (never) to 4 (very often). A score was computed as an average rating.

**Procedure**

After obtaining permissions from the head teachers of schools, the study was conducted in small groups during classes. Verbal informed consent was also obtained from every participant before participation. After the study each group was debriefed.

**Data analysis**

Analyses were conducted in R 3.1.3. with packages: “psych” (descriptive statistics, correlations, tests of differences and factor analysis) and “lavaan” (structural equation modeling).

**Research Results**

Descriptive statistics are presented in Table 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. DIF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. DDF</td>
<td>.62***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. EOT</td>
<td>.15*</td>
<td>.24***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Attention</td>
<td>-.12†</td>
<td>-.21***</td>
<td>-.52***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Clarity</td>
<td>-.71***</td>
<td>-.61***</td>
<td>-.20***</td>
<td>.18**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Repair</td>
<td>-.40***</td>
<td>-.35***</td>
<td>-.13†</td>
<td>.21***</td>
<td>.52***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. DiC</td>
<td>.03</td>
<td>-.01</td>
<td>-.09</td>
<td>.14*</td>
<td>-.08</td>
<td>.14*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. ADP</td>
<td>.04</td>
<td>-.001</td>
<td>-.12†</td>
<td>.11</td>
<td>-.01</td>
<td>.14*</td>
<td>.52***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. PDW</td>
<td>-.004</td>
<td>-.09</td>
<td>-.28***</td>
<td>.17*</td>
<td>.07</td>
<td>.27***</td>
<td>.47***</td>
<td>.53***</td>
<td></td>
</tr>
</tbody>
</table>
Following Coffey et al. (2003), the computation of indices of attention to emotion and clarity of emotion were conducted by means of factor analysis (FA) on the subscales of TMMS and TAS-20 (KMO = .74; Promax rotation). According to the hypothesised model and parallel analysis, two-factor solution was obtained (Table 2).

### Table 2. Factor loadings for emotional awareness variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIF</td>
<td>.85</td>
<td></td>
</tr>
<tr>
<td>DDF</td>
<td>.87</td>
<td></td>
</tr>
<tr>
<td>EOT</td>
<td></td>
<td>-.52</td>
</tr>
<tr>
<td>Attention</td>
<td>.10</td>
<td>.99</td>
</tr>
<tr>
<td>Clarity</td>
<td>-.88</td>
<td></td>
</tr>
<tr>
<td>Repair</td>
<td>-.52</td>
<td></td>
</tr>
<tr>
<td>eigenvalue</td>
<td>2.21</td>
<td>1.23</td>
</tr>
<tr>
<td>% of explained variance</td>
<td>.37</td>
<td>.21</td>
</tr>
</tbody>
</table>

**Note.** Loadings lower than .100 were omitted.

According to the results of factor analysis and hypotheses of the presented study, a structural model was constructed and examined. Results are present in Figure 1.
Examination of the loadings of the TAS-20 and TMMS subscales indicated that latent variables had opposite meaning to that hypothesised: lack of emotional clarity (referred to as: ‘unclear emotion’), and inattention to emotion. A postulated model resulted in good fit to data ($\chi^2 (24) = 53.62; p < .001; CFI = .951; TLI = .926; RMSEA = .076; 90\% CI for RMSEA = [.041; .103]$). All path coefficients were significant, except the direct path between unclear emotion and prosocial behavior. Inattention to emotion was a negative and significant predictor of prosocial behavior.

Next, the structural model was examined with gender as a grouping variable. The analysis yielded in good fit for both genders ($\chi^2 (48) = 75.49; p = .007; CFI = .951; TLI = .926; RMSEA = .073; 90\% CI for RMSEA = [.039; .104]$; among the men: $\chi^2 (24) = 32.08; p < .13; CFI = .957; TLI = .936; RMSEA = .063; 90\% CI for RMSEA = [0; .114]$; among the women: $\chi^2 (24) = 38.17; p = .03; CFI = .962; TLI = .943; RMSEA = .067; 90\% CI for RMSEA = [.019; .106]$). The path from inattention to emotion to prosocial behavior was insignificant among the men, $\beta = -.241; p = .146$, while significant among the women, $\beta = -.299; p = .054$. The relationship between unclear emotion and inattention to emotion was stronger among the men, $\beta = .467; p < .001$, than among the women, $\beta = .288; p = .009$.

**Figure 1.** Structural model of relations between variables.

*Note.* DIF – difficulties identifying feelings; DDF – difficulties describing feelings; EOT – externally oriented thinking; DiC – charity; ADP – active prosocial behavior; PDW – prosocial supporting behavior.

** $p < .01$; *** $p < .001$. 

![Diagram](image.png)
Discussion

In the presented study, the meaning of two core dimensions of emotional awareness was opposite to those derived theoretically, namely ‘inattention to emotions’ and ‘unclear emotion’ (cf. Coffey et al., 2003). The women reported higher levels of attention to emotion, but significantly lower levels of clarity and repair. The men reported lower levels of difficulties identifying feelings than the women. These results partially confirmed previous research which found that women attend more to their emotions than men (Mankus, Boden, & Thompson, 2016), but are not in concordance with past research indicating that emotional clarity does not vary by gender (Gohm & Clore, 2002). Given self-report methodology of measurement, the obtained results may come from greater self-confidence in males (Quatman & Watson, 2001).

The study confirmed the discriminant validity of inattention to emotions and unclear emotion (Boden & Thompson, 2017). A negative association was found between inattention to emotions and prosocial behavior, while the relationship between unclear emotion and prosocial behavior was not significant. Attention to emotion leads to higher levels of both positive and negative affect, whereas in prospective design it predicts only a decreased level of negative affect (Thompson et al., 2011). High attention may provide more opportunities to regulate emotion, and people who highly attend to emotions may be more likely to regulate them in service of emotion regulation goals (Tamir, Mitchell, & Gross, 2008). In prominent models of prosocial behavior: a negative-state relief model and empathy-altruism model (Batson et al., 1989), occurrence of emotional arousal is the significant first stage that leads to prosocial behavior. It could be proposed that paying attention to one's feelings but also being attentive to the feelings of others (both tendencies are embedded in attention to emotion) play a role of an instigator of emotional processing that leads to prosocial behavior. The lack of relationships between unclear emotion and prosocial behavior may correspond to the conclusions of Gini, Pozzoli, and Hauser (2011), who demonstrated that bullies have an enhanced moral competence to judge relative to victims, but lack moral compassion. Their conclusions may be interpreted that bullies may have a high insight into emotional states of victims (clarity of emotion), but voluntarily turn away their attention to avoid emotions resulted from being a witness of one's harm.

The obtained results may shed new light on Boden and Thompson’s (2017) proposition about the causal relationship of emotional awareness dimensions. The authors suggested that most logically compelling causal relation proceeds from increased attention to increased clarity. According to the present study, it may be
proposed that the relation could also be reversed. With greater emotional clarity an individual may put more attention to get information about their own and others’ emotional states. Clarity of emotion may play an important role in an individual’s intrapersonal adjustment, but may have only limited importance in shaping interpersonal relationships. Gained meta-emotional knowledge may help in behaving adequately in social situations only if information about the affective states of others is already obtained through high attention to emotion. Given that in both genders the relationships between variables of interest have the same direction and only small differences in the magnitude of regression coefficients appeared, it may be stated that attention to emotion plays a similar role for both men and women.

The present study is subject to some limitations. Firstly, the non-random sampling method used, which may restrict a possibility of generalisation of the obtained results. In the present study, convenience sampling was used, namely a naturally-occurring group of people within the population of adolescents participated in it. Students of several classes drawn from two different schools participated in the study, according to their head teachers’ decisions. When using such sampling it is not possible to rule out a confounding role of some moderator variables that may lie behind the obtained results (e.g., specific normative beliefs about prosociality among students of selected schools). Therefore, the detected significant relationships should be confirmed in the future research with the use of random sampling to confirm the validity of obtained effects and its generalisation. Second limitation is connected to a self-report method of prosocial behavior measurement. For more valid results, in the future studies experimental or observational data on prosocial tendencies of adolescents should be obtained. Despite the abovementioned limitations, the presented study brings new information about the importance of emotional awareness for improving prosocial behaviors among adolescents, which could be found useful in social practice. It was also conducted on a sample with an appropriate number of participants, controlling for gender and age.

Conclusions

Two dimensions of emotional abilities were distinguished: inattention to emotion and unclear emotion. The men reported higher levels of clarity and repair subscales of trait meta-mood, while the women reported higher levels of prosocial behavior. Inattention to emotion, but not unclear emotion, was significantly and negatively correlated with prosocial behavior, and these relationships were not substantially moderated by gender.
References


Acknowledging Feelings to Enhance Prosociality


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