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Editor’s Preface

The first number of *The New Educational Review* in 2017 is the forty-seventh 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, Lithuania, Nigeria, Poland, Serbia, the Slovak Republic, Slovenia, South Africa, South Korea, Taiwan, and Ukraine, 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: Social Pedagogy, Pedeutology, General Didactics, Special Pedagogy, Preschool Education, and Chosen Aspects of Psychology.

In the subject session “Social Pedagogy” we publish twelve articles. Beata Žitniaková Gurgová and Eva Nábělková present results of the non-hierarchical cluster analysis of academic performance and aspects of achievement motivation of a sample of undergraduate students. The study by Katarína Hollá, Lívia Fenyesiová and Jana Hanuliaková describes results of research conducted in 2015 within the project of the Ministry of Education, Science, research and Sport of the Slovak Republic, which concerns the analysis of levels of cyber-bullying severity. The scientific problem analysed in the paper by Rita Dukynaitė and Jolita Dudaitė is defined by the following question: which factors of school educational environment are significant for the sense of school belonging and social membership to arise? The main purpose of the article by Olena Budnyk and Piotr Mazur is to show the hierarchy of values of young people aged 12–15. Ewa Ogrodzka-Mazur discusses the transformations in the realization and fulfilment of life aspirations of children and youth from the Polish-Czech borderland. The study by Prince Chukwuneme Enwereji, Ifeanyi Mbukanma and Joshua Ebere Chukwuere is triggered as a result of declining performance of learners in Botswana and it is aimed at finding solutions that would enhance sound academic performance in junior secondary school. The aim of the study by Sladjana N. Zuković and Jovana J. Milutinović refers to the understanding of parents’ attitudes towards private and
alternative schools. Suwan Kim asked Korean Arabic language learners to watch two episodes of an Arab soap opera and compare and contrast their own culture with Arab culture based on what they had watched. Touba Pouramiri and Vali Mehdinezhad investigate servant leadership as a predictor of high school principals’ organizational trust. The primary aim of the article by Peter Gavora and Adriana Wiegerová is to present the validation process of the SEPRES questionnaire to measure the self-efficacy of students in a preschool education programme. The research by Kokom Komalasari and Didin Saripudin develops a model of a civic education textbook on the basis of living values education. Katarzyna Borzucka-Sitkiewicz, Katarzyna Kowalczewska-Grabowska, Dorota Gawlik and Dorota Lamczyk in their article present the findings of the research conducted in order to learn physical education teachers’ opinions on the implementation of the health education content.

In the subject session “Pedeutology” we publish five articles. The contribution by Zlatica Huľová and Denisa Šukolová is aimed at study of views and attitudes towards the contents of Technical education from the perspective of elementary school female teachers in Slovakia. The text by Lenka Rovnaňová and Lívia Nemcová presents results of research on theory and practice integration in future teachers’ undergraduate training. The purpose of the research described by Nasrun is to find out the effect of incentive reward motivation, teacher psychological competence and school principal leadership on work motivation. Yoppy Wahyu Purnomo reveals the profile of teachers’ mathematics-related beliefs, the consistency among belief dimensions, teachers’ practical profile in a mathematics class, and the consistency between beliefs and teachers’ practices in a mathematics class. The text by M.B. Bello, A. Yusuf and I.O.O Amali examines secondary school teachers’ level of emotional intelligence and their moral character as predictors of moral character among secondary school students in Ilorin South LGA, Kwara State in Nigeria.

In the subject session “General Didactics” we publish two articles. Boža D. Miljković, Aleksandar V. Petojević and Mališa T. Žižović present a model for evaluating students based on automatic recognition of emotions during task solving in distance learning. The article by Zbyněk Vácha and Lukáš Rokos focuses on the Czech university students’ attitudes to integrated science at elementary school and biology at secondary school and their experiences with inquiry-based scientific education of these subjects.

In the subject session “Special Pedagogy” we publish two articles. The study by Nawaf Al-Zyoud and Eman Al-Zboon investigates the perspectives of young women with disabilities in Jordan, focusing on their self-regulation. Agnieszka
Łaba-Hornecka presents a pedagogical experiment, during which puppets were used in bibliotherapy classes.

In the subject session “Preschool Education” we publish one article. Elżbieta Płócienniczak, popularizing education for wisdom as a basis for comprehensive development of pupils, looks for methods supporting the development of wisdom from childhood.

In the subject session “Chosen Aspects of Psychology” we publish one paper. The study by Ahmad M. Mahasneh aims to investigate the effects of electronic mind mapping on achievement and attitudes in an educational psychology course.

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 – Guide for Authors.
Abstract
The contribution presents results of the non-hierarchical cluster analysis of academic performance and aspects of achievement motivation of a sample of undergraduate students. The Achievement Motivation Questionnaire (AMQ) (Dotazník motivácie výkonu, Pardel, Maršálová, Hrabovská, 1984) was used as the research method. School success was established using the arithmetic mean of study results of 213 undergraduate students after completion of a term. In the AMQ, the Achievement Motive variable was focused on, consisting of the following aspects: achievement-oriented behaviour, aspiration level, perseverance at work, and future time orientation. The main aim of our research was to determine undergraduate student types by their academic performance and aspects of achievement motive. Based on the assessment of generated three to six-cluster solutions, the six-cluster solution appeared optimal, within which the following types of undergraduate students were identified: type of unused potential, unbalanced type, balanced type, type unoriented in time, academically indifferent type, and industrious type.

Keywords: achievement motivation, achievement motive, academic performance, undergraduate student types, cluster analysis
**Problem**

According to McClelland’s model (1976), achievement motivation may be understood as a relatively stable predisposition of an individual, representing one of important achievement factors. Achievement motives represent a general, affect-based disposition triggering the achievement activity and leading an individual to success or failure. The basis of achievement motivation is the need for achievement and the fear of failure, predisposing individuals to a different type of achievement goals. The achievement goals then affect the achievement-oriented behaviour of an individual (Elliot; in Neumeister, Finch, 2006). According to Hermans’s conception, the achievement motive is made up of four basic components, namely: the achievement-oriented behaviour, aspiration level, perseverance at work, and future time orientation (Pardel, Maršálová, Hrabovská, 1984). In our opinion, research on achievement motivation at the level of individual components of the achievement motive is meaningful also in relation to academic performance. Findings regarding a linear relationship between achievement motivation and academic performance are contradictory or mostly statistically insignificant (cf., the studies by: Kolb, 1965; Řehulková, Osecká, 1996; Skinner, J. M. Drake, 2003; Gurgová, 2005).

That was the reason why we decided to use cluster analysis, which helped us to identify empirical types and specific configurations of individual components of the achievement motive and level of academic performance.

**Research sample**

The aim of our research was to determine types of undergraduate students by their academic performance and individual aspects of the achievement motive. The research sample was obtained by targeted and occasional sampling, and consisted of 213 undergraduate students of social and technological majors in Banská Bystrica and Liptovský Mikuláš, with an average age of 20.5 years. The research sample was composed of 102 women and 111 men.

**Methods**

The method of our research consisted of the standardized AMQ – Achievement Motivation Questionnaire, constructed on the basis of Hermans’s conception of achievement motivation. The normalizing sample of undergraduate students was
calculated the following coefficients of internal reliability: 0.87 for the variable achievement motive, 0.85 for the variable anxiety with debilitating effects on performance, and 0.88 for the variable anxiety facilitating performance. Validity of the questionnaire was tested using Ehlers and Merz’s questionnaire for the measurement of achievement motivation and Spielberg’s questionnaire of anxiety as a trait. In both cases, sufficiently high correlation coefficients were produced, evidentiary for validity of the given type.

The questionnaire contains 52 items and consists of three scales: the scale of achievement motive (24 items), the scale of anxiety with debilitating effects on performance (17 items), and the scale of anxiety facilitating performance (10 items).

The achievement motive is characterized by the following aspects: **Achievement-oriented Behaviour**, consisting of 8 items such as: “I like to work”, or “My friends and acquaintances consider me diligent”; **Aspiration Level** consisting of 5 items such as: “I don't avoid work requiring responsibility” or “When I do something, it must be perfect”; **Perseverance at Work** consisting of 5 items: “Persistence is a very important characteristic” or “Once I have set to hard work, I can hardly stop”; **Future Time Orientation** consisting of 6 items, such as: “I like to plan” or “In general I’m focused on future”. The achievement motive scale is a relatively heterogeneous scale (Pardel, Maršálová, Hrabovská, 1984).

Due to the fact that there are certain contradictions in the conception of school success, we focused on actual school success operationally defined as good study results obtained by a student, measurable through the average of examination evaluations, thus as academic performance. Academic performance was used in measurements of school success by several authors, such as S. Shim and A. Ryan (2005), W. E. Kelly (2003), T. L. Clemons (2005), K. E. Barron et al. (2006) and others. Thus, school success was determined by means of the arithmetic mean of study results after an examination period of a relevant term, while taking into account also the evaluation Fx – failed. Numbers assigned to individual evaluation grades were as follows: A – 1, B – 1.5, C – 2, D – 2.5, E – 3, Fx – 4. The students were given the instruction to fill in the determined place in the questionnaire with the total average of their evaluations for the last term as displayed in the academic information system.

The quantitative data obtained were evaluated using the IBM computer program SPSS Statistics 19 and Microsoft Excel.
Methodological Issues of the Problem Addressed

To determine student types by academic performance and the achievement motive aspects including: achievement-oriented behaviour, aspiration level, perseverance at work and future time orientation, cluster analysis was used. In the cluster analysis, data were standardized to the z-score and a non-hierarchical analysis was used. Cluster analysis is a set of methods enabling one to look for clusters of similar objects – types in empirical data. L. Osecká (2001) states that the use of cluster analysis is particularly appropriate at the stage of problem exploration. As opposed to factor analysis, when using cluster analysis mostly no attention is given to basic dimensions of the description of the phenomena studied (variables), but attention is given to basic types of the studied phenomena as such (objects), their similarity or dissimilarity (although sometimes it is problematic to define what precisely the similarity is).

The most well-known non-hierarchical clustering method is the k-means method. This method is characteristic of producing an exact number of k clusters so that the intra-group sum of squares of distances of objects is minimal. It requires a priori setting of the number of clusters to be generated, and interval variables without extreme values as the input (Osecká, 2001). The mentioned k-means method was used also in the processing of our research data.

Results of Cluster Analysis by Academic Performance and Achievement Motive

The main aim of our research was to determine types of students by academic performance and by the aspects of the achievement motive including achievement-oriented behaviour, aspiration level, perseverance at work and future time orientation. The given aspects were obtained by item analysis within the achievement motive scale of the AMQ questionnaire. To overcome disunity of the scales (the scales measuring the achievement motive components did not offer respondents the same number of response options), the obtained raw scores were standardized. These standardized scores (so-called z-scores) with the mean value 0 and standard deviation 1 were processed by further statistical analysis. Non-hierarchical cluster analysis, the k-means method (in the statistical program SPSS) was used and a typology created gradually for three, four, five and six types or clusters.

Mean z-scores of the types in the three-cluster solution differ from each other the least in the variable of academic performance; the values oscillate around 0.
Profiles of the mean z-score of the 1st and the 2nd cluster are similar overall in all the variables studied except one – time orientation, while Type One shows lower future time orientation and Type Two – on the contrary – above-average high.

The variables of achievement-oriented behaviour, aspiration level and perseverance differentiate between Type One, Type Two and Type Three, however, these two types are similar in the level of time orientation.

**Table 1. Average z-scores for three types in the three-cluster solution**

<table>
<thead>
<tr>
<th></th>
<th>Type 1 (N=80)</th>
<th>Type 2 (N=73)</th>
<th>Type 3 (N=60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic performance</td>
<td>-0.01</td>
<td>0.05</td>
<td>-0.05</td>
</tr>
<tr>
<td>Achievement-oriented behaviour</td>
<td>-0.23</td>
<td>-0.51</td>
<td>0.93</td>
</tr>
<tr>
<td>Aspiration level</td>
<td>-0.27</td>
<td>-0.47</td>
<td>0.92</td>
</tr>
<tr>
<td>Perseverance</td>
<td>-0.21</td>
<td>-0.59</td>
<td>1.00</td>
</tr>
<tr>
<td>Time orientation</td>
<td>-0.33</td>
<td>3.03</td>
<td>2.85</td>
</tr>
</tbody>
</table>

**Graph 1. Three-cluster solution: profiles of average z-scores for the variables studied**

Legend: priemerné z-skóre = average z-scores; zhluk = cluster

Since the three-cluster solution appeared little specific, the process of cluster analysis was continued – a request for generation of four clusters was entered. The solution is presented in Table 2 and Graph 2.

Type One within the given solution is represented by students with – regarding the other respondents – worse academic performance, poorer achievement-oriented behaviour, an average aspiration level and lower perseverance, but good time orientation.
Type Two is characterized by above-average academic performance, but a low level of achievement-oriented behaviour and a low aspiration level, low perseverance as well as under-average future time orientation.

Type Three is distinguished by average academic performance and an above-average level of all achievement motive components, marked above-average is in the variable time orientation.

Type four is identified under-average (poorer) academic performance, a slightly above-average level of the achievement motive variables, and average time orientation.

**Table 2.** Average z-scores for four types in the four-cluster solution

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type 1 (N=71)</th>
<th>Type 2 (N=38)</th>
<th>Type 3 (N=50)</th>
<th>Type 4 (N=54)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic performance</td>
<td>-0.11</td>
<td>0.36</td>
<td>0.17</td>
<td>-0.27</td>
</tr>
<tr>
<td>Achievement-oriented behaviour</td>
<td>-0.35</td>
<td>-1.02</td>
<td>0.95</td>
<td>0.30</td>
</tr>
<tr>
<td>Aspiration level</td>
<td>-0.33</td>
<td>-1.05</td>
<td>0.97</td>
<td>0.28</td>
</tr>
<tr>
<td>Perseverance</td>
<td>-0.52</td>
<td>-0.84</td>
<td>1.13</td>
<td>0.23</td>
</tr>
<tr>
<td>Time orientation</td>
<td>3.17</td>
<td>-0.32</td>
<td>3.04</td>
<td>0.02</td>
</tr>
</tbody>
</table>

**Graph 2.** Four-cluster solution: average z-score profiles for the variables studied

Legend: priemerné z-skóre = average z-scores; zhluk = cluster

In the next – five-type – solution, again higher differentiation and specification of types was achieved against the previous one (Table 3, Graph 3).

Type One within the given solution may be marked as under-average in all the
variables studied. Thus, it is an unsuccessful as well as unmotivated student with low achievement motivation and a poor planning ability.

Type Two resembles Type Two generated within the previous solution (above-average academic performance, but an under-average level of other variables).

Type Three has average academic performance, but good indicators in the achievement motive items (especially as far as time orientation is concerned).

Type Four is distinguished by poorer academic performance, but above-average achievement motivation indicators (this type may be assumed to have insufficient abilities).

Type Five in the four-cluster solution is characterized by average academic performance, a lower level of achievement-oriented behaviour and perseverance, as well as a lower aspiration level, but is above-average concerned with future and plans ahead.

**Table 3.** Average z-scores for five types in the five-cluster solution

<table>
<thead>
<tr>
<th></th>
<th>Type 1 (N=28)</th>
<th>Type 2 (N=37)</th>
<th>Type 3 (N=34)</th>
<th>Type 4 (N=47)</th>
<th>Type 5 (N=67)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic performance</td>
<td>-0.62</td>
<td>0.64</td>
<td>0.08</td>
<td>-0.28</td>
<td>0.06</td>
</tr>
<tr>
<td>Achievement-oriented behaviour</td>
<td>-0.76</td>
<td>-0.44</td>
<td>0.92</td>
<td>0.83</td>
<td>-0.49</td>
</tr>
<tr>
<td>Aspiration level</td>
<td>-0.71</td>
<td>-0.40</td>
<td>0.87</td>
<td>0.74</td>
<td>-0.44</td>
</tr>
<tr>
<td>Perseverance</td>
<td>-1.06</td>
<td>0.09</td>
<td>1.07</td>
<td>0.64</td>
<td>-0.60</td>
</tr>
<tr>
<td>Time orientation</td>
<td>-0.48</td>
<td>-0.42</td>
<td>4.06</td>
<td>1.13</td>
<td>3.04</td>
</tr>
</tbody>
</table>

**Graph 3.** Five-cluster solution: average z-score profiles for the variables studied

Legend: priemerné z-skóre = average z-scores; zhluk = cluster
Refining and specification of the type profiles was continued by generating a six-cluster solution.

Type One is represented by the students with better academic performance in comparison with the others, but a lower aspiration level as well as a lower level of achievement-oriented behaviour and perseverance, and a slightly under-average level of future time orientation (this type is profiled almost identically with Type One in the previous – five-cluster – solution).

Type Two (analogous to Type Five of the previous solution) is characterized by average academic performance and poorer achievement-oriented behaviour, a lower aspiration level and perseverance, on the other hand, however, marked future time orientation.

Type Three is represented by the students with above-average academic performance and overall good achievement motive indicators (levels of achievement variables are about the same).

Type Four shows poorer academic performance, average achievement-oriented behaviour, an average aspiration level and perseverance, but under-average future time orientation.

Type Five has poor academic performance, average achievement-oriented behaviour, an average aspiration level and perseverance, but high future time orientation.

Type Six has slightly above-average academic performance, is the most markedly achievement-motivated when compared with the others and future time orientation also reaches the highest level in this type.

<table>
<thead>
<tr>
<th>Table 4. Average z-scores for six types in the six-cluster solution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Academic performance</td>
</tr>
<tr>
<td>Achievement-oriented behaviour</td>
</tr>
<tr>
<td>Aspiration level</td>
</tr>
<tr>
<td>Perseverance</td>
</tr>
<tr>
<td>Time orientation</td>
</tr>
</tbody>
</table>

The cluster structure of our sample was refined even further – a request was entered to generate a seven-cluster solution. However, based on the assessment of the statistic indicators examined (results of variance analysis within the individual
Typology of Undergraduate Students

solutions and standard deviations of the variables within individual clusters in the 5-, 6- and 7-cluster solutions) the six-cluster solution was preferred. This solution can, in our view, be considered also relatively clear and meaningful.

Next, we attempted to find other specifics of these six types by including in the analysis also the gender variable (as the so-called external variable, i.e. a variable not entering into the clustering process). It was found out that the gender variable differentiated in Type Three (Balanced) was composed mostly of men, and in Type Five (Academically Indifferent) was composed mostly of women.

Discussion

The typologies with three to six types were extracted gradually by means of non-hierarchical cluster analysis. For the sake of better clarity and comprehension as well as their simpler communicability, the types generated within the six-cluster solution were given names. Type One with the best academic performance, but the lowest level of all achievement variables was called the Type of Unused Potential. Type Two was called the Unbalanced Type due to the unbalanced levels of achievement variables. Type Three – with above-average academic performance as
well as above-average achievement variables was given the name of Balanced Type. This is precisely the type that seems to be ideal in terms of success achievement. Type Four, markedly characterized especially by under-average future time orientation, was called the Type Unoriented in Time. Type Five with poor academic performance, average achievement indicators, but high future time orientation was called the Academically Indifferent Type. Finally, Type Six, with the most marked achievement motivation, but basically just average academic performance, was called the Industrious Type.

On the basis of our findings, it may be stated that our research sample consists of students with above-average academic performance, but low achievement variables (Type 1), as well as students achieving an average to above-average level of achievement variables, but with an average or even under-average level of academic performance (Type 5 and Type 6). These findings bring out the issue of the generalized nature of achievement motivation. Some, even highly achievement motivated students, have poorer academic performance. Thus, it may be assumed that it is important for student achievement motivation to focus on learning tasks, academic success. B. Weiner (1990; as cited in: Bong, 2004) already argued that the original view on achievement motivation as a stable individual characteristic did not explain its situational variability, which may have manifested itself also in our case. That is the reason why we agree with M. Vaněk, V. Hošek and F. Man (1982), according to whom it may be assumed that instead of the conception of the generalized nature of achievement motivation, performance is influenced by a specific achievement motive focused on activities in which an individual feels, e.g. competent or which supports his/her interests.

**Conclusion**

The relationship between the achievement motivation components and academic performance was dealt with by several authors (Kolb, 1965; Řehulková, Osecká, 1996; Skinner, J. M. Drake, 2003; Gurgová, 2005). The relationship between the school-related self-concept (Engler-Meyer) and achievement motivation was dealt with by L. Ďuricová (2009), who pointed out mainly the negative consequences of high anxiety on an individual's self-concept. Z. Vašašová (2011) pointed out positive relationships between emotional experiencing and performance (in the area of creative activities). Academic performance and its various connections

From the point of view of educational practice, in addition to academic performance, also the individual aspects of achievement motive are important (achievement-oriented behaviour, aspiration level, perseverance at work, future time orientation). Our research pointed at the fact that undergraduate students include also types of students who, although having good academic performance, have a poor achievement motive, or students having poorer or average academic performance, but high levels of the achievement motive aspects. We believe that the ideal type of students are, of course, those who, on the one hand, achieve high results and, on the other hand, have a high aspiration level, perseverance at work and future time orientation, because these are the motives likely to predispose a student to success also in future practice, not only in the academic setting.

References
McLellan, R., Adey, P. (1999). Motivation style, commitment, and cognitive acceleration: Is it only good schools which opt into “successful” projects? Paper presented at the annual meeting of the american educational research association (Montreal, Quebec, Canada), 19–23 April. From EBSCO HOST.
Measurement of Cyber-Bullying Severity

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Abstract
The presented study presents results of research conducted in 2015 within the project of the Ministry of Education, Science, Research and Sport of the Slovak Republic VEGA No. 1/0244/15 Detection and Resolving Cyber-Bullying. The aim of the research was to find out and analyze levels of cyber-bullying severity. Participants in the research were 1118 respondents 11–18 years old (average age 15.25, SD 2.55) across the Slovak Republic. The severity of cyber-bullying was assessed through the GRM (Graded Response Model). The most severe forms of cyber-bullying were posting a mean video, creating a hurtful web-page and threats of bodily injury sent through a text message. The least severe forms were mean comments on the Internet, spreading rumours and posting mean or hurtful photographs of others.

Keywords: cyber-bullying, cyber-aggressor, cyber-victim, IRT model, cyber-bullying severity

Cyber-bullying – theoretical background

The issue of cyber-bullying has been paid attention to for some years. Cyber-bullying involves “the use of information and communication technologies to support deliberate, repeated and hostile behaviour by an individual or group, which is intended to harm others” (Belsey, B., 2008, p. 1). Distinguished authors dealing with cyber-bullying include P.K. Smith et al. (2008), E. Menesini et al. (2009, 2011), M. Vanucci et al. (2012), A. Brighi et al. (2012), P. Gradinger et al. (2012), A. Schultze-Krumbholz et al. (2015). In Slovakia and the Czech Republic,
the theoretical background of the issue has been dealt with by A. Kováčová (2013), I. Emmerová (2013, 2016), A. Hudecová and K. Kurčíková (2014), M. Niklová (2014), A. Černá et al. (2013), M. Valihorová and B. Holáková (2015), K. Kopecký (2016), and others. A significant amount of attention by the academic community and society at large is given to the definition of cyber-bullying. Despite several years’ study of individual aspects of cyber-bullying, considerable problems concerning its definition continue to exist (Hollá, K. 2016). The authors R.M. Kowalski et al. (2008) consider cyber-bullying a form of bullying. Individual assertions by authors, as well as research have confirmed that cyber-bullying correlates with traditional bullying (Del Rey, R., et al., 2012). The above has been opposed by J. Raskauskas, A.D. Stoltz (2007); P. Gradinger et al. (2009) and others claiming that cyber-bullying occurs independently of bullying. The reason is that not all boys and girls are capable of bullying face to face, thus they prefer doing harm through information and communication media.

Definitional criteria of bullying and cyber-bullying include (i) intentionality, (ii) repetition, and (iii) imbalance of power. There are opinions that such criteria may be applied to bullying as well as cyber-bullying. However, scientists are divided in their viewpoints regarding individual characteristics of bullying and cyber-bullying. So far it seems unambiguous that the common attribute of both behaviours is intentional harm done to an individual or group. While the traditional form of bullying is defined by repeated attacks during a certain time, cyber-bullying creates situations where it is difficult to determine repetition or a certain periodicity of the act. Even a single act of online aggressive behaviour can be considered as cyber-bullying. Repetition does not need to be inevitably caused by the cyber-aggressor, but the nature of new media should be taken into account (cf., Kowalski, R.M. et al. 2008, Naruskov, K. et al. 2012, Hollá, K., 2013, 2016). The imbalance of power as another characteristic of cyber-bullying may, on the one hand, reside in actors’ technological skills, on the other hand, in a higher status of the individual in the virtual community (Menesini, E., et al., 2009). However, in many cases the potential targets of attacks can intervene against cyber-bullying (by reporting the bully, blocking the bully, ending the communication), thus the imbalance of power is a debated attribute of cyber-bullying (for more details cf., Wolak, J., 2007).

Important features of cyber-bullying are anonymity and publicity of the cyber-act. Anonymity increases online aggression by allowing an individual to act in a disinhibited way (Wright, M.F., 2014) referring to loosening or abandonment of social restrictions and inhibitions when online. Anonymity and publicity are important elements accentuating the severity of cyber-bullying. It is important to
take the above theoretical background based on characteristics of cyber-bullying into consideration since it is precisely because of the conceptual ambiguity of cyber-bullying that individual research investigations yield different results.

**Measurement of cyber-bullying – methodological anchor**

For the purpose of empirical measurement of cyber-bullying, the *Cyber-bullying and Online Aggression* questionnaire (Hinduja, S., Patchin, J.W., 2009) was used. Permissions were obtained from the authors to use the questionnaire for the purpose of research into cyber-bullying in the Slovak Republic. The questionnaire was developed from the original *Cyber-bullying Assessment Instrument* questionnaire. Internal reliability, determined with the use of Cronbach’s alpha, returned the values of 0.926–0.935 in individual items of the cyber-victim scale and 0.956–0.969 in individual items of the cyber-aggressor scale (cf., Hinduja, S., Patchin, J.W., 2009). Translation of the questionnaire from the English language to the Slovak language was provided by two specialized translators. Subsequently, the first Slovak translation was done. The first translation was re-translated to the original – a reverse translation was done.

Reliability of the translated and modified research tool was calculated by Cronbach’s alpha in the SPSS program, where the cyber-victim scale yielded the coefficient value of 0.864 and the cyber-aggressor scale 0.905. The values of both scales show very good internal reliability of the research tool.

**Research aim and research sample**

The aim of the research investigation was to find out and analyze levels of cyber-bullying severity. Participants in the research conducted in 2015 were 1118 respondents 11–18 years old (average age 15.25, SD 2.55) across Slovakia. The majority of the respondents were from the region of Nitra (45.17 %). 509 boys and 609 girls participated in the research. As for the school type, 480 pupils (42.9%) attended elementary school and 638 (57.1%) secondary school. Cyber-bullying severity was determined and analyzed by the *Graded Response Model* (hereinafter referred to as GRM), also called the *Samejimin Model*. Results were analyzed with respect to the scale (0–4).
Research findings

Data were collected using the modified *Cyber-bullying and Online Aggression* questionnaire. The respondents’ responses to 16 questionnaire items were used as a basis. The first eight items (CA1 – CA8) were about online aggressive conduct of the participants in the last 30 days and the other eight (CV1 – CV8) were mirror pictures of the previous items, to find out whether the respondents were cyber-victims.

Table 1. Coding of questionnaire items

<table>
<thead>
<tr>
<th>Code</th>
<th>Wording</th>
<th>Code</th>
<th>Wording</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA1</td>
<td>Mean or hurtful comments</td>
<td>CV1</td>
<td>Mean or hurtful comments</td>
</tr>
<tr>
<td>CA2</td>
<td>Posting a photograph</td>
<td>CV2</td>
<td>Posting a photograph</td>
</tr>
<tr>
<td>CA3</td>
<td>Posting a video on the net</td>
<td>CV3</td>
<td>Posting a video on the net</td>
</tr>
<tr>
<td>CA4</td>
<td>Mean web-page</td>
<td>CV4</td>
<td>Mean web-page</td>
</tr>
<tr>
<td>CA5</td>
<td>Spreading rumours</td>
<td>CV5</td>
<td>Spreading rumours</td>
</tr>
<tr>
<td>CA6</td>
<td>Threats through text messages</td>
<td>CV6</td>
<td>Threats through text messages</td>
</tr>
<tr>
<td>CA7</td>
<td>Threats through the Internet</td>
<td>CV7</td>
<td>Threats through the Internet</td>
</tr>
<tr>
<td>CA8</td>
<td>Impersonation</td>
<td>CV8</td>
<td>Impersonation</td>
</tr>
</tbody>
</table>

A question in the effort to measure the level of “cyber-bullying” in individual respondents was whether cyber-bullying has sub-dimensions or it is a mono-dimensional construct where various forms of conduct represent various levels of severity. The structure of cyber-bullying was examined using confirmatory factor analysis (CFA). Two multi-item scales were created (cf., Table 1). The appropriateness of the model used was assessed by the following criteria: chi square ($\chi^2$), RMSEA (Root Mean Square Error of Approximation), CFI (Comparative Fit Index). For RMSEA, the maximum recommended values for a model to be still considered appropriate are 0.08 (Brown, M.W., Cude, R., 1993) or 0.06 (Hu, L., Bentler, P.M., 1998); for CFI the minimum recommended values are 0.90 (Bollen, K.A., 1989) or 0.95 (Hu, L., Bentler, P.M., 1998). Measurement using the CFA method indicated that the structure of the cyber-aggressor – cyber-victim scale was represented the best by a mono-dimensional model.

Thus, the cyber-bullying construct may be interpreted as a mono-dimensional measure where all items lie on a continuum of severity of cyber-bullying acts. The
values in Table 2 show that the mono-dimensional model is appropriate for the cyber-aggressor – cyber-victim scale.

### Table 2. CFA quality measures

<table>
<thead>
<tr>
<th></th>
<th>$\chi^2$</th>
<th>df</th>
<th>$p$</th>
<th>CFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyber-aggressor</td>
<td>231.60</td>
<td>20</td>
<td>&lt;0.001</td>
<td>0.961</td>
<td>0.097</td>
</tr>
<tr>
<td>Cyber-victim</td>
<td>253.61</td>
<td>20</td>
<td>&lt;0.001</td>
<td>0.947</td>
<td>0.102</td>
</tr>
</tbody>
</table>

(CFI = Comparative Fit Index, RMSEA = Root Mean Square Error of Approximation)

To find out the relationship between a pupil’s response to the item and his/her position on the cyber-aggressor – cyber-victim scale, the GRM was used. Within the given model, each item can be characterized by a **discrimination parameter** and a set of **categorical thresholds** with the number of thresholds fewer than the number of acceptable responses to the item by one (in our case, there are five possible responses 0–4, thus there are four thresholds for each item). Marginal categorical thresholds give values of the latent variable at which the probability of marginal responses (in our case 0–4) equals 0.5 (50%). In the case of other response categories, categorical thresholds enable to determine the mode of the relevant categorical response function, thus the value on the latent variable scale at which the probability of the given response is the highest. It also holds that higher values of categorical thresholds may indicate that the item is connected with higher risk of cyber-bullying perpetration or risk of cyber-victimization.

Values in Table 3 show that all of the eight items on the cyber-aggressor scale discriminate very well because the values of discrimination parameters fluctuate from 2.01 (CA1) to 4.91 (CA3). Since the value of discrimination parameter of each item is higher than 1.00, it indicates a strong relationship between the items and the latent variable (cyber-aggressor). Relatively high values of factor loadings (from 0.74 to 0.95) indicate a strong relationship between the latent variable and frequency of aggressive behaviour in the cyber-space.

The results show that the most frequent forms of cyber-bullying perpetration were mean or hurtful comments on the Internet (CA1), spreading rumours (CA5), and posting mean or hurtful photographs online (CA2). On the contrary, the least frequent forms were posting a mean video online (CA3), creating a hurtful web-page about a person (C4), and threats sent through text messages (C6). The relatively high positive values of categorical threshold $b_1$ in all items, but in particular in items CA2, CA3, CA4, CA6, CA7, CA8 show that these forms of cyber-bullying were perpetrated by respondents with a very high value of the latent variable (cyber-aggressor).
<table>
<thead>
<tr>
<th>Code</th>
<th>Responses</th>
<th>FZ</th>
<th>a (SE)</th>
<th>b1 (SE)</th>
<th>b2 (SE)</th>
<th>b3 (SE)</th>
<th>B4 (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA1</td>
<td>761</td>
<td>218</td>
<td>2 3 4 11</td>
<td>0.74</td>
<td>2.01</td>
<td>1.28</td>
<td>3.10</td>
</tr>
<tr>
<td></td>
<td>241</td>
<td>189</td>
<td></td>
<td>(0.16)</td>
<td>(0.12)</td>
<td>(0.18)</td>
<td>(0.25)</td>
</tr>
<tr>
<td>CA2</td>
<td>983</td>
<td>96</td>
<td>29 8 2</td>
<td>0.88</td>
<td>3.49</td>
<td>4.59</td>
<td>6.92</td>
</tr>
<tr>
<td></td>
<td>248</td>
<td>251</td>
<td></td>
<td>(0.41)</td>
<td>(0.47)</td>
<td>(0.61)</td>
<td>(0.79)</td>
</tr>
<tr>
<td>CA3</td>
<td>1068</td>
<td>31</td>
<td>12 4 3</td>
<td>0.93</td>
<td>4.91</td>
<td>8.57</td>
<td>10.64</td>
</tr>
<tr>
<td></td>
<td>255</td>
<td>251</td>
<td></td>
<td>(0.76)</td>
<td>(1.12)</td>
<td>(1.40)</td>
<td>(1.71)</td>
</tr>
<tr>
<td>CA4</td>
<td>1082</td>
<td>23</td>
<td>9 1 3</td>
<td>0.92</td>
<td>4.14</td>
<td>8.03</td>
<td>9.88</td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>251</td>
<td></td>
<td>(0.90)</td>
<td>(1.40)</td>
<td>(1.65)</td>
<td>(2.04)</td>
</tr>
<tr>
<td>CA5</td>
<td>879</td>
<td>145</td>
<td>68 22 4</td>
<td>0.81</td>
<td>2.61</td>
<td>2.54</td>
<td>4.33</td>
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<td>(0.20)</td>
<td>(0.18)</td>
<td>(0.25)</td>
<td>(0.34)</td>
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<tr>
<td>CA6</td>
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<td>4 2 2</td>
<td>0.95</td>
<td>4.28</td>
<td>7.91</td>
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<td>(1.28)</td>
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</tr>
<tr>
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<td>5.55</td>
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<td>250</td>
<td>251</td>
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<tr>
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<td>1021</td>
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<td>(0.37)</td>
<td>(0.43)</td>
<td>(0.58)</td>
<td>(0.89)</td>
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</table>

Note: item discrimination parameter, item severity for the cyber-aggressor, FL = factor loadings – correlation of the latent variable with the item, a – discrimination parameter, b1 – b4 – categorical thresholds, SE – standard error of parameter estimate.

A similar method was used to assess items on the cyber-victim scale. The values in Table 4 show that all eight items in the cyber-victim scale discriminate very well because the values of discrimination parameters fluctuate from 1.83 (CA1) to 3.47 (CA4). The value of the discrimination parameter of each item is higher than 1.00, which indicates a strong relationship between the items and the latent variable (cyber-victim). Relatively high values of factor loadings (from 0.71 to 0.88) indicate a strong relationship between the latent variable and the frequency of being cyber-victimized.

The respondents were most frequently cyber-victimized through mean or hurtful comments (CV1) and spreading rumours online (CV5). The least frequent forms faced by the respondents as victims in the cyberspace were a hurtful video posted on the Internet (CV3) and creation of a mean or hurtful web-page about the individual (CV6). The categorical threshold b1 has a relatively high values in items CV2, CV3, CV4, CV5, CV6, CV7, CV8, from which it follows that these were the forms of cyber-bullying to which the pupils with a very high value of the latent variable were exposed (cyber-victim).
### Table 4. Severity of cyber-bullying on the cyber-victim scale

<table>
<thead>
<tr>
<th>Code</th>
<th>Response</th>
<th>FZ</th>
<th>a (SE)</th>
<th>b1 (SE)</th>
<th>b2 (SE)</th>
<th>b3 (SE)</th>
<th>b4 (SE)</th>
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<tr>
<td>CV1</td>
<td>695</td>
<td>219</td>
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<td>CV2</td>
<td>902</td>
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<td>5.91</td>
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<td>CV3</td>
<td>1043</td>
<td>48</td>
<td>21</td>
<td>6</td>
<td>0</td>
<td>0.88</td>
<td>(0.47)</td>
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<td>CV4</td>
<td>1073</td>
<td>22</td>
<td>16</td>
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<td>7.72</td>
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</table>

Note: item discrimination parameter, item severity for the cyber-victim, FL = factor loadings – correlation of the latent variable with the item, a – discrimination parameter, b1 – b4 – categorical thresholds, SE – standard error of parameter estimate, N/A – the value could not be estimated because none of the respondents gave the response “4”.

### Conclusions and interpretation

The issue of cyber-bullying as a world-wide phenomenon is vast. The research aim was to analyze the measured different levels of cyber-bullying severity. The research investigation proved that the most frequent method of cyber-bullying perpetration was posting rude (mean and hurtful) remarks and comments in the cyberspace. 19.5% of the respondents had used this form of cyber-bullying at least once. A very similar form of cyber-bullying is spreading rumours, used at least once in 30 days by 13% of the respondents. Another cyber-bullying form used was posting a mean and hurtful photograph in the cyberspace. This method of doing harm was used by 8.6% of the respondents. Posting mean and hurtful remarks and comments, mean photographs and spreading rumours in the cyberspace belonged also to the least severe cyber-bullying forms (cf., Table 3 and the threshold values b1 – b4). It may be assumed that the given forms of cyber-bullying are used by the
current generation because they are easy to use in information-communication media and because of easy access to the Internet.

As mentioned above, the least frequent methods of online bullying included posting a mean video on the Internet. This method was used by 2.7% of the respondents at least once in 30 days. This form belongs to the most severe, with the standard error of parameter estimate on scale 4 (four and more times) achieving the value of 15.16. For a respondent with the cyber-aggressor level of 8.57, there was a 0.5 (50%) probability that he/she would not perpetuate this method of online bullying. Other least used, while also the most severe, forms include:

- Threats sent through text messages, used by 3% of the respondents, with the maximum value of difficulty of 14.00 on scale 4;
- Creation of a hurtful web-page about a person, used by 2% of the respondents, with the maximum value of difficulty of 13.250 on scale 4;

In the case of cyber-victims it showed that the most frequent methods they were bullied by were spreading rumours on the Internet and mean and hurtful remarks and comments. 20.5% of the respondents faced rumours online at least once a month. 19.6% of the respondents were contacted with the second form of cyber-bullying, mean and hurtful remarks and comments.

The most severe forms of harassment in the cyber-environment, threatening the respondents at least once a month, were threats through text messages (almost 7%), posting a mean or hurtful video on the Internet (4.3%), and creation of a mean web-page about an individual (almost 2%). In the case of a mean or hurtful video posted online, there was even a 0.5 (50%) probability for the respondent with the cyber-victim level of 5.48 that he/she was exposed to this form of bullying in the last 30 days. It holds that the most frequently used forms of cyber-bullying were considered as the least severe by the respondents. And vice-versa, the least used forms of cyber-bullying were considered as the most severe.

Reasons for the severity of individual forms of cyber-bullying should be studied more deeply. It seems that threats through text messages are a little used method because of the criminal nature of the online act and possibility to present the text messages to prosecuting authorities. Creation of a web-page to cause damage to a person is prevented by the cost of web domains. In our opinion, online impersonation intended to cause damage to a person is particularly severe. This form of cyber-bullying was encountered by 12.8% of the respondents at least once a month and used by 6.44% of the respondents at least once a month. The user of this form pretends to be his/her victim, assumes his/her cyber-identity and subsequently posts online information causing damage to the victim. Severity of this form can be seen precisely in ruining the victim’s reputation among friends and
acquaintances; the victim loses friends and withdraws into him/herself. The loss of social contact, ridicule and humiliation as a psychological form of doing harm has far reaching consequences for the victim. Despite the fact that we managed to determine the severity of individual cyber-bullying acts, from the less severe to the most severe ones, it must be pointed out that each form is a threat to the victim, but also to the cyber-bully, and not least to the people around them. The above findings are a challenge to educational practice.

References


Influence of School Factors on Students’ Sense of School Belonging

DOI: 10.15804/tner.2017.47.1.03

Abstract
Sense of school belonging is related to school/classroom social membership. Students’ sense of school belonging depends on teachers, classmates and parents, and arises from a positive interpersonal relationship based on care and support, which contributes to students’ sense of community. The scientific problem analysed in the article is defined by the following question: which factors of school educational environment are significant for the sense of school belonging and social membership to arise? The databases of tests, student and school questionnaires of the OECD PISA worldwide study were used for the survey. 4618 students aged 15 from 216 general and vocational schools of Lithuania participated in the survey. Analysis of data showed that some factors of school educational environment have a positive, while other ones – negative relation to the sense of school belonging.

Keywords: sense of school belonging, school environment, social membership, school influence

Introduction
Sense of school belonging is a concept which defines the extent to which students feel personally accepted, respected, involved in common activity and supported by teachers, other community members in the school environment, how much and in what way their individuality is regarded in decision making.
The sense of school belonging shows the extent to which students are involved in school activity, have an opportunity to make decisions, have a valuable relationship with teachers and other students, feel support and assistance (Juvonen, 2006). A deeper sense of school belonging enhances a positive impact of school, empathy, self-respect, optimism, and a subjective sense of happiness (Anderman, 2002; Battistich, et al., 1997, 1995), and encourages students’ participation in school life (Freeman, et al., 2007). This sense primarily depends on teachers, then – on the level of acceptance and appraisal by classmates and parents, which is related to the sense of relatedness (Furrer, Skinner, 2003).

Sense of school belonging is related to the student’s well-being, self-esteem in organisation, subjective self-assessment related to the sense of respect, acceptance at school and identity, i.e., school/class social membership (Goodenow, 1993). School structural organisation, teachers’ assistance, fostering of social values – these are the positive factors which are associated with the sense of school belonging (Anderman, 2002; Freeman, et al., 2007; Battistich, et al., 2010).

The following three factors are important for the sense of school belonging (Albert, 2012): communication, opportunity and participation. Firstly, the student must be provided with proper conditions to study and improve his/her skills. The possibility of the child to adapt to the school environment, get accustomed to it and become a part of it depends on the provided opportunities for education, involvement and encouragement to participate in the educational process, feeling of positive emotional and social relation. The teacher is responsible for ensuring proper student activity, possibility to contribute to class/school activity and feeling recognized for the contribution made (Albert, 2012).

Secondly, the quality of participation in the educational process is very important. The sense of school belonging is fostered only by the student’s participation which gives him/her a positive learning experience and makes him/her feel good. The teacher’s assignments must help the child to feel able to achieve the set goal, receive help and support (Albert, 2012).

Thirdly, neither proper opportunities nor participation itself will contribute to the sense of school belonging if there is no positive relationship between the teacher and the student. The teacher is a role model for the student. Favourable communication culture between the teacher and the student must be fostered because successful communication results in the achievement of the set goals. The student understands and comprehends only when he/she wants to: “kids don’t learn from people they don’t like” (Pierson, 2013-TED talks). When there is no positive interpersonal relationship, it is hard to convey information and encourage the child to do something not forcibly but through understanding of benefit.
One of the key roles in fostering the sense of school belonging is attributed to the teacher and school in general. Researchers (Harter, 1996) established that children from families in need and socially disadvantaged families may sometimes have an even unnaturally absolutized sense of school belonging, i.e., teachers may compensate for the lack of parents’ support. Lack of an interpersonal relationship and favourable microclimate may have a negative impact on students’ self-perception, satisfaction with life and their wish to study. A good relationship of the teacher and the student with school, teachers and peers influences students’ inclination to progress, fully-fledged membership in a social group (Green, et al., 2016, Durlak, et al., 2011), creates motivation; the student feels comfort and support when difficulties arise. Moreover, help in dealing with problems develops resilience and self-reliance when facing new problems.

The conclusions of studies and perceptions of various researchers and conceptualization of the sense of school belonging allows for distinguishing the key components of this concept:

- Interpersonal relationship (connection) between students and teachers increases the student’s self-confidence, creates a sense of security (Libbey, 2004);
- Educational contribution: teachers must contribute to the provision of proper conditions for students’ self-realization (Green, et al., 2016, Zins, et al., 2004);
- Capability: students must and can contribute to school activity, make decisions and feel positively evaluated by teachers and peers (Battistich, et al. 2010; Furrer, Skinner, 2003).

Students’ sense of school belonging, also called school connectedness (Resnick 1997), is displayed through a positive interpersonal relationship (Baumeister, Leary, 1995) and identification with school (Finn, 1989). Both subjective evaluation of children and practical factors which contribute to enhancing the student’s sense of school community and in which interpersonal relationships are based on care and support allowing the student to make a decision are important (Battistich, et al., 2010). Therefore, the sense of school belonging means that the child is willingly involved in school life, maintains contacts with the community (both teachers and students) and feels supported, assisted, understood and respected.

The purpose of the survey was to determine the school educational environment factors which influence the sense of school belonging of Lithuanian students based on the OECD PISA survey data.

The scientific problem is determined by the following questions: Which factors are significant to the sense of school belonging of Lithuanian students? How
important is the influence of school and teachers for the sense of belonging and social membership to arise?

**Research Methodology**

The Lithuanian database of student questionnaires of the OECD PISA 2012 worldwide study on 15-year-old students was used for the survey. The variables selected for the analysis were related to the construct of the sense of school belonging, those comprising this construct or influencing it. The results of the OECD PISA 2015 are already available now, yet in 2015, the study on the sense of school belonging was not so wide: the data collection instrument provides fewer features attributed to the construct of the sense of school belonging.

**Survey sample.** In 2012, 4618 students from 216 general and vocational schools of Lithuania participated in the international survey on 15-year-old students. **School sample type** – a systematic probability sample according to the type of school location, school size and language of study. All the types of schools (lower secondary schools, secondary schools, middle schools, vocational schools) in all the types of locations (capital, cities, towns and villages) with all the predominant languages of study (Lithuanian, Russian and Polish) were selected for the survey. **Student sample type** – a systematic probability sample within the school according to form and language of study. 2–30 students aged 15 (different forms and different languages of study) from each school participated in the survey. Only 15-year-old students participated in the survey, irrespective of the form, starting from the 7th form.

**Methods.** During the OECD PISA study, the data were collected by means of tests and questionnaires (methodology thereof is described in the *PISA 2012 Technical Report* (OECD, 2014)). Computer technologies were used for filling in the tests and questionnaires. The methods of analysis of the survey data applied in this article are factor analysis, independent samples T-test, linear regression and graphic representation. IBM SPSS 24 software was used for data analysis.

**Survey ethics.** The schools and students participated in the OECD PISA survey voluntarily according to the requirements set by the OECD. The students were tested by external persons who were not related to the schools participating in the survey. During the survey organization and data analysis students’ and schools’ anonymity was fully ensured. Data were analysed and results were provided as aggregated countrywide data only.

**Calculation of an index of the sense of school belonging.** The features used for the sense of school belonging in the OECD PISA are presented in the second
column of Table 1. Questions were provided to the students in the form of a Likert scale. The semantics of some features is positive, while that of other features – negative; therefore, the negative semantics data were recoded conversely. In the table, the recoded estimates are marked (+). A factor analysis method was used for the calculation of an index of the sense of school belonging.

<table>
<thead>
<tr>
<th>Construct of an index of the sense of school belonging</th>
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<tbody>
<tr>
<td><strong>Index of sense of school belonging</strong></td>
</tr>
<tr>
<td><em>(Cronbach alpha = 0.81, KMO = 0.82, Barlett’s test: p&lt;0.0001)</em></td>
</tr>
<tr>
<td>Component</td>
</tr>
<tr>
<td>I feel like an outsider (or left out of things) at school (+)</td>
</tr>
<tr>
<td>I make friends easily at school</td>
</tr>
<tr>
<td>I feel like I belong at school</td>
</tr>
<tr>
<td>I feel awkward and out of place in my school (+)</td>
</tr>
<tr>
<td>Other students seem to like me</td>
</tr>
<tr>
<td>I feel lonely at school (+)</td>
</tr>
<tr>
<td>I feel happy at school</td>
</tr>
<tr>
<td>Things are ideal in my school</td>
</tr>
<tr>
<td>I am satisfied with my school</td>
</tr>
</tbody>
</table>

The parameters provided in Table 1 show that the features analysed are interdependent and suitable for factor analysis: the values of the parameters of Kaiser-Meyer-Olkin measure and Barlett’s sphericity criterion are great (0.82 and p<0.0001 respectively). Compatibility of the features is also high (Cronbach’s alpha = 0.81).

**Results and Discussion**

Which factors related to school, teachers and learning are connected with the sense of school belonging and influence it?

One of the strongest connections with the sense of school belonging was observed in the teacher-student relation factor. In the OECD PISA survey, there are a number of features provided in the student questionnaire which are related to teacher-student relation. Questions for students were formulated in the form of a Likert scale. A factor analysis method was used for the calculation of the teacher-student relation index (cf., Table 2).

The parameters in Table 2 show that the features analysed are interdependent and suitable for factor analysis: the values of the parameters of Kaiser-Mey-
Rita Dukynaitė, Jolita Dudaitė

The er-Olkin measure and Barlett’s sphericity criterion are high (0.83 and p<0.0001 respectively). Factor component coefficients and compatibility of the features are also high (Cronbach’s alpha = 0.82).

Regression was calculated to estimate the connection of the teacher-student relation with the sense of school belonging. The regression formula is as follows:

\[
\text{sense of school belonging} = 0.001 + 0.431x + e, \quad p<0.0001; \quad R^2 = 0.19
\]

Visual representation of the connection is shown in Figure 1.

**Table 2. Construct of teacher-student relation index**

<table>
<thead>
<tr>
<th>Teacher-student relation index (Cronbach’s alpha = 0.82, KMO = 0.83, Barlett’s test: p&lt;0.0001)</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students get along well with most teachers</td>
<td>0.73</td>
</tr>
<tr>
<td>Most teachers are interested in students’ well-being</td>
<td>0.76</td>
</tr>
<tr>
<td>Most of my teachers really listen to what I have to say</td>
<td>0.80</td>
</tr>
<tr>
<td>If I need extra help, I will receive it from my teachers</td>
<td>0.77</td>
</tr>
<tr>
<td>Most of my teachers treat me fairly</td>
<td>0.76</td>
</tr>
</tbody>
</table>

As shown in Figure 1, the connection between the sense of school belonging and the teacher-student relation is high. This connection corresponds to other researchers’ results revealing that the sense of school belonging primarily depends on teachers (Furrer, Skinner, 2003).
Analysis of other school factors showed that the sense of school belonging is connected with school type. Figure 2 shows the averages of the index of the sense of school belonging with confidence intervals according to school type. As can be seen, the average strength of the sense of school belonging of students of different school types differs. The average indices of the sense of school belonging of students of lower secondary schools are similar and are the lowest ones, compared to all the other school types. The average sense of school belonging of the students of secondary school is significantly higher and that of middle school students – even higher (the results of the application of independent samples T-test show that the averages of the index of the sense of school belonging of the students of lower secondary school, secondary school and middle school statistically significantly differ: p<0.0001).

Nothing certain can be said about the average strength of the sense of school belonging of the students of vocational school due to too high confidence interval (students of vocational school accounted for a small proportion in the survey sample). The results show that at the schools which do not have the highest forms (lower secondary school), the students have less feeling of being a part of the school community. It can be assumed that this can be related to the fact that 15-year-old students of lower secondary school are already finishing school, while 15-year-old students attending secondary school or middle school still have several years of
studies ahead of them at school and thus they associate their future and identify themselves with school more.

It is interesting to note that analysis of the students’ academic achievement and connection thereof with various school factors also reveals the connection of the students’ achievements with the school type and this connection is statistically significant. The connection of achievements with school type is obtained in the OECD PISA, IEA TIMSS and IEA PIRLS surveys.

Other factors for which a significant connection with the students’ sense of school belonging was observed were truancy and being late for school. During the survey, the students were asked how many times over the last two weeks they had been absent from school for a day without due cause, had skipped several lessons without due cause and had been late for school. The results are presented in Figures 3–5.

Figures 3 and 4 show the obvious relation between school and skipping of lessons without due cause and the sense of school belonging – the more often a student skips lessons or is absent from school the weaker his/her sense of school belonging is (lower index values). All these differences are statistically significant (independent samples T-test p<0.0001 in all the cases, except between skipping of lessons without due cause 1–2 and 3–4 times; independent samples T-test p<0.01 between differences in the averages of skipping of lessons without due cause 1–2
Figure 4. Connection of sense of school belonging with skipping of lessons

Figure 5. Connection of sense of school belonging with being late for school
and 3–4 times). Figure 5 shows the same trend – the more often a student is late for school the weaker his/her sense of school belonging is (independent samples T-test p<0.0001 between all the differences in averages, except that between being late for school 3–4 and 5 and more times – in this case, there were no statistically significant differences in averages obtained, p≥0.05).

These results can be interpreted in two ways – being late for school and skipping of lessons have a negative impact on the formation of the student’s sense of school belonging, or if the student does not feel good at school and does not have a feeling of being part of it then he/she has no wish to go to school, skips lessons and is late for school. Similar result was obtained in the case when the student must stay in the same form for the second year to repeat the study course – the sense of school belonging of the students who have been left in the same form for another year or longer is significantly weaker than that of the students who have never repeated the study course for the second year (cf., Figures 6–7; independent samples T-test p<0.0001 between all the differences in the averages, except those between the students who have not been left for the second year in the 5th–10th forms and the students who have been left in the same form for the second year in the 5th–10th forms once – in this case the independent samples T-test p<0.001). This result can also be interpreted in two ways: leaving a student in the same form for the second year has a negative impact on the formation of his/her sense of school belonging, or if a student does not feel good at school and does not have a feeling of being part of it then he/she shows no effort and has no motivation to study.

Analysis of various activities organised for students by their schools and the connection of such activities with the sense of school belonging revealed a statistically significant connection only with one activity – the students have a stronger sense of school belonging when school allows the students to engage in voluntary work, serve the poor, the sick and children (cf., Figure 8). A statistically significant connection with the sense of school belonging was not observed for any other activities organised by school, such as music groups, orchestra or choir, plays or musicals, publication of a school yearbook, newspaper or magazine, competitions, school contests, clubs (e.g.: chess, maths, computer), workshops, or sport teams.
**Figure 6.** Connection of sense of school belonging with staying in the 1st–4th forms for the second year

**Figure 7.** Connection of sense of school belonging with staying in the 5th–10th forms for the second year
Figure 8 shows that the students of the schools which provide an opportunity to engage in voluntary work feel a stronger connection with school than those of the schools which do not organise voluntary activities or do not allow for engaging in such activities. This difference is statistically significant (independent samples T-test p<0.001).

It is interesting that among various activities organized by schools, a connection with the sense of school belonging was observed only for one activity – organisation of voluntary activities. Compared to other activities offered at schools (workshops, school contests, sports, competitions, etc.), voluntary work is the least competitive activity – perhaps that is why the activity which does not encourage competition allows for seeing the other person most clearly, feeling needed and feeling communion with others.

Analysis of other factors of the school educational environment with the sense of school belonging did not reveal any other statistically significant connections. Connection of the following factors with the sense of school belonging was analysed: school subordination (private or public school), school location (capital, city, town, village), size (according to the number of students), size of classes, teachers’ education, lack of teachers of certain subjects, school resources (e.g.: number
of computers), lack of school resources (e.g.: lack of textbooks), convenience of school premises, differentiation of students by their skills, parents involvement in school life, etc.

**Conclusions**

The concept of sense of school belonging is defined by including several important components: a relation between teachers and students, which enhances self-confidence and creates a sense of security; assistance of teachers, provision of proper conditions for self-realisation to students; opportunity for students to contribute to school activity and feel positively evaluated by teachers and peers.

The following factors of the school educational environment have a statistically significant positive connection with students’ sense of school belonging: teacher-student relation, school type, opportunity for students to engage in voluntary work and serve others as extracurricular activities. The following factors of the school educational environment have a statistically significant negative connection with students’ sense of school belonging: skipping of lessons without due cause, being late for school, and staying in the same form for the second year.

**References**


Durlak, J.A., et al. (2011). The impact of enhancing students’ social and emotional learning:
The Hierarchy of Values among Young People from Schools in the Mountainous Regions
(Comparative study on the example of Poland and Ukraine)

DOI: 10.15804/tner.2017.47.1.04

Abstract
The issue of values in the education of young people is always relevant in the pedagogical literature. The main purpose of this article is to show the hierarchy of values of young people aged 12–15. The problem of the meaning of values in the lives of young people will be presented on the basis of our own research conducted among students from the Myślenice district (Poland) and Nadvirna district of the Ivano-Frankivsk region (Ukraine).

Keywords: youth, value, hierarchy of values, mountainous regions

Introduction

In terms of integration into the European education system, the question of innovative enrichment of the educational process arises. Globalisation determines the assimilation of cultures, which is why there appear a lot of questions concerning such issues as: formation of universal and national values of young people, providing students from different states with multicultural education and constructive coexistence of human beings and the world (Mazur, 2009).

In the process of children and young people education, we always want to achieve some desired goal, which represents a value for society or for the individual. Therefore, we can say that there is no “worthless” education. Every educational activity assumes the implementation or achieving a value, otherwise this activity would not make any sense (Kotłowski, 1968, p. 33).
These values are of great importance in the whole educational process. It is the values that define a common direction for both the teacher and the pupil. They make it possible to overcome difficulties on the way to growing up for humanity (Budnyk, 2016). In the era of today’s discussions on education and upbringing it is worth recalling the good point, preached by K. Chałas, that there is no education without values. In her opinion, “education without values becomes an empty bell, and even when swaying strongly, it does not sound in the expected way. Education must lead to the depths of humanity, which is the content of a person’s life and his/her integral development, which is ultimately determined by the materialisation of the highest values and desire for the Absolute” (Chałas, 2003, pp. 41–42).

There is a great number of educational tasks that are considered to be important, mainly the formation of young people’s high spiritual values and sense of being a citizen of our Planet, through the sense of being a citizen of the country, the host of this country with the proper attitude toward the native land, language, history, religion, culture, respect for national values, national symbols, etc. (Mazur, Oleksa, 2010).

That is why as “values” we consider everything that is particularly meaningful and important for us in terms of our objectives, interests, needs, communication, etc. Thus, “values” is a subjective category, because things that are valuable for one person may be completely insignificant for another one. That is why there is a formal division of values into subjective and objective, absolute and relative, positive and negative.

The value system of the individual is constituted by the “conscious semantic formation of different levels of generality” (Bech, 2015, pp. 19–22). The most common classification of values is their division into terminal and instrumental ones.

At the same time, depending on the relationship of man to the world, the object of his perception of values, they are divided into material and spiritual ones; depending on the level of generality – into concrete and the abstract ones; depending on the way of identifying – into situational and stable ones. A quite common classification of values divides them depending on the criterion of membership: personal (individual), group (collective) social, national and universal values.

The features of the Personal Values Formation in the Mountain Province

The mountain region of the Ukrainian and Polish Carpathians is characterised by specific features: colourful nature contributes to the accumulation of vast expe-
rience of communication with nature, which results in preserving old traditions formed over the centuries: careful management, spirituality and a respectful attitude to the world. The traditional crafts, progressive ritual traditions that certainly serve as an effective factor in the harmonious development of the child have been sufficiently preserved here.

In the school located in the mountains the influence of the landscape-geographical and ethno-cultural environment on the establishment and development of the personal values of growing personality (moral, civic, aesthetic) can be clearly observed. The spirituality of the young person operates in this context (Budnyk, 2014, p. 22).

According to Maslow, “the only known way to prevent a distorted perception of nature, society or ourselves through human values is always being aware of these values, understanding their impact on the perception and making appropriate corrections thanks to such an understanding” (Maslow, 2006).

In the schools located in the Polish and Ukrainian Carpathians we have a lot of potential opportunities to familiarise students with valuable natural resources and unique spiritual and cultural traditions. Therefore, these regions are especially characterised by a number of socio-economic (unemployment, poverty, instability, external migration of the adult population, lower birth rates) and environmental problems (floods, deforestation, etc.). To some extent, such issues affect the quality of education so acutely that there arises the problem of revival and creation of authentic spiritual and moral values of the young person, based on the ideals of truth, goodness, beauty, freedom, education for the real citizen and landlord.

The aim of the study was to make a comparative analysis of the priority values of modern teenage students in mountainous areas of Poland and Ukraine, basing on our own experimental study.

**Research Methodology**

**General Background of Research**

The research is comparative. It summarizes data from two mountainous regions – the Myślenice district (Poland) and the Nadvirna district (Ivano-Frankivsk region, Ukraine). The aim of the research was to learn and compare views of junior high school students from the Myślenice district and the mountainous part of the Ivano-Frankivsk region on their personal hierarchy of values. The main problem of the research was to determine the system of values shared
by the junior high school students: which of the values are dominant and which of them are peripheral.

Instrument and Procedures
The primary research tool was *The scale of assessment of the preferred values* based on the technique developed by P. Oleś (1989), consisting of a catalogue that included the names of 27 different values. Participation in the survey was anonymous. The questionnaires were prepared for junior high school students. The survey was conducted in May and June 2016 in randomly selected schools from the Myślenice district (Poland) and the mountainous part of the Ivano-Frankivsk region (Ukraine). Selection of the research sample was random. The study attracted the same number of boys and girls between the ages of 12 and 15. Statistical analyses were prepared based on data obtained from the surveys.

Research Results

After the quantitative study of the results, the hierarchy of values preferred by the students was obtained. Table 1 presents the responses of the young residents from the Myślenice district divided into the choices made by the girls and boys. The results were arranged in a descending manner, taking into consideration the answers chosen by the girls. It allows us to compare the similarities and differences in the preferences of the students, depending on their sex.

Table 1. The hierarchy of values of students from the Myślenice district (Poland)

<table>
<thead>
<tr>
<th>Value</th>
<th>Preference indicator (%)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. family</td>
<td>67.6</td>
<td>48.6</td>
<td></td>
</tr>
<tr>
<td>2. health</td>
<td>61.4</td>
<td>50.0</td>
<td></td>
</tr>
<tr>
<td>3. friendship</td>
<td>52.2</td>
<td>32.0</td>
<td></td>
</tr>
<tr>
<td>4. faith in God</td>
<td>47.8</td>
<td>60.9</td>
<td></td>
</tr>
<tr>
<td>5. peace</td>
<td>41.1</td>
<td>36.3</td>
<td></td>
</tr>
<tr>
<td>6. love</td>
<td>26.4</td>
<td>31.0</td>
<td></td>
</tr>
<tr>
<td>7. truth</td>
<td>25.2</td>
<td>27.0</td>
<td></td>
</tr>
<tr>
<td>8. wisdom</td>
<td>21.4</td>
<td>10.9</td>
<td></td>
</tr>
<tr>
<td>9. helping others</td>
<td>20.9</td>
<td>18.6</td>
<td></td>
</tr>
</tbody>
</table>
## The Hierarchy of Values among Young People

<table>
<thead>
<tr>
<th>Value</th>
<th>Preference indicator (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Girls</td>
</tr>
<tr>
<td>knowledge</td>
<td>17.8</td>
</tr>
<tr>
<td>education</td>
<td>16.9</td>
</tr>
<tr>
<td>respect</td>
<td>15.0</td>
</tr>
<tr>
<td>justice</td>
<td>14.7</td>
</tr>
<tr>
<td>freedom</td>
<td>13.0</td>
</tr>
<tr>
<td>nature</td>
<td>12.6</td>
</tr>
<tr>
<td>job</td>
<td>12.3</td>
</tr>
<tr>
<td>beauty</td>
<td>12.3</td>
</tr>
<tr>
<td>culture</td>
<td>10.9</td>
</tr>
<tr>
<td>goodness</td>
<td>10.1</td>
</tr>
<tr>
<td>patriotism</td>
<td>10.0</td>
</tr>
<tr>
<td>comfortable life</td>
<td>9.8</td>
</tr>
<tr>
<td>spiritual development</td>
<td>8.3</td>
</tr>
<tr>
<td>dignity</td>
<td>6.3</td>
</tr>
<tr>
<td>material goods</td>
<td>4.9</td>
</tr>
<tr>
<td>personal development</td>
<td>4.5</td>
</tr>
<tr>
<td>social life</td>
<td>2.6</td>
</tr>
<tr>
<td>authority</td>
<td>2.5</td>
</tr>
</tbody>
</table>

**Figure 1.** The hierarchy of values preferred by the junior high school students from the Myślenice district (Poland)
By observing the two intersecting curves showing the severity of indications made by the girls and boys, one can notice the mutual interweaving of lines, indicating the volatility of the choices made by the respondents. The highest rate of preference was given to such values as: family – 67.6% of the girls and faith in God – 60.9% of the boys. At the very bottom of the hierarchy of values there were: “authority” (girls) and “nature” (boys).

The analysis of the hierarchy of values indicated that in the first group of ten most important values for both groups there were 7 common values: family, love, health, faith in God, friendship, respect, and justice. In the system of values specified by the girls there were additionally: education, freedom, and helping others. The catalogue of the values most important to the boys was complemented by: patriotism, good and dignity.

The analysis of the hierarchy of values indicated that in the first group of ten least important values for both groups there were 6 common values: authority, beauty, spiritual development, nature, material goods and job. In the system of values specified by the girls there were additionally: comfortable life, peace, dignity and truth. The catalogue of the values least important to the boys was complemented by: culture, knowledge, personal development and education.

A distinct advantage of indications made by the girls, constituting more than 10 percentage points, can be observed in the selection of the following values: family, love, health, and education. The largest gap can be noticed in the case of “health” (over 20%).

A distinct advantage of indications made by the boys, constituting more than 10 percentage points, can be observed in the selection of the following values: faith in God, patriotism and dignity. The largest gap can be noticed in the case of “faith in God” (over 13%).

The smallest differences in the values favoured by the junior high school students (5%) can be observed in the case of the following values: friendship, respect, justice, freedom, wisdom, personal development, culture, knowledge, social life, truth, job, peace, material goods, nature, spiritual development, and authority. The smallest gap can be noticed in the case of “material goods” and constitutes 0.15%.

We conducted a survey in the schools of the Nadvirna district (Ivano-Frankivsk region) in order to carry out a comparative analysis of the orientations towards values among the Ukrainian and Polish students who live in the mountainous region. In particular, we were interested in their priority and peripheral values, which serve as a guide in their daily life, education, work, communication, etc.
In the study, we used the same assessment scale as with the schools located in the Ukrainian Carpathian Mountains (Ivano-Frankivsk region, Nadvirna district, Ukraine). The results of the respondents’ answers are presented in Table 2.

**Table 2.** The hierarchy of values of students from the Nadvirna district (Ukraine)

<table>
<thead>
<tr>
<th>Value</th>
<th>Preference indicator (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Girls</td>
</tr>
<tr>
<td>1. family</td>
<td>69.2</td>
</tr>
<tr>
<td>2. health</td>
<td>61.5</td>
</tr>
<tr>
<td>3. friendship</td>
<td>61.5</td>
</tr>
<tr>
<td>4. faith in God</td>
<td>88.5</td>
</tr>
<tr>
<td>5. peace</td>
<td>65.4</td>
</tr>
<tr>
<td>6. love</td>
<td>57.7</td>
</tr>
<tr>
<td>7. truth</td>
<td>38.5</td>
</tr>
<tr>
<td>8. wisdom</td>
<td>53.8</td>
</tr>
<tr>
<td>9. helping others</td>
<td>34.6</td>
</tr>
<tr>
<td>10. knowledge</td>
<td>46.2</td>
</tr>
<tr>
<td>11. education</td>
<td>50.0</td>
</tr>
<tr>
<td>12. respect</td>
<td>57.7</td>
</tr>
<tr>
<td>13. justice</td>
<td>46.2</td>
</tr>
<tr>
<td>14. freedom</td>
<td>30.8</td>
</tr>
<tr>
<td>15. nature</td>
<td>26.9</td>
</tr>
<tr>
<td>16. job</td>
<td>42.3</td>
</tr>
<tr>
<td>17. beauty</td>
<td>26.9</td>
</tr>
<tr>
<td>18. culture</td>
<td>23.1</td>
</tr>
<tr>
<td>19. goodness</td>
<td>19.2</td>
</tr>
<tr>
<td>20. patriotism</td>
<td>11.5</td>
</tr>
<tr>
<td>21. comfortable life</td>
<td>19.2</td>
</tr>
<tr>
<td>22. spiritual development</td>
<td>19.2</td>
</tr>
<tr>
<td>23. dignity</td>
<td>15.4</td>
</tr>
<tr>
<td>24. material goods</td>
<td>26.9</td>
</tr>
<tr>
<td>25. personal development</td>
<td>11.5</td>
</tr>
<tr>
<td>26. social life</td>
<td>7.7</td>
</tr>
<tr>
<td>27. authority</td>
<td>3.8</td>
</tr>
</tbody>
</table>
Changes in society have led to prioritisation of the values that are of the personal level among young people. Such values ensure their own needs and comfortable feeling. Actually, a person feels the safest in the family, so not accidentally the majority of the Ukrainian teenagers (76.9%) put family at the top of the hierarchy of values.

According to our research, there is a clear difference in the choice of values depending on the respondents’ gender (Figure 2): 88.5% of the girls consider health to be their priority value (this value was chosen by 53.8% of the boys); on the other hand, the girls turned out to be more empathic – 42.3% of them indicated such a value as helping others (boys – 19.2%). This can be explained by the fact that girls (women) are naturally more focused on family comfort, one’s own home, family welfare and happiness of children, inner peace, order, etc. For the young residents of the mountainous region, despite the social activity of modern women, the German phrase “Kinder, Kirche, Küche” (Children, Church, Kitchen) is still relevant.

The dominance of such values as: goodness, love, friendship, honour, respect, justice, and freedom may be observed among teenagers. High rates of preference were given to such a value as goodness – 88.5% of the boys and 61.5% of the girls. In fact, among the ethical values, it is the good which means the highest value that reflects ideal and absolute perfection. For instance, love was chosen by over 70% of the respondents (61.5% of the girls and 80.8% of the boys) in Ukraine and 55.9%
The Hierarchy of Values among Young People

(61.4% of the girls and 50% of the boys) in Poland. These values are necessary for a person to fulfil certain social tasks not for others, but for themselves, for their spiritual growth and self-improvement. It is interesting that among the Polish and Ukrainian students, in fifth (and very honourable) place friendship was chosen both by the boys and girls (Ivano-Frankivsk region – 65.4% of the respondents; Myślenice district – 41.1% of the girls and 36.3% of the boys). The awareness of ethical categories outlined above significantly affects the mind and human behaviour. In order for the pedagogical communication to perform the regulative function, it should not be based on a pragmatic basis, but on altruism and selfless moral guiding activities.

The analysis of the priority spiritual values among the Ukrainian students shows that a high percentage of them chose such values as peace (48.1%), justice (46.2%), freedom (44.2%), and patriotism (32.7%). It can be explained by the military-political situation in the Eastern part of the country, which greatly influences the value system formation. Among the respondents from the Polish mountainous region, the selection of these values is also on a relatively high level: patriotism – 18.6%, peace – 10.5%, freedom – 19.8%. It should be noted that the orientation on values among young people is an important factor in determining the direction of their morality.

For the boys (men), the traditional dominating values are: dynamism, renewal of life and the desire for new ways of life. It is not accidental that, according to the research, the boys prefer cognitive values in their hierarchy; these intellectual qualities will help them in their self-realisation and self-determination in the future: wisdom – 69.2% (girls – 38.5%), education – 61.5% (girls – 34.6%), knowledge – 30.8% (girls – 23.1%), and personal development – 23.1% (girls – 11.5%) (Nadvirna district, Ukraine).

Authority was ranked at the very bottom of the hierarchy of the girls and boys from the mountainous region of the Ivano-Frankivsk region. At the same time, the impact of the mountainous landscape and the climatic environment is clearly reflected by the formation of aesthetic values among the students – 19.2% of the girls and 15.4% of the boys chose beauty; the same number of boys and girls (15.4%) indicated the importance of nature in their lives.

What may worry us is the fact that modern teenagers do not consider such values as: spiritual development (11.5% of the girls; 15.4% of the boys) and social life (7.7% of the girls; 11.5% the boys) as their priorities. A similar situation may be observed in the case of the junior high school students from the Myślenice district: Only 6% of the respondents chose spiritual development and 13.6% – social life. In fact, a third of the respondents (Nadvirna district of Ivano-Frankivsk region)
pointed to the personal importance of hedonistic values. For instance, 34.6% of the boys and 26.7% of the girls seek a *comfortable life*.

Table 3 presents the responses of the young residents from the Myślenice district (Poland) and the students from the schools located in the Ukrainian Carpathians (Nadvirna district of Ivano-Frankivsk region).

**Table 3.** Personal evaluation of values

<table>
<thead>
<tr>
<th>Value</th>
<th>Preference indicator (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Myślenice district (Poland)</td>
</tr>
<tr>
<td>1. family</td>
<td>58.6</td>
</tr>
<tr>
<td>2. health</td>
<td>55.9</td>
</tr>
<tr>
<td>3. friendship</td>
<td>54.1</td>
</tr>
<tr>
<td>4. faith in God</td>
<td>42.5</td>
</tr>
<tr>
<td>5. peace</td>
<td>38.8</td>
</tr>
<tr>
<td>6. love</td>
<td>28.6</td>
</tr>
<tr>
<td>7. truth</td>
<td>26.1</td>
</tr>
<tr>
<td>8. wisdom</td>
<td>20.5</td>
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<tr>
<td>9. helping others</td>
<td>19.8</td>
</tr>
<tr>
<td>10. knowledge</td>
<td>18.6</td>
</tr>
<tr>
<td>11. education</td>
<td>16.3</td>
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<tr>
<td>12. respect</td>
<td>15.4</td>
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<tr>
<td>13. justice</td>
<td>15.3</td>
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<td>14. freedom</td>
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<tr>
<td>15. nature</td>
<td>13.1</td>
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<tr>
<td>16. job</td>
<td>12.6</td>
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<tr>
<td>17. beauty</td>
<td>11.2</td>
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<tr>
<td>18. culture</td>
<td>11.1</td>
</tr>
<tr>
<td>19. goodness</td>
<td>10.5</td>
</tr>
<tr>
<td>20. patriotism</td>
<td>9.7</td>
</tr>
<tr>
<td>21. comfortable life</td>
<td>8.8</td>
</tr>
<tr>
<td>22. spiritual development</td>
<td>8.8</td>
</tr>
<tr>
<td>23. dignity</td>
<td>8.2</td>
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<tr>
<td>24. material goods</td>
<td>6.0</td>
</tr>
<tr>
<td>25. personal development</td>
<td>5.6</td>
</tr>
<tr>
<td>26. social life</td>
<td>5.2</td>
</tr>
<tr>
<td>27. authority</td>
<td>4.7</td>
</tr>
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</table>
The results are arranged in a descending manner taking into account the answers given by the students from the Myślenice district. This is how we were able to outline the hierarchy of values, which allows us to compare the similarities and differences in the preferences of the youth residing in the mountain areas of Poland and Ukraine.

**Conclusions**

By analysing the above data we can draw the following conclusions:

1. By observing two intersecting curves showing the intensity of indications of the junior high school students from the Myślenice district and Nadvirna district of the Ivano-Frankivsk region, one can see mutual interweaving of lines, indicating volatility of the choices made by the respondents. It turns out that the typical hierarchy of values is characteristic of the researched age period. This hierarchy is very meaningful to young people. However, the fact that certain students chose certain values depends also on the specific situations, personal characteristics, etc.

2. In both researched groups, “family” received the highest rate of preference, which indicates that this is the most precious value for the junior high school students from the mountainous regions of Poland and Ukraine.
3. For the young residents of the Myślenice district and the mountainous part of the Ivano-Frankivsk region, such values as “love”, “health” and “friendship” belong to the dominant ones. These values were rated among the five most important values by the surveyed students.

4. Analysis of the hierarchy of values showed that in the first group of ten most important values for both groups there were 8 common values: family, love, faith in God, health, friendship, respect, justice and goodness. In the value system of the students from the Myślenice district there were additionally: freedom and patriotism. The catalogue of the values most important for the students of the mountainous schools from the Ukrainian Carpathians was complemented by: wisdom, peace and knowledge.

5. Analysis of the hierarchy of values showed that in the first group of ten least important values for both groups there were 7 common values: culture, job, material goods, spiritual development, nature, beauty and authority. In the value system of the students from the Myślenice district there were additionally: peace, comfortable life and wisdom. The catalogue of the values least important to the students of the mountainous schools from the Ukrainian Carpathians was complemented by: education, social life and personal development.

6. A distinct advantage of indications made by the students from the Ivano-Frankivsk region, constituting more than 10 percentage points, can be observed in the selection of as many as 19 values: family, love, health, friendship, respect, justice, goodness, freedom, patriotism, education, dignity, helping others, truth, knowledge, culture, peace, comfortable life, wisdom, beauty. The largest gap can be found in the case of “goodness” – over 54%.

7. In the case of three values: faith in God, social life, authority, we may observe that they were more often chosen by the students from the Myślenice district.

8. The smallest differences in the values preferred by the students from the Myślenice district and the Nadvirna district of the Ivano-Frankivsk region (up to 5%) can be observed in the case of the following values: faith in God, job, spiritual development, and authority.

9. At the very bottom of the hierarchy of the students both from Poland and Ukraine there was “authority”.

10. The values to which the students are oriented are closely linked to the emotional and volitional sphere and determine the nature of their social interaction, focusing on mastering the future profession and creating moral strategy of their life. This phenomenon can be especially clearly observed in the case of the boys.
Summing up the results of the research, we can conclude that the value systems of the students from the Myślenice district and the Nadvirna district of the Ivano-Frankivsk region are dominated by the ethical (altruistic) and sociocentric values. The collected data also shows that the hedonistic and material values were the least popular among the young respondents.

While teaching universal and national values to teenagers, we should recognise such factors as the priority ones: taking into account the natural abilities of the student, his ethno-psychological and individual characteristics, his cognitive interests; focusing primarily on the study of our own historical experience for the development of high civic culture; focusing on democracy in the organisation of educational activities at the national ground; combining the family and regional-national traditions, customs and rituals popular in the mountainous region for filling the living space with the elements of spirituality; providing conditions for enriching the socio-cultural experience towards teaching progressive ideas of European nations and peoples to young students.

References


The Realization and Fulfillment of Life Aspirations by Children and Youth from the Polish-Czech Borderland

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Abstract
What is discussed in the presented study are the transformations in the realization and fulfillment of life aspirations of children and youth from the Polish-Czech borderland. This is done in reference to Carol S. Dweck’s concept of motivation and life aspirations, according to which they are fulfilled in two different ways depending on how the nature of human abilities and the reaction to difficulty and failure are understood.

The studies conducted in 1990–1991 and 2014–2015, with the application of the strategy of longitudinal comparisons based on the time criterion, enabled both the recognition of some factors which affected the fulfillment of life aspirations by the young, and the presentation of the relative dynamics of the change and capturing the mechanisms which determine it.

Keywords: values, life aspirations, dynamics of change, cultural borderland, multi- and intercultural education

Introduction
The examined groups of learners from the Polish-Czech borderland are children and youth in an intensive period of shaping their ego identity. Firstly, this shaping comprises the process of interpersonal, inter-psychic comparisons, during which the feeling of individuality (ego separateness) is developed. Secondly, forming ego
identity involves the process of intrapersonal, intra-psychic comparisons, which enhances both the feeling of one’s own individuality and the feeling of integrity, and thirdly – it comprises the process of temporal comparisons, which constitutes the basis for the feeling of ego continuity. These processes determine the individual’s search, in the whole individual life, for the answer to three fundamental identity questions: What kind of person am I? Who am I? Why am I? (Staś-Romanowska, 2004, p. 51; Wojciszke, 2010, p. 184). It is especially the second question where the need appears for axiological self-definition (a conscious choice and acceptance of values), as well as for undertaking the activities compliant with the chosen values (their fulfillment, which leads the individual to intellectual and emotional-social maturity, and the axiological maturity that constitutes an important determinant of the individual’s identity). According to Adam Węgrzecki, axiological maturity can be treated as “the skillfulness in referring to values, […] which is not unilateral, […], concerns different values and – depending on the type of values – can become differentiated, […] is manifested by a certain kind of faithfulness to the selected values and determined by the feeling of inner freedom” (Węgrzecki, 1994, pp. 19–21). In the perspective of the undertaken discussion, it seems interesting to familiarize with the examined learners’ opinions on the possibilities of fulfilling their declared life aspirations – with their “skillfulness” in reference to selected values.

The presented results of the studies conducted at the turn of 2014/15 constitute a record of the current state – after 24 years of social and civilization transformations, which have affected both Polish and Czech societies (joining NATO in 1999, the European Union in 2004, the Schengen Zone in 2007)¹.

In the latest studies, the strategy of longitudinal comparisons was applied, which was based on the time criterion and aimed at understanding the mechanisms of change and the factors determining the behavior of particular individuals and groups living in the same socio-economic and cultural period. Diagnostic poll was

¹ Both the 1990–1991 and 2014–2015 studies were conducted by the research staff of the Department of General Pedagogy (currently the Department of General Pedagogy and Research Methodology) at the Faculty of Ethnology and Educational Science (University of Silesia), under the scientific supervision of Professor Tadeusz Lewowicki. The theoretical and methodological assumptions, the research results and their interpretation are discussed in detail in the book by T. Lewowicki, E. Ogrodzka-Mazur, A. Minczanowska, G. Piechaczek-Ogierman: Sfery życia duchowego dzieci i młodzieży – studium z pogranicza polsko-czeskiego [The spheres of spiritual life of children and youth – a study from the Polish-Czech borderland]. Vol. 1. Przeminęły wartości i aspiracje życiowe [Transformations of values and life aspirations]. Cieszyn–Toruń 2016, Wydział Etnologii i Nauk o Edukacji Uniwersytetu Śląskiego, Wydawnictwo Adam Marszałek.
applied with the use of (repeatable) panel method, which assumed conducting, at least twice in a certain time span, the measurement of a certain group of people in regard to the same feature. This is aimed at capturing the dynamics of a particular phenomenon. Such studies allow not only for presenting the relative dynamics of change but also for capturing certain mechanisms which determine this dynamics (Frankfort-Nachmias, Nachmias, 2001, pp. 153–154; Pilch, Bauman, 2001, pp. 39–42).

The model of analysis for the investigated issues has been operationally approached in the form of a multivariate analysis of variance with the measurements of the variables. This was done in the same way as in the studies conducted at the turn of 1990/91 (Ogrodzka-Mazur, 1992, pp. 82–93) in two environments: Poles living and educated in Poland and the children and youth of Polish nationality who live in Zaolzie in the Czech Republic and are educated in Czech schools with Polish as the teaching language. This model enabled the verification of the hypothesis on the similarities and differences between the examined groups in the fulfilled life aspirations.

The research comprised 377 learners – 183 from Polish state and private primary and middle schools situated in Cieszyn (105 girls and 78 boys) and their 194 peers from the Czech Republic (87 girls and 107 boys), educated in primary schools with Polish as the teaching language, situated in the counties of Karvina and Frydek-Mistek.

As in the 1990/91 studies, the participants were fourth-graders from primary schools (61 children from Poland and 74 from Zaolzie), the youth from second grade in Poland (122 people) and eighth-graders from primary schools in Zaolzie (120 people). In the Czech education system, the eighth grade of primary school is the counterpart of the second grade of Polish middle school.

The examined community of learners from the Polish-Czech borderland has been observing the changes taking place in Poland and the Czech Republic since the early nineties of the 20th century. The changes in both countries are partially similar but they have also some distinctively different features. The young from Zaolzie schools with Polish as the teaching language, who are Czech citizens and declare the feeling of Polish nationality, perceive these phenomena from a different angle – due to their daily life in culturally diversified environments and families. This is of particular significance in shaping their multidimensional cultural identity, the individual structure of axiological identity, and the fulfillment of their life goals.
The Realization and Fulfillment of Life Aspirations

Referring to Carol S. Dweck’s concept (Kofta, Doliński, 2000, pp. 588–591; Elliot, Dweck, 2005), it can be noticed on the basis of the respondents’ answers that they fulfill their life goals in two different ways, depending on the understanding of the nature of human abilities and the reaction to difficulties and failure. Owing to their diligence, middle school learners from Poland aim mostly at fulfilling a particular criterion of performance in order to meet the expectations (extrinsic motivation) and to fulfil their own aspirations. Yet, their peers from Zaolzie are more frequently intrinsically motivated to acquire new knowledge and skills.

In comparison to fourth-graders, the examined youth to a larger extent make the fulfillment of their aspirations depend on other people and they indicate the variant I do not know significantly less often. Firstly, the attribution of more significance to other people is a dimension of social identity which is typical of adolescence – a dimension shaped by intensive contacts and interactions between people in the immediate and extended surroundings. However, youth do not manifest social bonds in the broader (cross-generation) sense, but head for implementing their own individual values (life goals). Secondly, the belonging of the learners from Zaolzie to the Polish national minority may hinder the process of inner integration and may result in the diffusion of social roles, values, ideas and attitudes which they apply in life and want to fulfill. On the other hand, owing to the contacts with the representatives of the majority, these young people “broaden” their developmental potentialities with the social dimension and they take into account the cultural heritage of their own society, which they now notice. Therefore, Maria Staś-Romanowska’s standpoint can be confirmed, according to which the more unambiguous and stable the reference framework is for the experiences associated with one’s own Self, the more certain and powerful the identity of this Self is (Staś-Romanowska, 2004, p. 58). The youth from the Polish-Czech borderland realize and fulfill their life aspirations in three basic perspectives of viewing themselves and the culturally diversified environment:

- the perspective indicated by the category of “time”, providing orientation in choices towards the present and future time, which are determined by traditions of their own group,
- the perspective indicated by the category of “identity structure”,
- the perspective referring to the category of “social role” (Urbański-Korż, 1998, pp. 19–21).
These perspectives are reflected in the respondents’ answers concerning the fulfillment of life goals in four fields: (1) the goals they can achieve, (2) the ones which will be the easiest to achieve, (3) the ones they think cannot be achieved, and (4) the ones which they are already partially implementing.

Among the goals they can achieve (cf., Figure 1), the fourth-graders from the Czech part of the borderland as well as their Polish peers indicate peaceful life among family and friends (46%) as the most important. Fewer choices were given to comfortable life free of problems (28%) and life full of changes, adventures and attractions (22%).

The specific triad of family, comfortable and attractive life is compliant with these respondents’ axiological preferences, which they will try to implement in their life. Choosing life goals which they can achieve, the fourth-graders in Poland,

![Figure 1. Life goals which fourth-graders can fulfill](image)

Key: a. comfortable life free of problems; b. peaceful life among family and friends; c. popularity, fame, success; d. exciting job, professional career; e. knowledge, education, scientific achievements; f. top position, supervising people, decision making; g. fortune, high living standards; h. implementation of moral values, respectable life; i. engagement in social issues, civil activeness; j. participation in culture, artistic activity, creativity; k. life full of changes, adventures and attractions.

Source: own elaboration
more frequently than their peers from Zaolzie, indicate knowledge, education and scientific achievement ($\chi^2 = 6.1; p < 0.05$; for df = 1) and participation in culture, artistic activity and creativity ($\chi^2 = 9.5; p < 0.05$; for df = 1). These aspirations, however, do not belong to the subsystem of the respondents' highest rank values, which means that they do not identify the goals which they aim at with the ones they can achieve in life.

Among the goals which will be the easiest to achieve for all the learners, there are: peaceful life free of problems (36%) and achieving professional career (PL – 16%, CZ – 12%). The Polish children also more frequently indicate participation in culture (20%) and their peers from Zaolzie – life full of changes, adventures and attractions (23%).

Some interesting research results were obtained in reference to the learners' opinions on life goals which they will not be able to achieve (cf., Figure 2).

**Figure 2.** Life goals which fourth-graders are not able to fulfill

Key: a. comfortable life free of problems; b. peaceful life among family and friends; c. popularity, fame, success; d. exciting job, professional career; e. knowledge, education, scientific achievements; f. top position, supervising people, decision making; g. fortune, high living standards; h. implementation of moral values, respectable life; i. engagement in social issues, civil activeness; j. participation in culture, artistic activity, creativity; k. life full of changes, adventures and attractions.

Source: own elaboration
The children from Zaolzie declare here reaching fortune and high living standards (28%); popularity, fame and success (16%) and top positions and supervising people (12%). What is more, while choosing life aspirations which they think they will not be able to achieve, they indicate fortune and high living standards more frequently than their Polish peers ($\chi^2 = 5.8; p < 0.05$; for df = 1).

In their declarations, the fourth-graders from the Polish part of the borderland are convinced that they will not achieve top positions associated with supervising other people and making decisions (23%), respectable life in compliance with moral values, as well as life full of changes, adventures or attractions (13%). More frequently than their peers from Zaolzie, they indicate implementation of moral values and respectable life ($\chi^2 = 7.4; p < 0.05$; for df = 1) and participation in culture, artistic activity and creativity ($\chi^2 = 4.1; p < 0.05$; for df = 1).

Among the life goals which are already being at least partially implemented by the children from the fourth grade in Zaolzie (cf., Figure 3), the following goals received the biggest number of indications: peaceful life among family and friends (26%); life full of changes, adventures and attractions (22%), and gaining popularity, fame and success (18%). The learners from Poland declare partial implementation of their aspirations mostly as regards the acquisition of knowledge and education (30%), leading a peaceful life among family and friends (28%) and achieving success (16%). Moreover, as regards the life goals which they are already partially implementing, they indicate, more often than their counterparts from Zaolzie, knowledge, education and scientific achievements ($\chi^2 = 7.4; p < 0.05$; for df = 1).

The image of the implemented aspirations of the fourth-graders is differentiated by their environment and the preferred values. What can be noticed is the previously outlined tendency that the learners from the schools with Polish as the teaching language focus mostly on the set of goals associated with comfortable and attractive family life, which they can fulfill, they will be able to fulfill most easily, and they are already implementing – at least partially (Ogrodzka-Mazur, 2011, pp. 15–71). Most frequently, the children from the Polish part of the borderland do not identify the goals which they will aim at in life with the ones they can achieve. Moreover, in the context of economic, social and cultural determinants of their country, they present an overrated evaluation of their chances and possibilities concerning the implementation of all life aspirations.

The declarations of the Zaolzie youth from the eighth grade and the Polish middle school learners concerning the implementation of life goals which they can achieve, which are the easiest to achieve, which they think they will not fulfill,
The Realization and Fulfillment of Life Aspirations by Children

and which they are already partially implementing are very similar. In compliance with the order introduced by the respondents, they create the same arrangements. The life goals which the youth can achieve in the broadest scope comprise (cf., Figure 4):

- peaceful life among family and friends (PL – 56%, CR – 61%),
- comfortable life free of problems (PL – 41%, CR – 47%),
- exciting job, professional career (PL – 29%, CR – 28%),
- knowledge, education, scientific achievements (PL – 27%, RC – 24%).
While choosing life goals which they can fulfill, the middle school learners from Poland, more frequently than their peers from Zaolzie, indicate the achieving of top positions and supervising people ($\chi^2 = 5.2; p < 0.05$; for df = 1), as well as implementing moral values and respectable life ($\chi^2 = 5.7; p < 0.05$; for df = 1).

As regards life goals which will be the easiest to fulfill by the youth from the Polish-Czech borderland, the following indications were made (cf., Figure 5):

- peaceful life among family and friends (PL – 44%, CR – 50%),
- comfortable life free of problems (PL – 23%, CR – 34%),
- life full of changes, adventures and attractions (PL – 17%, CR – 18%),
- knowledge, education and scientific achievements (PL – 13%, CR – 13%).

Key: a. comfortable life free of problems; b. peaceful life among family and friends; c. popularity, fame, success; d. exciting job, professional career; e. knowledge, education, scientific achievements; f. top position, supervising people, decision making; g. fortune, high living standards; h. implementation of moral values, respectable life; i. engagement in social issues, civil activeness; j. participation in culture, artistic activity, creativity; k. life full of changes, adventures and attractions.

Source: own elaboration.
Choosing the life goals which will be the easiest to achieve, the second-graders from middle schools in Poland most frequently declare the implementation of moral values and respectable life ($\chi^2 = 10.5; p < 0.05$; for df = 1). Similarly to their younger peers from the fourth grade, the examined youth assess their life goals which they will not be able to fulfill. They constitute the following arrangement (cf., Figure 6):

- popularity, fame and success (PL – 27%, CR – 28%),
- fortune and high living standards (PL – 29%, CR – 26%),
- top positions, supervising people and making decisions (PL – 16%),
- comfortable life free of problems (CR -13%).
While choosing life goals which they think they will not be able to achieve, the middle school learners from Poland most frequently indicate exciting job and professional career ($\chi^2 = 5.0; p < 0.05; \text{for df} = 1$).

The profile of life goals is completed by the opinions of the youth on the partial implementation of these goals and the assessment of satisfaction in this field. The most frequent choices comprise the following goals (cf., Figure 7):

- peaceful life among family and friends (PL – 30%, CR – 34%),
- knowledge, education, scientific achievements (PL – 34%, CR – 33%),
- comfortable life free of problems (PL – 26%, CR – 27%),
- life full of changes, adventures and attractions (PL – 19%, CR – 23%).

Key: a. comfortable life free of problems; b. peaceful life among family and friends; c. popularity, fame, success; d. exciting job, professional career; e. knowledge, education, scientific achievements; f. top position, supervising people, decision making; g. fortune, high living standards; h. implementation of moral values, respectable life; i. engagement in social issues, civil activeness; j. participation in culture, artistic activity, creativity; k. life full of changes, adventures and attractions.

Source: own elaboration.
While choosing the life goals which they are already partially implementing, the middle school learners from Poland indicate achieving fortune and high living standards ($\chi^2 = 3.9; p < 0.05$; for df = 1).

The youth from the Polish-Czech borderland present very similar attitudes as regards the possibilities of fulfilling or not of particular life aspirations – in contrast to the differentiated choices of highly ranked values. This specificity of the learners’ viewing their “existence in the world” (determined by a particular level of axiological maturity) points both to their social knowledge and the similarity of the socializing situation in the borderland environment. The skillfulness
of the respondents’ referring to values reveals what they individually regard as good, what they evaluate positively, what they want to head for and express in the formulated obligations.

Conclusions

The specificity of the Polish-Czech borderland, which is the environment where the examined children and youth grow up, opens the possibility of the multidimensional development of their spiritual life. This particularly refers to the dimension of social culture, which is oriented towards normative values, and of material culture, which enhances the implementation of non-normative values. Among the values preferred by the young both from Zaolzie and Poland, the prevailing set of values can be distinguished – the values associated with comfortable and attractive family life. Family values are still highly ranked in the respondents’ declarations, especially in the Czech part of the borderland. This indicates the well-preserved cross-generation continuity – family is the most appreciated value, the fundamental educational environment and the place where values are transmitted. Yet, the majority of the children and youth are not interested in participation in culture, engagement in social issues, and undertaking civil activities in their countries. A very low feeling of effectiveness in social issues is manifested not only by the learners from the borderland but it is a feature typical of the whole young generation in Poland and the Czech Republic.

The values currently preferred by the learners from Zaolzie and the structure of these values slightly differ from the choices made 25 years ago by the young attending schools with Polish as the teaching language. Contemporary youth attributes more significance only to work and professional career, but values less the top positions and supervising people as well as engaging in social issues and citizen activities. In spite of this quarter of a century which has passed, such a structure of values and the subsystems functioning within it may confirm very little proneness to change of the Polish community living in Zaolzie. This seems to be determined by more traditional family upbringing, the bonds with the past and the well-preserved cross-generation continuity. What is more, another important determinant of shaping learners’ feeling of cultural identity and, at the same time, of their axiological awareness, is the educational activity undertaken by schools with Polish as the teaching language. This has also been confirmed by research results of many other studies conducted in this borderland territory.
The fulfillment and implementation of the respondents' life goals is differentiated by their environment and the preferred values. A tendency can be observed that the learners from schools with Polish as the teaching language focus mostly on the group of aspirations associated with comfortable and attractive family life, which they can fulfill, they will be able to fulfill most easily, and they are partially already implementing. Most frequently, the children from the Polish part of the borderland do not identify the goals which they will aim at in life with the ones they can achieve. Apart from this, in the context of economic, social and cultural determinants of their country, they present an overrated evaluation of their chances and possibilities concerning the implementation of all life aspirations.

The general picture of the respondents' axiological preferences involves: a lowered level of the whole system of values, the growing tendency to focus on life for oneself, increased significance of individual-private values, in opposition to social values, and the aiming at self-fulfillment, understood as the conduct in compliance with one's own potentialities and needs, which rejects all ideologies, including the religious one.

References


Factors Affecting Low Performance of Junior Learners in a Developing Country: Southern Region of Botswana

Abstract
The study was triggered as a result of declining performance of learners in Botswana and it was aimed at finding solutions that would enhance sound academic performance in junior secondary schools. A phenomenological design was selected for the study while a qualitative approach was adopted using focus group interviews as the source of data collection from participants. The findings of this study revealed that the inability of the government of Botswana to implement job satisfaction measures in educators inhibited adequate transfer of knowledge to learners, which resulted in a decline in performance. Learners’ gross misconduct and their parents’ inability to counsel them contributed to their decline in performance. Also, learners and educators admitted that the current system of education should be replaced with another productive system. Another finding of this study confirmed that learners are tired of corporal punishment and they want it to be replaced with detention. The study recommendation is that the Ministry of Education of Botswana should apply motivational and job satisfaction factors to encourage educators to adequately transfer knowledge to learners.

Keywords: academic performance, factors, education, junior secondary school
Introduction

The declining performance of Junior Certificate learners in Botswana is a worrisome factor to the whole Ministry of Education and the government (Moswela, 2014). Learners are considered to be the leaders of tomorrow, therefore, reasonable measures should be implemented to ensure that learners’ academic careers are improved to a reasonable standard (Moswela, 2014). In this regard, there is a need for the government to implement effective strategies aimed at enhancing academic performance thereby improving the declining performance of junior level learners.

The education system in Botswana has been undergoing a reform process for the past two decades, especially amongst the junior certificate learners in four Lobatse Junior Secondary Schools in the Southern Region of Botswana (Dibapile, 2012). According to Chisholm and Chilisa (2012), Botswana’s government adopted a nine-year Basic Education Program in the 1980s, a few years before the emergence of the Jomtien Conference, which attempted to globalize the concept. The context of education restructuring brought the Curriculum Driven Test Development Model (CDTDM) in 1992, which was aimed at increasing the content of the syllabus and to enhance learner performance in both primary and junior secondary schools. Despite the slow rate of transformation, Botswana has relatively financed education to the extent that it is regarded as one of the best countries in Africa in terms of the teacher-pupil ratio and the number of certified teachers (Chisholm & Chilisa, 2012).

Research Problem and Focus area

The curriculum blueprint (2007) says that the major aim of the junior secondary education program is to develop learners, encourage competence and academic excellence. The curriculum blueprint highlights all the necessary factors needed to ensure success in the education sector. To enhance learners’ academic performance, the national Development Vision was established in 1996 to assist in mass education and to increase the level of literacy in Botswana to enhance competitive education (Chisholm & Chilisa, 2012).

Despite these struggles to enhance quality education, the country thrives in universal and quality education (Mohiemang & Pretorius, 2012). According to Botswana Examinations Council (2013), the academic report of junior learners in 2012 and 2013 indicated that there was a remarkable decline in performance. With regards to this deteriorating performance, there is a need to determine the causes of the declining performance of junior certificate learners in Botswana and the measures to improve learners’ average performance.
Factors Affecting Low Performance

Literature Review

According to the Curriculum blueprint (2007) and Mohiemang and Pretorius (2012), the principal aim of educating learners in Botswana is to improve them so that they can acquire special skills and to develop the awareness of the interrelationship between science, technology, business, arts and society in everyday life. The Botswana Curriculum blueprint (2007) stipulates that learners’ critical thinking, problem solving ability and inquiry skills should be well developed. Therefore, it advocates that learners should be guided by all stakeholders throughout the learning process in order to attain the desired objective. Moswela (2014) claims that stakeholders of learners’ academic performance are people involved in leading and directing learners towards their competent development. These stakeholders include parents, teachers and the government.

Parents’ involvement in learners’ education is considered necessary to guide and cultivate the spirit of reading amongst learners because schools alone cannot do the job of educating children without parents’ consistent support (Moswela, 2014). Scholarly research has proved that learners’ cognitive academic development starts with their parents, who assist them in acquiring fundamental knowledge and some special skills at an early age (Isaiah & Nenty, 2012). Possibly, there is a link between educators and parents to establish co-operation to enhance change of attitudes and to encourage success in learning and better developmental outcomes (Moswela, 2014).

Zulu and Wolhuter (2013) posit that educators, school leaders and the government have a significant relationship with the misconduct of learners, whereas Chukwuere, Mavetera and Mnkandla (2016) believe that teachers or educators provide a suitable learning environment for all learners. The existence of different forms of misconduct is a resultant effect of negligence of educators and the government (De Wet, 2003). The studies of Moswela (2014) on the forms of misconduct reveal that the improper use of language, duty negligence, bullying, drug abuse, absenteeism, truancy, peer pressure, attitude towards school work, and dishonesty are the most frequent kinds of misconduct amongst learners. Learners’ negative behaviors in the learning environment in Botswana contribute to the decline in their academic performance. Hence, the learner has a big responsibility for his/her own academic success (Moswela, 2014).

Job dissatisfaction has been viewed as one of the major causes of employees’ turnover and unsatisfactory performance (Monyatsi, 2012; Dibapile, 2012). The school leader and teachers play an integral role in making sure that learners receive a quality education as they employ different strategies to control disruptive behaviors in the classroom (Dibapile, 2012; Isaiah & Nenty, 2012). Isaiah and
Nenty (2012) state that satisfaction is necessary to motivate teachers to invest their cognitive and affective capital in the teaching–learning process. This implies that job satisfaction plays a positive role in educators as guides to the learner’s future. Job satisfaction factors which should be applied to educators include salary, progression pace, workload, effective supervision, working relations, provision of accommodation, and training opportunities (Monyatsi, 2012). The teacher’s satisfaction level regarding their job should also be viewed as an important factor which can impact negatively or positively on the decline of the learner’s performance (Isaiah & Nenty, 2012).

In order to achieve academic excellence, it is the duty of the Ministry of Education of Botswana to combine all the factors to ensure that learners acquire a good and quality education to enhance development (Curriculum blueprint, 2004). Furthermore, the Curriculum blueprint (2007) says that the philosophy of the basic education programme will continually evolve to show the needs and directions of Botswana. The Ministry of Education is a policy body which formulates and strategically implements policies to enhance student learning and performance (Moswela, 2014).

**Research Methodology**

The presented study adopts a social constructivist paradigm. The social constructivist paradigm helped the researcher to gain an in-depth knowledge through interactions with participants as indicated by Creswell (2014:8). A qualitative research design was used, which enabled the researcher to collect data from respondents using focused group interviews. Qualitative research ensures a deeper understanding of the study at hand (Chukwuere, Mavetera & Mnkandla, 2016). Table 1 presents the population of the study as adapted from Human Resource Management (2015) (Ministry of Education, Botswana).

<table>
<thead>
<tr>
<th>Name of School</th>
<th>No. of Educators</th>
<th>No. of Learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letsopa Junior Secondary School</td>
<td>44</td>
<td>478</td>
</tr>
<tr>
<td>Ipelegeng Junior Secondary School</td>
<td>51</td>
<td>458</td>
</tr>
<tr>
<td>Itireleng Junior Secondary School</td>
<td>45</td>
<td>461</td>
</tr>
<tr>
<td>Pitikwe Junior Secondary School</td>
<td>46</td>
<td>548</td>
</tr>
</tbody>
</table>

Table 1. Population of the study
Research Sample

Letsopa Junior Secondary School and Ipelegeng Secondary School were conveniently selected from schools due to their nearness to the researcher and the possibility to collect data at the quickest possible time. Furthermore, convenience sampling helped the researcher to collect responses from participants based on nearness and convenience. Data was collected from the educators and learners through focus group interviews with the aid of open-ended questions. The focus group interviews conducted were transcribed, sorted and arranged in themes. Central ideas were identified and the researcher coded and analyzed them with regards to the respective research questions. Table 2 and 3 present the samples selected from the two junior secondary schools.

<table>
<thead>
<tr>
<th>Table 2. Sampling size of the educators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of School</td>
</tr>
<tr>
<td>----------------------------------------</td>
</tr>
<tr>
<td>Letsopa Junior Secondary School</td>
</tr>
<tr>
<td>Ipelegeng Junior Secondary School</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 3. Sampling size of the learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of School</td>
</tr>
<tr>
<td>----------------------------------------</td>
</tr>
<tr>
<td>Letsopa Junior Secondary School</td>
</tr>
<tr>
<td>Ipelegeng Junior Secondary School</td>
</tr>
</tbody>
</table>

Data Analysis

This section presents the results obtained from the two focus group interviews conducted with the learners and the educators. The focus group interviews in the two junior schools were conducted in two phases namely, Phase A and Phase B. Phase A presents the summary of the focus group interviews with the learners in the two junior schools, while Phase B presents the summary of the focus group interviews with the educators in the two schools. The focus group interview was captured with the help an audio tape and transcribed by the researchers (cf., the appendix). Also, the transcribed data was arranged into themes through coding of the collected data. Afterwards, the discussion of the results is presented.

PHASE A: This phase presents the research questions and the categories of the findings (Table 4).
Table 4. Learner interview

<table>
<thead>
<tr>
<th>THEMES OF FINDINGS</th>
<th>CATEGORIES OF FINDINGS</th>
</tr>
</thead>
</table>
| **Question 1**     | Does the attitude of educators during the process of knowledge transfer demotivate you to follow up? | The educators’ attitude considered as discouraging during the process of knowledge transfer for the following reasons:  
  - Making derogatory comments  
  - Mocking students  
  - Making abusive and insulting remarks  
  - Inability to pay desired attention  
  - Attention paid to better performing students  
  - Educators’ callousness  
  - Sending learners out of the class as a result of their inability to answer questions correctly |
| **Question 2**     | Does the exhibition of misconduct by learners contribute to their decline in academic performance? | The learners confirm that the following misconducts contribute to the decline in their academic performance:  
  - Disrespecting teachers  
  - Alcohol and drug abuse  
  - Missing classes  
  - Stealing of school property, which leads to expulsion  
  - Noise making  
  - Eating and sleeping in class  
  - Smoking in the school premises  
  - Fighting in the school  
  - Absenteeism |
| **Question 3**     | Do parental guidance and attitude contribute to the declining performance of Junior Secondary Schools in the Southern Region in Botswana? | The learners said that some attitudes of their parents contribute to their declining performance for the following reasons:  
  - Inability to provide the basic things they need for studies  
  - Inability to visit them regularly in school  
  - Inappropriate guidance and thorough observation at home.  
  - Inadequate counselling |
| **Question 4**     | What is the best strategy you consider necessary to stop and improve the declining performance in Junior Secondary Schools in the Southern Region in Botswana? | The learners suggested that the Ministry of Education should implement the following strategies to ensure effective performance:  
  - Expelling the student that does not want to study and those that are involved in drug abuse  
  - An end should be put to the use of abusive words on the part of students  
  - Educators’ maximum support to each learner.  
  - Proper counselling and encouragement by educators  
  - Abolishment of corporal punishments and replacing them with detention  
  - Effective guidance from parents  
  - Parental visitations at regular intervals.  
  - Parental provision of basic things needed by learners. |
PHASE B: The focus group interviews conducted with the educators are as follows (Table 5).

Table 5. Educators’ interview

<table>
<thead>
<tr>
<th>THEMES OF FINDINGS</th>
<th>CATEGORIES OF FINDINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question 1</strong></td>
<td>The teachers admitted that the inability of the Government to satisfy them demotivates them in giving their best to their learners, also other reasons are as follows:</td>
</tr>
<tr>
<td>Does job dissatisfaction demotivate you in giving learners the desired direction and academic guidance?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Inability to provide a good working environment</td>
</tr>
<tr>
<td></td>
<td>· High rate of student-teacher ratio</td>
</tr>
<tr>
<td></td>
<td>· Lack of incentives and other fringe benefits</td>
</tr>
<tr>
<td></td>
<td>· Inability to give promotion consistently</td>
</tr>
<tr>
<td></td>
<td>· Excessive workload</td>
</tr>
<tr>
<td></td>
<td>· Lack of salary upgrade</td>
</tr>
<tr>
<td><strong>Question 2</strong></td>
<td>The educators confirmed that learners’ misconduct has a direct and negative effect on their performance. Various kinds of misconduct are listed below:</td>
</tr>
<tr>
<td>Does the exhibition of misconduct by learners contribute to their declining performance in Botswana?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Fighting in the school premises</td>
</tr>
<tr>
<td></td>
<td>· Truancy</td>
</tr>
<tr>
<td></td>
<td>· Involvement in sexual relationships</td>
</tr>
<tr>
<td></td>
<td>· Engagement in drug and alcohol abuse</td>
</tr>
<tr>
<td></td>
<td>· Absenteeism from school</td>
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<td></td>
<td>· Lack of respect</td>
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<td></td>
<td>· Pregnancy</td>
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<td></td>
<td>· Peer pressure</td>
</tr>
<tr>
<td></td>
<td>· Not complying with educators’ directives.</td>
</tr>
<tr>
<td><strong>Question 3</strong></td>
<td>The educators stated that parents’ inability to guide learners contributed to their decline in performance. The following reasons were given:</td>
</tr>
<tr>
<td>Do parental guidance and attitude contribute to the declining performance of Junior Secondary Schools in the Southern Region in Botswana?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Parents do not show encouragement in their children’s academic performance.</td>
</tr>
<tr>
<td></td>
<td>· Parents lack the ability to guide and monitor their children.</td>
</tr>
<tr>
<td></td>
<td>· Parents do not visit their children in school at regular intervals.</td>
</tr>
<tr>
<td></td>
<td>· Parents do not provide their children with extra teaching arrangements to boost their capacity.</td>
</tr>
<tr>
<td></td>
<td>· Parents do not provide their children with the basic things needed for learning.</td>
</tr>
<tr>
<td><strong>Question 4</strong></td>
<td>The educators declared that the current system should be abolished for the following reasons:</td>
</tr>
<tr>
<td>Do policy formulation and implementation by the Ministry of Education contribute to the declining performance of Junior Secondary Schools in the Southern Region in Botswana?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Every learner should pass all the subjects before being promoted to another level.</td>
</tr>
<tr>
<td></td>
<td>· The introduction of mass promotion by the present system should be abolished to encourage competence.</td>
</tr>
<tr>
<td>THEMES OF FINDINGS</td>
<td>CATEGORIES OF FINDINGS</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Question 5</td>
<td>The educators suggested the following measures to enhance learners’ academic performance.</td>
</tr>
<tr>
<td></td>
<td>· The motivation of educators through the revision of salaries, promotion, and fringe benefits so that they can work effectively to ensure academic success.</td>
</tr>
<tr>
<td></td>
<td>· Workload should be reduced by the government by employing more teachers.</td>
</tr>
<tr>
<td></td>
<td>· Learners should be counseled to ensure that they will desist from drug abuse, fighting, sexual relationships, truancy, disrespect, absenteeism and neglect of school work.</td>
</tr>
<tr>
<td></td>
<td>· Parents should show maximum commitment in the guidance and monitoring of learners after school hours.</td>
</tr>
<tr>
<td></td>
<td>· The present school system has been proved unproductive and should be replaced with another one to enhance academic success.</td>
</tr>
</tbody>
</table>

Discussion of findings

The findings of this study were presented as per research questions. The findings from the two focus group interviews (Phase A and Phase B) were combined and discussed to elaborate the respondents’ opinions on the factors that lead to the performance decline of junior learners in Botswana. Here are the factors that lead to performance decline: job dissatisfaction; learners’ gross misconduct and inability to counsel and guide learners. Also, the participants suggested remedies to the declining performance, which are: change in the current education system and educators’ motivation and guidance of learners.

Job Dissatisfaction

The findings of the two focus group interviews on the effect of educators’ job dissatisfaction on the knowledge transfer process and the effect of educators’ negative attitude on learners during the knowledge transfer process. The focus group interviews conducted with the educators proved that the main reason for their inability to give their best to their learners is the inability of the government to provide the basic motivational factors for them (cf., Table 5, question 1). The educators stated that the government should provide an equitable work environment, well-earned incentives, fringe benefits, promotion and salary upgrade. Also, the educators said that the government should employ more educators to reduce the educator-learner ratio, which will help in reducing the available workload (cf., Table 5, question 5). In confidence, the educators added that the government’s ability to put these factors in place will enable them to give their best to their learners.
Factors Affecting Low Performance

learners, which will enhance their performance. These findings are in accordance with the findings of Isaiah and Nenty (2012) that the government should ensure maximum job satisfaction to educators. In support of this view, Moswella (2014) and Monyatsi (2012) asserted that the government should apply motivational factors to the educator to ensure an effective job performance and equitable transfer of knowledge to learners.

The focus group interview conducted with the learners confirmed that educators are not motivated in transferring knowledge to the learners equitably. This is observed by the learners in their making derogatory remarks of the students, mockery of the students, using abusive words, sending them out of class and attending to only high performing learners and negligence in moral counseling (cf., Table 5, question 1).

**Learners’ Gross Misconduct**

According to the two focus group interviews conducted with the educators and learners, it was discovered that the learners engage in misconduct, which has a direct effect on their performance (cf., Table 4 and 5, question 2). This misconduct, as highlighted by the two study groups, is fighting, alcohol and drug abuse, absenteeism from school, peer pressure, stealing, smoking in the school premises, pregnancy and lack of respect to the educators. These findings adapt the findings of Zulu and Wolhuter (2013) and Moswela (2014) in their study to suggest measures to checkmate the learners’ misconduct which affects their performance.

**Inability to counsel and guide the learners**

The two focus group interviews conducted with the learners and educators revealed that the parents are unable to counsel or guide the learners during their learning process. The educators stressed the effect of the parents’ inability to visit the learners regularly in school to check their conduct (cf., Table 5, question 3). Other factors as highlighted by the interviews include lack of provision of necessary equipment needed for learning, provision of extra classes, providing encouragement in the case of performance decline and provision of exceptional guidance (cf., Table 4 and 5, question 3). In support of these findings, Moswela (2014) emphasised that the stakeholders of education should provide adequate guidance to ensure success in learners’ academic performance.

**Change in the current education system**

The educators claimed that the Ministry of Education should abandon the present education system and introduce another efficient system. Furthermore,
the educators emphasized the effect of mass promotion on the performance of form 3 students and suggested that every learner should pass all the subjects before being promoted to another form (cf., Table 5, question 4). In support of these findings, Moswela (2014) emphasized the importance of the Ministry of Education in establishing good and effective policies aimed at enhancing learners’ academic performance.

**Motivation of educators and guidance of learners**

This section presents the suggestions of the learners and the educators on the measures needed to be implemented in the academic system to ensure excellent performance. The educators said that there were many factors which should be implemented to ensure success (cf., Table 5, question 5). These factors include educators’ adequate motivation, employing other educators, which will reduce educators’ workload. Also, the educators declared that the present education system has been a failure, thereby suggesting that it should be replaced with another one.

The learners suggested that the educators should put an end to the use of abusive words towards students, thereby encouraging maximum support and guidance from the educators and the parents (cf., Table 5, question 4). In this category, another vital finding of this study disclosed the rejection of corporal punishment and the need for other kind of punishment (detention) (cf., Table 5, question 4).

**Conclusions**

The focus group interview conducted with the learners confirmed that educators are not motivated in transferring knowledge to the learners equitably. This is observed by the use of abusive words towards learners, sending them out of class and making derogatory remarks on them, whereas the educators stated that the learners’ decline in academic performance includes misconduct such as alcohol and drug abuse, noisemaking during lessons, smoking in the school, fighting in the school, peer pressure, truancy, and gross absenteeism.

There is an indication from the educators that the parents do not provide adequate guidance or counseling to the learners at home, do not visit them regularly at school or do not have the ability to provide them with the basic things they need for studies. The educators further disclosed that the government’s inability to provide a good working environment, incentives, fringe benefits, salary improvement and measures to reduce excessive workload demotivates them to give the best to
the learners. Also, the educators indicated that the current system of education has been unproductive as it encourages mass promotion of form 3 learners.

This study concludes that the decline in the academic performance of the junior learners in Southern Botswana is attributed to the attitude of both the learners and the educators, also the introduced education system, which has been considered unproductive.

**Recommendations**

The recommendations of this study are as follows:

- The Ministry of Education of Botswana should ensure that educators are well motivated/satisfied to ensure that they will give their best to their learners.
- Educators should be cautioned against negative attitudes to their learners during the process of knowledge transfer, as this will assist in ensuring professionalism on their part.
- Learners should be well guided throughout the process of learning by all stakeholders to minimize their misconduct.
- Disobedient learners should be given corrective measures and the unregretful should be expelled from school.
- Educators should be encouraged to be good role models to their learners.
- The education system should be changed and replaced with a more productive one, which will encourage learners to pass all their subjects before being promoted to another form.
- Educators should be advised to be polite in the process of knowledge transfer while learners should be guided by all stakeholders of education.
- Furthermore, this study stresses the need for a change in the education system of junior secondary schools as the current one is considered unproductive, while the implementation of corporal punishment should be re-addressed as it is considered ineffective by learners.
- The presented study recommends that the Ministry of Education should improve their policy making as the existing policy is considered unproductive. Also, corporal punishment should be reviewed or replaced by detention as recommended by learners.
- There is a need, therefore, for further research to be conducted in this field, especially on corporal punishment and implementation of a new education system.
**References**


Abstract
The aim of this study refers to the understanding of parents' attitudes towards private and alternative schools. The sample consists of 189 parents. The applied instrument consists of the assessment scale of distinctive features of private schools vs. public schools, as well as questions about the level of information about alternative pedagogical concepts. Results indicate that the respondents believe that there are no significant differences between private and public schools, and they are not informed enough about various alternative pedagogical concepts. It may be concluded that work on the promotion of school choice, as parents' right, is very important.

Keywords: alternative schools, democratization of society, pedagogical and school pluralism, private schools

Introduction
Continuous expansion of democratization of education, which especially influenced the development of education in the twentieth century, was a general trend in terms of increasing the diverse offers of educational contents, methods and forms of work, as well as the organization of potentials to choose different ways that lead to acquiring the required education (Ridl, 2003). Today, this tendency is expressed by creating conditions for the exercise of pedagogical and school pluralism that is associated with the operation of private and alternative schools.
According to the most common interpretations, the concept of *private education* specifies a form of education that is established and financed by an individual, non-governmental body or an association that is subject to the relevant laws (Eurydice European Unit, 2000). In that sense, private education is provided in private schools, which may, but need not, be different in the content or methods of education in relation to public schools, since they are an alternative to public schools only in the criteria of establishing and financing. On the other hand, *alternative education* implies education that is different from the dominant educational flows represented by the state, and it may be implemented both in private and public schools. The priority criterion for the definition of the term “alternative school” is the pedagogical specificity of a particular educational institution. Seen in this context, alternative schools are the schools that are characterized by: education focused on the child and his/her individuality; a comprehensive development of students’ potentials; an innovative and flexible curriculum which is based on students’ needs and interests; partnership in education; active participation of students, parents and stakeholders in school life and school development, etc. (Krbec, 1999; Milutinović & Zuković, 2013; Ridl, 2003; Spevak, 2001). Therefore, when a school (either private or public) operates according to the concepts of the reform pedagogy, or has a qualitatively different approach to the educational process, then it is defined as an alternative school.

Today, there is a wide range of practices in the exercise of pedagogical and school pluralism in most countries of the European Union, while the opportunities to choose among different schools, either within the state system or between the public and private school offers, are the rule rather than an exception. Thereby, the viewpoints in terms of reliance on free market mechanisms in education are polarized and very subjective. The literature states (Sliwka & Istance, 2006) that the opponents of private schools argue that acceptance of the school choice policy allows for a possibility for some students to get a better education than others, and that an introduction of the market-based approach in education abandons its most important function, which is reflected in the transfer of common cultural values of the national interest. The literature also points out that the positions opposite to the smooth parental choice of a school are based on the belief that education is not a “commodity”, but the public good which helps society to achieve its goals (Savićević, 2000), and that the introduction of free-market principles to the field of education further intensifies the existing class and social inequalities (Boyd, 2005). On the other hand, there is a widespread belief according to which the choice of a school is an important device for improving the quality of education. Thus, the literature suggests that...
school choice supporters believe that the implementation of the school choice policy introduces a diversity in a uniform education system; solves the problem of mediocrity in public education; encourages the involvement of parents in the education of their own children; increases educational opportunities for some poor, i.e., deprived students; respects large differences in students’ abilities, needs and goals, and allows multi-ethnic communities to preserve and promote their culture and tradition (Boyd, 2005). Thereby, most arguments supporting the school choice are based on the standpoint that the possibility to choose is a fundamental principle of a pluralistic democratic society.

The issue of school choice remains somewhat conflicted at the empirical level. Previous experiences from Europe and the United States suggest that school choice has a tendency to increase the educational gap between the privileged and underprivileged (Ambler, 1994; Butler & van Zanten, 2007). Some studies (Teske, Fitzpatrick & Kaplan, 2006) emphasize that different levels of information affect the choice of a school, depending on parents’ income. Although differences in the awareness of a possible school choice are not large, there is a significant difference in the selection of schools. Parents with lower income more frequently enroll their children in a school which is closer to their place of residence, which is attended by their friends’ children, and which provides a higher level of safety for children, while they are less interested in the quality provided by the school in the academic sense.

On the other hand, studies show that parents perceive differences among schools of different quality. They tend to choose a “better” school for their children, regardless of whether it is defined through academic results, or the social context (Hirsch, 2002). This supports the understanding that the policy of school choice creates a relationship of competition among schools, which can lead to the improvement of education quality. Research results indicate that higher satisfaction with a school is present in parents who have already actively participated in the choice of the school (Randall, 1994), and it is shown that the parents of higher social status and education actively select schools (Goldhaber, 1999; Walford, 1996). Research (Sliwka & Istance, 2006) confirms that parents’ involvement in their children’s school activities is increased in private schools. Some studies (Coleman & White, as cited in: Randall, 1994) suggest that, due to parents’ active involvement, students of private schools are more likely to receive appropriate education. Other studies (Henig, 1994) undoubtedly show that parents’ choice of a school strongly influences the parents’ satisfaction, responding both to their expectations in terms of pedagogical solutions and to their sense of empowerment in terms of decision-making about their own children.
Taking all this into consideration, it could be concluded that the views on the issue of school choice are mutually opposed and that the results of research in this field are interpreted in very different ways. However, the fact is that the choice of a school already exists in practice and that it is currently widely accepted as a pedagogical and political option. When it comes to the situation in Serbia, development of pedagogical and school pluralism, seen through the prism of the operation of private and alternative schools, is still in its infancy. Therefore, in addition to the theoretical analysis of experiences of European countries in this area, there is a need for examining the attitudes of different stakeholders in Serbia, especially parents, as direct participants in school choice.

Research Methodology

The aim of the research was related to the consideration of parents' attitudes and the level of information about private and alternative schools. Accordingly, the following research objectives were operationalized: 1. Examine parents' attitude toward distinctive features of private schools in relation to public schools; 2. Check the level of information about alternative pedagogical conceptions; 3. Examine parents' attitude toward the need to increase the number of alternative schools in Serbia; 4. Examine the existence of statistically significant differences in parents' responses depending on the measured socio-demographic features.

The applied instrument designed for the requirements of this study consists of two parts. In addition to questions on respondents' socio-demographic characteristics (level of education and estimated financial status of the family), the first part of the instrument consists of an evaluation scale (11 items) of distinctive features of private schools in relation to public schools, where the answers are offered on a three-level scale (1 – I disagree; 2 – there is no difference; 3 – I agree). The second part of the instrument is related to the issues on self-assessment of the level of information about alternative pedagogical concepts (Montessori pedagogy, Freinet pedagogy, Decroly pedagogy, Steiner pedagogy and Step-by-step methodology), while the responses are given on the four-point Likert scale (1 – not at all; 2 – little; 3 – much; 4 – very much). This part of the instrument includes the question about a need to increase the number of alternative schools in Serbia. In addition to three offered answers (1 – no; 2 – I am undecided; 3 – yes), there is also an option where respondents could explain their arguments for the selected answer.

The sample consisted of 189 parents of elementary school children who attended public schools. It was a sample of convenience, and the research was
carried out in three public schools in the territory of the City of Novi Sad. Within descriptive statistics, there were measured average values (arithmetic mean) and dispersion of results measures (standard deviation). Factor analysis was applied to examine the latent structure of the measured variables, while t-test and \( \chi^2 \) test were applied in order to analyze the statistical significance of differences.

**Research Results**

*Distinctive Features of Private Schools Compared to Public Schools.* Results of the factor analysis Scale of distinctive features of private schools have shown that it is a one-dimensional scale (the percentage of explained variance of the first isolated component is 35.31, and the other is markedly lower, i.e., 12.31), which is shown by the correlation of items with the first principal component, which is over .30 (Table 1). A high level of internal consistency of the items was established (Alpha coefficient is 0.81).

| Table 1. Factor analysis of the scale on distinctive features of private schools vs. public schools |
|---|---|
| **Items** | **Component** |
| 10. Communication between teachers and parents is better in private schools. | .677 |
| 7. In private schools, children learn more foreign languages. | .669 |
| 3. Private schools open more opportunities for introduction of innovation in the educational process organization. | .633 |
| 9. Children with problems are better disciplined in private schools. | .625 |
| 8. Private schools are more focused on the development of social sensitivity and tolerance among students. | .620 |
| 4. Parents are more involved in the school life and work in private schools. | .616 |
| 5. Private schools are characterized by greater care for the child before and after school. | .586 |
| 11. Children gain better computer literacy in private schools. | .576 |
| 6. Private schools are more focused on healthy diet and sports activities. | .574 |
| 2. Private schools have better conditions for work with children with developmental disorders. | .537 |
| 1. Private schools provide better quality work due to a small number of students in classes. | .359 |

The obtained average score at the level of the entire scale (\( M=2.36, SD=0.61 \)) showed that the parents thought that there were no significant differences between private and public schools, whereby they gave a slight advantage to some features to
Parents’ Attitudes toward and Level of Information

private schools. A detailed view of descriptive statistics for each item showed that the majority of the parents believed that the priority of private schools compared to public schools was reflected in the feature related to *A foreign language learning* \( (M=2.6) \), *Class size* \( (M=2.5) \), *Conditions for work with children with developmental disabilities* \( (M=2.5) \), as well as the opportunity to *Gain computer literacy* \( (M=2.5) \). On the other hand, the results showed that the majority of the parents were of the opinion that there was no difference between private and public schools in the area of *Disciplining problematic children* \( (M=2.0) \) and the *Development of social sensitivity and tolerance in students* \( (M=2.0) \).

Parents’ level of information about alternative pedagogical concepts. A determined value of arithmetic mean of the obtained responses \( (M=1.6, SD=0.7) \) showed that the majority of the parents thought that they were very little informed about alternative pedagogical concepts.

### Table 2. Parents’ level of information about alternative pedagogical concepts

<table>
<thead>
<tr>
<th>Alternative pedagogical concept</th>
<th>Responses</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>No answer</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montessori pedagogy</td>
<td></td>
<td>44.4%</td>
<td>31.7%</td>
<td>14.8%</td>
<td>2.1%</td>
<td>6.9%</td>
<td>1.7</td>
<td>0.8</td>
</tr>
<tr>
<td>Step-by-step pedagogy</td>
<td></td>
<td>37.6%</td>
<td>36.5%</td>
<td>14.3%</td>
<td>4.8%</td>
<td>6.9%</td>
<td>1.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Steiner pedagogy</td>
<td></td>
<td>59.8%</td>
<td>25.4%</td>
<td>5.3%</td>
<td>1.1%</td>
<td>8.5%</td>
<td>1.4</td>
<td>0.7</td>
</tr>
<tr>
<td>Decroly pedagogy</td>
<td></td>
<td>60.8%</td>
<td>26.5%</td>
<td>4.2%</td>
<td>1.1%</td>
<td>7.4%</td>
<td>1.4</td>
<td>0.6</td>
</tr>
<tr>
<td>Freinet pedagogy</td>
<td></td>
<td>61.4%</td>
<td>26.5%</td>
<td>3.2%</td>
<td>1.1%</td>
<td>7.9%</td>
<td>1.4</td>
<td>0.6</td>
</tr>
</tbody>
</table>

The obtained average scores (Table 2) showed that the parents were informed to a small extent about the Step-by-step methodology and Montessori pedagogy, while the obtained average scores in three remaining alternative pedagogical concepts showed that the greatest number of parents was not informed about them.

**A need to increase the number of alternative schools in Serbia.** Based on the obtained average score \( (M=1.9, SD=0.7) \), it is possible to conclude that most parents are hesitant about the need to increase the number of alternative schools \( (46\%) \). About 30% of the parents think that there is no need to increase the number of alternative schools in Serbia, while about 24% of the parents show a positive attitude towards this issue.

**Differences in the parents’ responses depending on the measured socio-demographic characteristics.** The results showed that statistically significant differences were identified only in the questions related to the level of the parents’ level of
information about alternative pedagogical concepts, considering the level of their education. Namely, it was determined that there were statistically significant differences in the level of information about Step-by-step methodology ($t(174) = -2.07$, $p<.05$), whereby the parents of a higher level of education ($M=2.0$, $SD=0.9$) were more informed than the parents of a lower level of education ($M=1.7$, $SD=0.8$). Also, it was found that there were marginally significant differences in the level of information about Steiner pedagogy ($t(171) = -1.68$, $p=.09$) in the same way in which the parents with higher levels of education earn higher scores ($M=1.5$, $SD=0.7$) than the parents with lower levels of education ($M=1.3$, $SD=0.6$).

Discussion

Although our research was conducted on a sample of convenience, which did not allow for generalization of the obtained findings, the presented research results are probably the result of the general situation of (un)operation of the school and educational pluralism in Serbia. Namely, the obtained findings show that the majority of the surveyed parents do not observe significant differences between private and public schools. While the literature (Cox & Witko, 2008) emphasizes that private schools are less bureaucratic and have a greater degree of autonomy, which results in more pleasant settings for the increased involvement of parents in school activities, the results of our research show that 50% of the surveyed parents think that there is no difference between private and public schools either in terms of parents' involvement in school work or in terms of the quality of communication between teachers and parents. However, the surveyed parents do give a slight advantage to private schools for particular characteristics (class size, gaining computer literacy, learning foreign languages and work with children with developmental disorders). Since the sample includes parents whose children attend a public school, their attitudes probably result from indirectly obtained information on the work of private educational institutions in our country. On the other hand, the responses given by the surveyed parents potentially suggest that the tendency of development of private compulsory education in Serbia is similar to the situation in which the education systems of certain countries of Central and Eastern Europe (Bulgaria, Slovakia, the Czech Republic, Hungary, Poland) were in the early nineties of the twentieth century, when the organizers of private schools tended to limit the number of children in the class, to individualize teaching and intensify foreign language learning (Klus-Stanska & Olek, 1998; Kozakiewicz, 1992; Sliwka & Istance, 2006).
Taking into consideration that the alternative education in Serbia is still in its infancy and that an important precondition for the operation of alternative schools is parents well informed about the work programs of such schools, our research included the issue related to the parents’ self-assessment of the level of information about certain alternative pedagogical concepts that are most prevalent in Western education systems. The results show that the majority of the parents emphasize that they are little or not informed about the alternative pedagogical conceptions. Thereby, it is shown that the parents of a higher level of education are more informed than the parents of a lower level of education, which is in line with the results of the research carried out in the United States (Teske, Fitzpatrick & Kaplan, 2006). The obtained data have certain similarities with the results of the research conducted after about fifteen years of operation of alternative primary schools (two Waldorf schools, and one Montessori school) in the Republic of Croatia (Rajić, 2008), which has shown that parents have very little knowledge about alternative pedagogical concepts.

The parents in our sample were asked a question about the need to increase the number of alternative schools in Serbia. It turned out that the majority of the surveyed parents were undecided about this issue. On the offered opportunity to explain their opinion, the parents stated that one of the key reasons for their irresolution was a lack of information on the functioning of alternative schools. Also, qualitative analysis of the obtained responses showed that the parents largely believed that alternative schools were not available for everyone. They argued that public schools should provide an appropriate quality of education and expressed doubts about the quality of education offered by alternative schools. It seems that the parents’ fear that alternative schools provide benefits to children whose parents belong to higher and wealthier classes is not ungrounded because the Law on Primary Education from 2013 (Službeni glasnik RS, Br. 55/2013) in Serbia does not prescribe either partial or full cover of the costs of operation of special pedagogical orientation schools by the state. However, the literature (Eurydice European Unit, 2000) indicates different experiences in many countries of the European Union (Belgium, Denmark, Germany, Spain, Ireland, Luxembourg, Austria, Finland and Sweden), where most private schools are established as an alternative to public education and are supported by the state budget.
Conclusions

It could be said that, in the process of economic transition of Serbia, development of school pluralism, i.e., the establishment of a large number of private and alternative schools is something that is ahead of us. It is currently more realistic in our social and political context of education that the diversity of educational offers is realized through the development of an education policy that provides greater support to the introduction of alternative pedagogical conceptions and their elements into state schools. The obtained results concerning the level of the surveyed parents’ information about and attitudes towards private and alternative schools imply a need to intensify efforts to promote school choice as parents’ right, as well as the necessity to inform parents about the essence and the nature of different pedagogical concepts. The point is that in the situation of the existence of a diversity of educational offers, the choice could increase the quality of education only if parents make good decisions based on information.

Acknowledgements

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References


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Arab Culture Education Using a Soap Opera: Focus on the Application of the Methodology of Ethnography of Communication

DOI: 10.15804/tner.2017.47.1.08

Abstract
This article aimed to suggest implications of learner-centered culture education through observation, participant observation, interviewing or ethnoscience in particular. Korean Arabic language learners were asked to watch two episodes of an Arab soap opera and compare and contrast their own culture from Arab culture based on what they had watched. Results of this study showed a desirable direction, from insiders’ perspectives, for culture education utilizing the methodology of ethnography of communication. In order to establish Korean learners’ cultural identities as well as to equip them with cross-cultural competence through which they can appropriately, accurately behave depending on situational context, this methodology of ethnography of communication into Arab culture educational practice should be made in the future.

Keywords: ethnography of communication, Arab culture education, ethnoscience, participant observation

Introduction
There has been a rising demand for the Arabic language in Korea. The importance of the Arabic language is already apparent – it is one of the six official

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1 This study was supported by Hankuk University of Foreign Studies Research Fund of 2017.
languages of the United Nations (UN). In Korea, a need for Arabic language education emerged due to the first and second oil crisis. Now it is one of the foreign languages on the College Scholastic Ability Test (CSAT), being the most popular subject out of all the other foreign languages among test-takers. In this atmosphere wherein needs for diverse approaches to culture education are mounting in Arabic education, this study aims to compare and contrast cultures of language learners and of the target language utilizing a soap opera as a tool. Also, effective teaching methods using language in culture education are investigated by implementing the methodology of ethnography of communication based on the principle of participant observation.

**Research Problem**

Korea is facing unprecedented demand for Arabic instruction and an increasing number of the Korean population desires to learn Arabic in order to keep up with this trend. Hence, research on Arab culture education that is in tune with the needs of the language learners and of the current generation is imminent. As the communicative approach came to the center in the field of foreign language teaching, there have been movements in Arabic language education that put emphasis on culture education in an attempt to develop the cultural knowledge as well as linguistic knowledge of the target language for effective communication.

In order to effectively communicate in a target language, the language learner needs to be knowledgeable about the internal elements, not only external elements, of the target language. It means that knowledge of the Arabs’ sociocultural identities is a prerequisite to truly understand Arab culture and to reach one’s desired levels of communication in Arabic. In this context, sociocultural aspects are being greatly emphasized in language education, culture education methodologies that teach cultures in a direct manner such as Inter-cultural Approach, Ethnography of Communication, or Language and Culture Integration have been introduced.

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2 The languages that Patent Cooperation Treaty (PCT) acknowledged as official languages are Japanese, German, Portuguese, and Korean as well as the six official languages of the UN that are English, French, Chinese, Spanish, Russian, and Arabic.

3 Ministry of Education, Science and Technology, *Current Statistic of Arabic language learners* (as of April 1, 2015)

<table>
<thead>
<tr>
<th>Year</th>
<th>1999</th>
<th>2011</th>
<th>2013</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students</td>
<td>760</td>
<td>1014</td>
<td>1236</td>
<td>1327</td>
</tr>
</tbody>
</table>

Current Statistic of CSAT-taker (Arabic language) (as of Oct. 2016)

<table>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2010</th>
<th>2014</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of CSAT- takers</td>
<td>5,072</td>
<td>49,116</td>
<td>12,356</td>
<td>65,153</td>
</tr>
</tbody>
</table>
to the Arabic language teaching field. According to Kim (2008), using the ethnography of communication approach is one of the most effective ways of teaching target cultures that a language educator can implement in language education. It is the best way of increasing learning efficiency, requiring learners to observe and record their own verbal behavior.

This article intends to suggest implications of learner-centered culture education through observation, participant observation, interviewing or ethnoscience in particular. To do this, language learners were asked to watch two episodes of a soap opera and to compare and contrast their own culture from Arab culture based on what they had watched. This effective way of learning culture can be implemented in a form of the methodology of ethnography of communication such as observation or participant observation in processing the differences between their own culture and Arab culture that they found from watching the episodes.

**Diverse Approaches in Culture Education**

In 1952, Kroeber and Kluckhohn suggested concepts of ‘culture’ in 162 different ways based on the existing literature at that time. 50 years later, it was reorganized by other scholars working on culture, who suggested more than 300 definitions of it. This phenomenon in which the number of the definitions of culture has doubled in 50 years indicates that culture has been identified in a various way depending on varied views or approaches (Kim, 2008: 46). Kim (2001: 86) states that although there is no hierarchy among worldviews or cultures, people often experience misunderstanding, frustration, anxiety or repulsion in their communication process. This reality is inevitable in the process of cross-cultural communication.

**Research Methodology**

In the current Arabic teaching context, it is not easy to experience cultural differences by actually staying in or experiencing Arab culture for a long period of time. Therefore, videos were used in order to explore cultural differences between language learners’ own culture and Arab culture. To examine these cultural differences, methods of observation, participant observation, interviewing, and ethnoscience were implemented. Through these methods, it was found that cultural misunderstandings and conflicts decreased and learners themselves participated in the observation process, which consequently led to learner-centered culture education.
This study aimed to explore experiential culture education in which learners themselves participate and examine differences from their own culture by watching videos. Learners were put in groups to watch videos in this experiment. After watching them, they were asked to discuss their perceptions from the video watching in relation to cultural differences and to summarize what they had discussed in groups. Those group summaries were then shared in the whole class. Finally, the learners were able to discern errors from their own misunderstandings of Arab culture through the methodology of ethnography of communication, which enabled them to participate in the process of measuring the validity and reliability of their own observations.

**Group Activities Utilizing a Soap Opera**

Participants in this study were divided into two groups: Group A consisted of 89 freshmen, who had studied Arabic less than a year in six Arabic language departments at five different universities. Group B consisted of 82 students from sophomores to juniors, who had studied Arabic more than one to less than three years at the same departments as Group A.

The videos used in this study were episodes from ‘Ashwak Na‘em’, a Syrian soap opera. Two episodes from the show that were thought to naturally present Arab culture and conversation in everyday life were selected. The rationale for the selection of this soap opera was as follows: each episode was 15-minute long and thus it was not difficult to watch; it included a great deal of elements of daily life culture despite exaggeration of characters to some extent; and it dealt with actual conflicts of young generation that had been major issues in Arab societies. The procedure of this class is presented in Table 1.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Watch</td>
<td>Watching episodes #17 and #20 of Ashwak Na‘em.</td>
</tr>
<tr>
<td>Discussion</td>
<td>Discussing each individual’s perceptions of cultural differences in groups</td>
</tr>
<tr>
<td>Presentation</td>
<td>Presenting each group’s summary of group discussion and comparing learners’ own cultures from Arab culture.</td>
</tr>
<tr>
<td>Questions &amp; Answers</td>
<td>Asking questions about what they have presented and listening to an Arab professor’s explanation of Arab cultural backgrounds</td>
</tr>
<tr>
<td>Assignment &amp; Activities</td>
<td>Given a further assignment and activities using the methodology of ethnography of communication in order to participate in and observe cultural differences</td>
</tr>
</tbody>
</table>
After watching episodes #17 and #20 of *Ashwak Na‘em* and briefly summarizing the stories, the learners were asked which points of cultural differences they had paid particular attention to. The cultural differences based on the learners’ perceptions that were clarified later by the Arab professor during the discussion are all presented. The brief summaries of two episodes are presented in Table 2.

**Table 2. Summary of episodes**

<table>
<thead>
<tr>
<th>Episode</th>
<th>Summary</th>
</tr>
</thead>
</table>
| Episode #17 | – Mara’s father happens to see Mara greeting her cousin Maryam, who is with a male student, and scold her for it. Mara’s mother and her neighbor lady comfort Mara. Mara complains that she cannot understand her father.  
– Riah, a high school student, falls in love with her Chemistry teacher and tries to be closer to him on the excuse of her study. Her friends make fun of her because of this situation. |
| Episode #20 | – When Mara and Riah are listening to music together, their father comes into the room and says that they are supposed to open the door when there are just two of them in the room. Two sisters feel suffocated.  
– In a Philosophy class, the teacher and students talk about ‘love’.  
– Teachers in the school check students’ uniforms and scold a few students who do not conform to the rules of the school regarding uniforms. |

**Group A:**

- I do not understand why Mara has to be beaten only because she greeted her (male) cousin.
- I think Arab society is way more conservative than Korean society.
- I feel frustrated that what a mother can do when her daughter is scolded by her father is merely comforting her daughter.
- Arab society seems to be considerably patriarchal.
- A girl trying to express her love for her teacher looks the same both in Arab society and Korea.
- When they talk about love, the teacher’s saying that love to ‘Allah’[^1] is important is impressive to me.
- It was surprising to see the culture of wearing shoes indoors exists in Arab society, not only in Western societies.
- It is amazing that even high school students already have a designated person to marry.
- Fathers in Korea nowadays respect their children’s opinions. On the contrary, it looks like fathers’ opinions play a key role in Arab society.

[^1]: *هَلْلَا* in Arabic. This term refers to God in Islam.
• It is impossible to happen in Korea that a father scolds his teenage daughter because of her listening to music.
• Arab women dress more freely than I thought they would. I thought all women in Arab society would wear hijab.

**Group B:**
• The patriarchal aspects of Arab society will hinder its development.
• I could sense that Arab and Korean people shared a similar sentiment when watching the teenage Arab girl getting excited by a soccer game.
• As a way of greeting, Arab people repeat the greeting words over and over. It shows that hospitality is an important element in Arab culture.
• It felt positive that Arab women were actively engaged in social activities.
• I can see that Islam resonates with overall lives of Arabs as seen from numerous expressions including ‘Allah’, which wish God’s blessings.
• Arab people actively express themselves using a great deal of body language when talking to one another.
• Arabs tend to exaggerate things.
• Interests of the teens are the same in Korea and Arab countries.
• It was impressive that the Arab woman proactively expressed her love for the married man. This differed from conservative features of Arab society that had been traditionally portrayed from outside.
• In Arab countries, it is possible for one to marry his/her cousin. I still do not understand this point but think it is a part of their culture.

In group A’s responses in relation to cultural differences, it is demonstrated that they strongly reacted to the limited gender roles of women in Arab society. Also, they were interested in the social phenomenon of arranged marriage. Especially those who had not been much exposed to Arab culture expressed their surprise when seeing the Arab father’s punishment using force towards his children. They were unfamiliar with and strongly disgusted by seeing young generation struggling with their relationships with the elder and succumbing to authority figures that used force.

Group B showed cultural maturity that acknowledges the male-dominated aspects of Arab society as well as compares those aspects with other cultural features of Korean society. Also, they were able to describe sociocultural customs and features such as long greeting words, a tendency to exaggerate or Arab’s love for soccer in a detailed manner.

In the process of finding cultural differences, it is clearly seen that Group B had a much shorter list of cultural differences than Group A. Moreover, Group
B showed a much more positive and active attitude toward the target culture as well as willingness to understand it. Group A and B came to develop deeper knowledge about Arab culture by sharing each group’s different thoughts. Overall, all the learners were satisfied with this learning method in which they watched a soap opera and explored cultural differences. To encourage them to have a new understanding of different cultures through their own observation of cultural differences, this study implements the methodology of ethnography of communication.

**Discussion**

**Culture Education Using the Methodology of Ethnography of Communication**

Language is a part of a culture; therefore, in order for successful communication at the native-speaker level to take place, one needs to understand sociocultural phenomena of the target culture. Furthermore, the difference between learning about a culture and learning a culture is equivalent to that of obtaining knowledge of a target language and obtaining a target language itself – learning a culture differs from learning about a culture. In that sense, adapting the methodology of ethnography of communication in foreign language education is crucial; it helps learners to measure their own culture and enhances their cross-cultural competence of the target language, comparing their own and the target cultures (Han, 1999: 354).

To lessen conflicts and shocks from cultural differences and expand learners’ cultural knowledge, a lot of time and energy is required from learners. The methodology of ethnography of communication will help learners to reduce the time devoted to the process of approaching diverse cultures of their target languages. Furthermore, learners will become aware of their own bias that they used to have toward the target culture. It will eventually facilitate learners’ cultural knowledge of the target language.

**Culture Education through Observation and Participant Observation**

This study also investigated culture education based on the methodology of ethnography of communication in order for learners to identify the cultural differences they found while watching the videos and to develop their cultural acquisition abilities. Ethnography of communication was first suggested by Hymes (1962), when he published the ethnography of speaking. It refers to the study of
the way that consists of a part of culture system and focuses on categorization of communicative behaviors related to other compositional elements of the system.

**Table 3. Contents and activities of observation & participant observation**

<table>
<thead>
<tr>
<th>Method</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation &amp; Participant-Observation</td>
<td>* Observation of Arab culture</td>
</tr>
<tr>
<td></td>
<td><strong>&lt;Suggestions&gt;</strong></td>
</tr>
<tr>
<td></td>
<td>1) Visit Arab families residing in Korea and experience the relationships within the families in person.</td>
</tr>
<tr>
<td></td>
<td>2) Meet Arab college students studying in Korea and have a conversation on interests of teens or people in their twenties.</td>
</tr>
<tr>
<td></td>
<td>3) Meet Arab people of varied age range and observe their communication styles.</td>
</tr>
<tr>
<td></td>
<td><strong>&lt;Assignment&gt;</strong></td>
</tr>
<tr>
<td></td>
<td>1. What did the relationships in the Arab family from the videos you watched look like?</td>
</tr>
<tr>
<td></td>
<td>2. What were the reactions of children to adults' scolding in the Arab family? What types of expressions and behaviors were mainly used?</td>
</tr>
<tr>
<td></td>
<td>3. Based on your encounter with Arab college students, what are the most attention-getting topics among the teens and people in their twenties?</td>
</tr>
<tr>
<td></td>
<td><strong>&lt;Activities&gt;</strong></td>
</tr>
<tr>
<td></td>
<td>1. Learners participate in and observe customs, expressions, and behaviors of Arab culture. Afterwards, they make an analysis of the features of Arab culture by comparing and contrasting them with Korean culture and record it on an observation note.</td>
</tr>
<tr>
<td></td>
<td>2. After researching universality and particularity of Arab culture that learners have experienced based on group observation, learners have a discussion and give a presentation on their research results.</td>
</tr>
<tr>
<td></td>
<td>3. Learners make situational dramas and perform them in groups.</td>
</tr>
</tbody>
</table>

As learners interpret situations in their own way with their own perspectives, there is a lot of room for misunderstandings of cultural differences that they find while watching short films. After learners experience the indirect way of culture observation through watching videos, a process to confirm validity of the observation is necessary. Related assignments can be either handed out as homework or suggested before a class starts and learners give a presentation on their observations at the end of the semester.

---

5 Introspection is a crucial method in the methodology of ethnography of communication in order to see learners’ perceived culture in an objective way. Although learners are sure that they know the type of language use or culture of their own language communities, it is necessary for their assumptions developed by their senses to be reflected by others’ senses. In this sense, introspection is often used with observation (Wang, Baek, Lee & Kim, 2009: 151)


Culture Education through Interviewing

Table 4. Contents and activities of interviewing

<table>
<thead>
<tr>
<th>Method</th>
<th>Contents</th>
</tr>
</thead>
</table>
| Interviewing | <Suggestions> 1) Do research on unique features of family relationships in Arab communities.  
|              | 2) Compare social Arab culture phenomenon of respecting seniors or using the honorific to the elder with those in Korea. Find differences and similarities.  
|              | 3) Find marriage customs in Arab.  
|              | <Assignment> 1. Ask some questions about casual relationships between parents and children in Arab families.  
|              | 2. Ask some questions about the main causes of conflicts between parents and children.  
|              | 3. Ask some questions about common behaviors or expressions toward elders in Arab society.  
|              | <Activities> 1. Make open-ended questions, not multiple-choice.  
|              | 2. Make a note on new observations and verbal expressions that you have come across through the interviewing process (using a recorder or other equipment is allowed).  
|              | 3. Compare each group’s interview results by presenting them to the whole class. |

Interviewing is a great way of developing the concept of relativity in learners. In the process of gathering data and analyzing the target language and culture, learners are required to open their doors to new thoughts, information or formats that emerge and to the gap between ‘ideal’ and ‘actual’ cultures that are reflected in statements or behaviors of the target culture (Wang, Baek, Lee & Kim 2009:156). Through making questionnaires and talking to interviewees, learners are able to realize existing cultural gaps between their own culture and the target culture. Eventually, this interviewing process will lead them to gain an insight into the concept of relativity while asking questions and getting answers.
Culture Education through Ethnoscientific

Table 5. Contents and activities of ethnoscientific

<table>
<thead>
<tr>
<th>Method</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnoscientific</td>
<td>&lt;Suggestions&gt;</td>
</tr>
<tr>
<td></td>
<td>1) Using proverbs, understand differences of cultural phenomena and worldviews in Arab culture.</td>
</tr>
<tr>
<td></td>
<td>2) Find some verbal expressions that Arab people often use when greeting and compare them with Korean culture</td>
</tr>
<tr>
<td></td>
<td>3) Find some verbal expressions regarding the way people address one another (family members, acquaintances, etc.)</td>
</tr>
<tr>
<td></td>
<td>&lt;Assignment&gt;</td>
</tr>
<tr>
<td></td>
<td>1. Do research on the titles by which one addresses his/her relatives in Arab and Korea, respectively. Afterwards, think about what centers on human relationships in Arab society.</td>
</tr>
<tr>
<td></td>
<td>2. Identify how varied emphasis points in expressions depend on situations when people greet one another and make a list of the vocabulary used in those expressions. Also, identify each context where different greeting expressions are used according to interlocutors’ gender or age.</td>
</tr>
<tr>
<td></td>
<td>3. Find Arab proverbs in relation to saving face or gaining honor and compare those with Korean proverbs.</td>
</tr>
</tbody>
</table>

<Activities>
1. When giving a presentation, use PowerPoint with tables so that your audience can see the cultural differences being presented at a glance.
2. Align Arabic expressions with commonly used Korean expressions in the same situations and compare them.
3. Include both external and internal perspectives of looking at the cultural differences being presented.

Ethnoscientific, which is often called ethnosemantics, refers to a way of studying cultural domains focusing on how native speakers of a certain society use their language as a tool of symbolization process. Ethnoscientists approach cultures from internal perspectives and examine cultures through a lens of language use. This is based on the belief that people express their own world using language as a means and explore how they are analyzing their experiential world by observing their patterns of using language (Frake 1962: 59). Ethnoscientific enables learners to look into their target cultures from insiders' point of view, which may solve their doubts. Furthermore, it leads them to understand universality and particularity of culture and foster positive, mature attitudes toward their target cultures.
Conclusions

This study explored cultural differences between learners’ own culture and their target language culture using a soap opera and showed a desirable direction from insiders’ perspectives for culture education utilizing the methodology of ethnography of communication. Based on participant observation, the methodology of ethnography of communication is a way of recording how members of a community live, how they interact, how they behave, or what they believe in in a detailed manner (Kim, 2008: 136). Therefore, implementing this method into educational practice inevitably requires a great deal of time. Yet, there is no doubt that it would be an effective way of culture education as learners themselves select cultural differences through watching a soap opera and observe the differences of their interests.

The methodology of ethnography of communication is an ethnographic approach aiming at a target language. It is an effective method of teaching both language and culture. Watching a soap opera, learners were able to explore such elements of Arab culture as patriarchal customs in Arab families, the spread of love marriage instead of arranged marriage, gender role change of women, concerns and interests of Arab youngsters, etc. Learners succeed in culture education when they understand Arab culture by observing it in person and learning its verbal behaviors – this is a key to natural, ideal culture education.

Overall, the methodology of ethnography of communication is suitable for culture education in the sense that various ways of culture education that can be integrated with language education are urgent nowadays. In order to communicate using the target language and to have a proper knowledge of Korean, language education may consider implementing the methodology of ethnography of communication.

To conclude, this study has explored culture education methods using observation, participant observation, interviewing, and ethnoscience approaches in the context of the methodology of ethnography of communication. Consistent efforts to implement the methodology of ethnography of communication into Arab culture educational practice should be made in order to establish learners’ cultural identities as well as to equip them with cross-cultural competence through which they can appropriately, accurately behave depending on situational contexts.
References

Servant Leadership as a Predictor of High School Principals’ Organizational Trust

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Abstract

The aim of this study was to investigate servant leadership as a predictor of high school principals’ organizational trust. A correlational research method was utilized in this study. The sample population consisted of 103 subjects, of whom 52 were male and 51 female. Page and Wong’s servant leadership questionnaire and Ellonen, Blomqvist and Puumalainen’s Organizational Trust questionnaire were used. Cronbach’s alpha was 0.90 for the servant leadership questionnaire and 0.93 for the organizational trust questionnaire. Pearson’s correlation coefficient and stepwise regression were utilized for data analysis. Results revealed that there is a positive and significant relationship between servant leadership and organizational trust. Stepwise regression analysis revealed that among the components of servant leadership, components create a spirit of leadership (35%) in the first step while the prospective component (6%) in the second step was the most predictive of organizational trust. In fact, these two components together explained 41% of the variance in organizational trust.

Keywords: servant leadership, organizational trust, principals, high school
Introduction

One of the main components of management is leadership; leadership has been widely investigated as one of the important factors affecting an organization. The successes of an organization in achieving preset goals, the amount of staff effort for the success of the organization and the impact of the leader on staff depend on leadership behaviors and leadership style. Leadership is the most important issue in the field of organizational behavior and human relations (Rezaeian, 2005). Educational leadership requires, firstly, a work environment and the interpretation of the definition of objectives, preparation and implementation of programs, effective guidance and training activities, to cooperate actively and dynamically transform a system, and secondly, strengthen them by helping the people who are involved in teaching and learning, innovation and working with them effectively. In such circumstances, the blossoming of talents and abilities are secured (Alaghehband, 2010). The overall project of a leader acts in a way that it is picked up by the staff in a process called a leadership style. A leadership style reflects the way of thinking, worldview and the leader’s character (Mirerzaaei, 2013).

Service to others is an issue older than the new concept of servant leadership, but statistics of official opposition of leadership and service within a structure in the new era are attributed to Greenleaf (Hayden, 2011, as cited in Khorshid, 2014). Reviewing this style of leadership in order to develop a theoretical framework involves preparation, which qualifies the basis for the classification and valuation of the characteristics of the servant leader, which is used to help managers. Therefore, the issue of servant leadership is very important for all organizations where the leadership style provides the potential improvements in organizational leadership in most environments (Hassanpour, 2004). Servant leadership is defined by some positive features and the absence of some negative features. Positive features include: a) to serve, b) leadership, c) prospective, d) develop others, e) empowering others, f) team building, g) shared decision-making, and h) alliance, whereas negative features include: a) abuse of power and influence, b) pride and egoism (Page & Wong, 2003).

The concept of trust and its issues have been increasingly studied by organizations for the past few years. The importance of trust in organizations is obvious today because communication and cooperation between people requires trust. In an era when relationships between individuals and groups have degenerated and are rapidly changing, trust, which is mainly based on inference and interpretations about motivation, personality and conscience of others, is the pivotal issue for organizations, which ensures their growth and survival. Trust is important because
principals are looking for understanding on how to create an effective cooperation in organizations (Tayler, 2003). Greenleaf believes that trust is a turning point for servant leadership, as legitimate leadership starts with trust. He points out that only the people with solid experience in the service of their own organizations can be trusted. He stresses that in servant leadership, a person is competent for leadership as a trusted servant because their lofty position as a servant could be trusted (Sendjaya & Pekerti, 2010). Russell believes that trust is the essence of servant leadership (Joseph & Winston, 2005).

Gholami, Shirbagy and Hajizadeh (2009), in their research on the effect of servant leadership and empowerment of government organizations, point out that there is a strong relationship between servant leadership, organizational trust and empowerment. Their research also indicates that there is a significant difference between the perception of employees and managers of servant leadership. Studying the effect of the servant leadership style of managers on organizational trust of the staff of Ferdowsi University of Mashhad, Khojasteh Boujar (2009) found that the more accommodating the behavior of managers with an index of servant leadership, the more their staff would trust them. Ardalan, Ghanbari, Nasiri Valik Bani and Beheshhti Rad (2013) studied the role of servant leadership in improving organizational trust with the mediator role of empowerment and showed that the direct effect of servant leadership on empowerment is positive and significant. The direct effect of this variable on organizational trust was also positive and significant. But the effect of empowerment on organizational trust was not significant.

Farhangi, Mehregan and Damghanian (2011) studied factors affecting servant leadership from the perspective of managers. Their findings suggest that organizational values have a significant positive direct effect on servant leadership and organizational structure has a direct, negative and significant effect on servant leadership. Gholami et al. (2014) studied the servant leadership style among principals in Sanandaj. The findings revealed that most teachers hold servant managers in high esteem. In a study titled identifying characteristics, traits and attitudes of servant leadership, carried out using the Delphi method, Potter (2009) found that open communication in the workplace, service to people and trust are among the most important characteristics of a servant leader.

Sendjaya and Pekerti (2010) also believe that servant leadership is strongly associated with trust. According to Joseph and Whiston (2005), there is a strong relationship between servant leadership and trust in supervisor and organizational trust. They also believe that servant leadership has effects on organizations and help to build trust between individuals and organizations. From the perspective
of Story (2002), trust is a fundamental characteristic of servant leadership. Servant leaders empower and inspire others, create modeling honesty and integrity in the organization. Although trust is an essential element of leadership, it also has an element of uncertainty; e.g., trusting others often leads to frustration. Patterson (2003) revealed that a perception of servant leadership is positively correlated with organizational trust. Burke et al. (2007) found that if trust in leadership is higher, the organizational trust level also increases. Daley and Vasu (1998) in a study examined the central role of political managers and leaders in fostering trust. Results indicated that the staff’s higher positive assessment of leaders’ performance leads to higher levels of trust. The main objective of this study was to investigate the relationship between servant leadership and organizational trust of high school principals and based on this objective, the following questions were posed and tested:

Research question 1: Is there any relationship between servant leadership and its components and organizational trust and its dimensions?

Research question 2: Which components of servant leadership allow for anticipating high school principals’ organizational trust?

**Methodology**

A correlational research method was used in this study. The population included all high school principals in Zahedan city in the 1994/1995 school year. The sample size included 103 people, 52 male principals, 51 female principals. On the basis of the sample size according to Krejcie and Morgan (1970), executives were stratified based on size and simple random sample. Characteristics of the sample are shown in Table 1.

<table>
<thead>
<tr>
<th>Variables</th>
<th>G.</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>52</td>
<td></td>
<td>50.5</td>
</tr>
<tr>
<td>Female</td>
<td>51</td>
<td></td>
<td>49.5</td>
</tr>
<tr>
<td>Level of Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B.A.</td>
<td>84</td>
<td></td>
<td>81.6</td>
</tr>
<tr>
<td>M.A.</td>
<td>19</td>
<td></td>
<td>18.4</td>
</tr>
<tr>
<td>Teaching Experience</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-10</td>
<td>40</td>
<td></td>
<td>38.8</td>
</tr>
<tr>
<td>10–15</td>
<td>39</td>
<td></td>
<td>37.9</td>
</tr>
<tr>
<td>+15</td>
<td>24</td>
<td></td>
<td>23.3</td>
</tr>
</tbody>
</table>
For the purpose of this study, two questionnaires were used, which included Page and Wong’s (2003) servant leadership questionnaire and Ellonen, Blomqvist and Puimalainen’s (2008) organizational trust questionnaire.

The servant leadership style questionnaire is used to assess servant leadership style. The servant leadership questionnaire measures 7 dimensions of servant leadership in the form of 35 questions such that every 5 items assess an aspect of servant leadership and answers to each question are identified on a scale from strongly disagree to strongly agree. The reliability coefficient of the questionnaire was 0.84 by Aghababaian (2014) and 0.94 by Baghersalimi, Kelidbari and Hassanpour (2010). In this study, Cronbach’s alpha test result to determine the reliability of the questionnaire was equal to 0.90.

According to Ellonen, Blomqvist and Puimalainen (2008), the organizational trust questionnaire is used to measure organizational trust. The questionnaire measures three dimensions of vertical, horizontal and institutional trust. The questionnaire include 21 questions, where the first seven questions are about trust between employees (side trust), second seven questions are related to employees’ trust in the leader (vertical trust), while the third seven questions are related to organizational trust (institutional trust). The response scale was determined using a Likert scale within five options, i.e., from strongly agree to strongly disagree. The reliability of the questionnaire was 0.8 by Ellonen et al. Also, the reliability coefficient reported by Shirazi et al. (2012) and Fazelet et al. (2011) was 0.93. In this study, Cronbach’s alpha test result to determine the reliability of the questionnaire was equal to 0.93.

For statistical analysis of data, calculated mean, standard deviation, Pearson correlation coefficient and stepwise regression test were utilized.

**Findings**

*Research question 1*: Is there any relationship between servant leadership and its components and organizational trust and its dimensions?
Servant Leadership as a Predictor

Table 2. Determining the relationship between servant leadership and its components and organizational trust and its dimensions with the use of correlation coefficient (N=103)

<table>
<thead>
<tr>
<th>Lateral Trust</th>
<th>Vertical Trust</th>
<th>Institutional Trust</th>
<th>O.T (Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing and Empowering Others</td>
<td>-.051</td>
<td>.180</td>
<td>.144</td>
</tr>
<tr>
<td>Power and Pride (Vulnerability and Humility)</td>
<td>r .391**</td>
<td>.436**</td>
<td>.422**</td>
</tr>
<tr>
<td>Authentic Leadership</td>
<td>r .405**</td>
<td>.430**</td>
<td>.516**</td>
</tr>
<tr>
<td>Open, Participatory Leadership</td>
<td>r .448**</td>
<td>.357**</td>
<td>.435**</td>
</tr>
<tr>
<td>Inspiring Leadership</td>
<td>r .484**</td>
<td>.494**</td>
<td>.613**</td>
</tr>
<tr>
<td>Visionary Leadership</td>
<td>r .395**</td>
<td>.486**</td>
<td>.561**</td>
</tr>
<tr>
<td>Courageous Leadership</td>
<td>r .296**</td>
<td>.423**</td>
<td>.510**</td>
</tr>
<tr>
<td>S.L (Total)</td>
<td>r .479**</td>
<td>.577**</td>
<td>.656**</td>
</tr>
</tbody>
</table>

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

The results in the table above show that there is a significant positive relationship between all the components of servant leadership and organizational trust dimensions. The highest correlation coefficient belongs to servant leadership with institutional trust (r = 0.656), while the lowest correlation coefficient belongs to the component of courageous leadership with lateral trust (r = 296).

Research question 2: Which components of servant leadership allow for anticipating high school principals’ organizational trust?

Table 3. Predicting organizational trust through servant leadership components (N=103)

<table>
<thead>
<tr>
<th>R</th>
<th>R2</th>
<th>Adj.R2</th>
<th>Std. E</th>
<th>B</th>
<th>β</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.594a</td>
<td>.353</td>
<td>.346</td>
<td>8.27927</td>
<td>1.963</td>
<td>.594</td>
<td>54.997</td>
</tr>
<tr>
<td>2</td>
<td>.638b</td>
<td>.406</td>
<td>.395</td>
<td>7.96690</td>
<td>1.413</td>
<td>.427</td>
<td>9.075</td>
</tr>
</tbody>
</table>

1a. Inspiring Leadership
2b. Inspiring Leadership + Visionary Leadership
In order to investigate the contribution of the components of servant leadership to elaborate the changes in organizational trust, stepwise regression methods were employed. The results reveal that the components of building the leadership spirit have entered the equation and futurist leadership has entered in the second step. As can be inferred from the table above, in the first step, the component of building the spirit of leadership alone explains 35% of the variance in organizational trust. But in the second step, component of building the leadership spirit along futurist leadership explains 41% of the variance in organizational trust.

**Discussion**

Generally, it can be concluded that the managers who use the servant leadership method are people who induce a shared vision between members of the organization in school, have the capability of stimulating others and encourage others to make their activities. Given the key role of managers in the development and empowerment of others, they should involve the staff of the organization in decision-making and inducing the spirit of leadership, allow the staff to enter the professional aspects of their job. Servant leadership pattern is a relatively new model in leadership and it includes the value of people in organizations.

The results obtained in the above study reveal that there is a strong significant relationship between servant leadership and organizational trust. Moreover, there is a significant positive relationship between servant leadership and all the components of organizational trust and also between all the components of servant leadership except developing and empowering others with organizational trust. The result of the study is consistent with part of the results of Gholipour et al. (2009), Salimi et al. (2010), Khojasteh Boujar (2009), Ardalan et al. (2013), Sendjaya and Pekerti (2010), Joseph and Whiston (2005), Story (2002), Peterson (2003), Su Song and Yong Lee (2009), Brecko et al. (2007), which demonstrated a significant correlation between servant leadership and organizational trust. Therefore, it can be concluded that with increasing size and characteristics of a manager or servant educational leader, organizational trust also increases. Also, the evidence of stepwise regression shows that building the spirit of the leadership component and futurist leadership is the most anticipated of organizational trust.
**Conclusion**

The following suggestions can be made: Department of Education programs should be designed and implemented to promote and disseminate the culture of service among managers; Department of Education managers who revive the spirit of servant leadership in their working environment and give special attention to employees’ material and spiritual needs should be praised; by performing activities such as empowerment, participatory management and giving independence to their staff, managers should provide terms and conditions of organizational tasks in such a way that employees perform their tasks with intrinsic motivation; school administrators should develop collaboration tools and knowledge sharing in the way that meets the needs of teachers. To build trust between teachers in schools via open and transparent and honest communication, news release, participation of teachers in affairs, honesty and mutual trust between managers and teachers, and to create and develop a sense of security on the part of management at the school level is possible; giving attention to the impact of organizational trust on the servant leadership style is essential in formulating future strategies. Also, for cultural infrastructure and creating a culture of trust, it is recommended that programs should be designed and implemented to help create an atmosphere of trust in schools; and to establish educational workshops and seminars on the use of the servant leadership style and its impact on organizational trust.

**References**


Potter, D.O. (2009). *The traits /characteristics, attitudes, and effective work environments of servant leaders: A Delphi study*, Doctoral Dissertation, Capella University, 3369474
Abstract
The primary aim of this article is to present the validation process of the SEPRES questionnaire to measure the self-efficacy of students in a preschool education programme. After the generation of the questionnaire items for the item pool, the items were content validated, and then they underwent an exploratory factor analysis with data from 154 respondents to determine the construct validity of the questionnaire. Four factors were extracted after using Principal axis factoring with Oblimin rotation. The factors are Children involvement, Behaviour elimination, Professional collaboration and Credibility building, and they have Alphas ranging from 0.769 to 0.903. Inter-correlation among dimensions ranged from 0.419 to 0.681, indicating that SEPRES is a consistent research instrument.

The Construct of Self-Efficacy
Albert Bandura (1986) defines self-efficacy as one’s belief in personal qualities that affect the execution of actions to produce desired results. This belief determines how much effort one will invest in an activity, how long one will persevere when faced with an obstacle, how resilient one may be in the face of adversity, whether one’s thought patterns are self-aiding or self-hindering, and how the level
of accomplishments is realized (Pajares, 1996). According to Bandura’s theory, self-efficacy has two components: efficacy expectation and outcome expectancy. The former is the conviction that one has the ability, knowledge, and skills to successfully execute the behaviour or actions required to produce the desired outcome(s), while the latter represents a person’s estimate of the likely consequences (or impact) of performing a task at the self-expected level of performance.

The construct of teacher efficacy has been an object of extensive research for approximately four decades. Researchers have attempted to assess self-efficacy in the practice of teachers and its impact on pupils’ learning. A number of research projects have accumulated evidence about teacher self-efficacy effects in various school situations and environments, ranging from preschool to university. Research has shown that strong teacher efficacy has positive effects on:

- teacher effort and persistence when facing difficulties (Podell & Soodak, 1993; Gibson & Dembo, 1984),
- implementing new instructional methods and strategies (Cousins & Walker, 2000; Evers, Brouwers & Tomic, 2002),
- pupils’ academic achievement and success (Caprara et al., 2006).

Teachers with high levels of self-efficacy:

- are less inclined to job burnout (Aloe, Amo & Shanahan, 2014),
- usually have more commitment to the profession than other teachers (Tschannen-Moran, Woolfolk Hoy & Hoy, 1998),
- deal with the needs of low ability pupils (Ross & Gray, 2006),
- tend to be more open to new ideas (Cousins & Walker, 2000).

In summary, researchers have successfully demonstrated that the teacher’s efficacy beliefs yield higher teacher commitment, larger effort and a strong influence on pupils’ outcomes in many areas of education. Efficacious teachers display behaviours which are typical of quality instruction. A highly efficacious teacher does not only believe that the teacher can influence actions but also actually exposes the belief through behaviour.

**Measuring Teacher Self-Efficacy**

The prevailing method of investigating teacher self-efficacy is a self-rated questionnaire with Likert-type scales. Respondents indicate their level of confidence in relation to their abilities to teach, which are described in the questionnaire items. Many questionnaires have been developed to measure self-efficacy of pre-service and in-service teachers, but two of them have played an influential role in
Self-efficacy of Students in a Preschool Education

Based on Bandura’s theory and the locus of control concept, Gibson and Dembo (1984) developed the Teacher Efficacy Scale (TES) consisting of 30-items which, when factor-analysed, yielded two dimensions: Personal teaching efficacy and General teaching efficacy. Another influential instrument, designed by Tschannen-Moran and Woolfolk Hoy (2001), is the Teachers’ Sense of Efficacy Scale (OSTES). It consists of 24 items grouped in three dimensions: Instructional strategies, Classroom management and Pupil engagement. Both TES and OSTES were adopted to be used in countries as diverse as France, Taiwan, Turkey, Israel, Slovakia or the Czech Republic. In addition to self-efficacy for teaching in general curriculum areas, a great number of instruments were developed to measure self-efficacy in particular content domains, e.g., for teaching mathematics (Charalambous, Philippou & Kyriakides, 2007), science (Cakiroglu, Cakiroglu & Boone, 2005), chemistry (Enochs, Smith & Huinker, 2000), or character formation (Milson, 2003).

Studies in a number of countries yielded surprisingly-high scores on the self-efficacy of both pre-service and in-service teachers but brought inconclusive outcomes concerning the factor structures of the research instruments used. This indicates both theoretical and psychometric problems, which can be attributed to several factors. First, self-efficacy is an “elusive construct” (Tschannen-Moran & Woolfolk Hoy, 2001). Although it is easy to define, it is difficult to capture empirically, thus causing problems with construct validity and sometimes also with the reliability of instruments. Second, these instruments are self-rated scales based on respondents’ judgements about their inner qualities. These judgements are subjective projections of one’s abilities and may not be a realistic picture of the employment of abilities and skills in real teacher practice. The results are also influenced by context specific factors, such as the demography of samples, the scope and content of respondents’ in-service training, their subject areas, etc.

Many researchers saw the solution of the problems with the validity of self-efficacy measurement in developing their own self-efficacy instruments that serve specific needs, are faithful to their theoretical orientation and reflect the specific educational conditions of the country. Such instruments were constructed, e.g., by Seo and Moon (2012), Gau and Hung (2014), and Nikolopoulou and Gialamas (2015).

This study contributes to the methodological dispute of self-efficacy research by constructing a new instrument, which is tailored to the purposes of pre-service teachers of preschool education. Examining the self-efficacy of pre-service teachers who specialize in preschool education is of particular importance for university educators. They need to pay considerable attention to their students’ self-efficacy and follow its development throughout university study. University educators
should be aware of changes in self-efficacy during a university programme and should shape its development. For this purpose, they need to have a valid and reliable instrument to measure self-efficacy.

**Research Methodology**

The aim of this article is to present the process of development and validation of an instrument to measure student self-efficacy in a preschool education university programme. We found it important to concentrate on investigating the self-efficacy of students rather than of in-service teachers because we – as university teachers – need knowledge of this important student characteristic so that we can include it in a component of teacher preparation.

This instrument concentrates on the self-efficacy of essential aspects of the class instruction of preschool teachers. However, rather than focussing on specific domains of preschool teaching, like pre-mathematics knowledge and skills, pre-literacy or fine motor skills, it concentrates on self-efficacy across domains, thus providing a general portrayal of student teachers’ self-efficacy. The aim was to construct an instrument that has satisfactory psychometric properties and is easy to administer.

**The Sample**

The sample consisted of 154 student teachers from two Czech universities (Brno and Zlín), who were enrolled in a three-year bachelor’s programme in preschool education. The composition of the sample as regards semesters was as follows: 41.6 % in the first semester, 24 % in the third semester and 34.4 % in the fifth semester. All but 2 student respondents were female. In terms of the demographic characteristics, the sample comprises typical students of preschool education in the Czech Republic.

In the course of the bachelor’s programme, the students attended lectures and seminars in educational theory as well as in psychological disciplines. They also had structured field training in a preschool. In the first semester, they had an introduction to preschool life by a director of a preschool; throughout the second semester, they had two-hours daily observations of preschool classes; in the third semester, they had observations concentrated on teaching in specific curriculum areas; in the fourth semester, they were teaching children under the supervision of curriculum area specialists; and in the fifth semester, the students conducted four-week, independent, day-long teaching.
The questionnaire was administered in November and December 2015 in normal class hours in classrooms. Anonymity was secured by asking students not to write their names on the questionnaire forms.

**The Instrument**

For the purpose of this investigation, an instrument was developed to measure the self-efficacy of preschool education student teachers. The instrument, hereafter referred to as SEPreS (initials for Self-Efficacy – Preschool), closely adheres to the principles of self-efficacy measurement suggested by Bandura (2006). The construction of SEPreS underwent several rounds. In the first round, we generated a pool of 100 items, which were derived from three sources: a) literature about preschool teacher successful practices, b) the preschool Framework Programme in the Czech Republic, and c) the authors’ experiences in the field.

In the second round, the items were reviewed by three experts in preschool education, who assessed their content validity. More specifically, they rated the relevance and clarity of each item. In this process, 44 items were discarded as either unimportant or confusing. The remaining 55 items were considered relevant for the instrument.

Each item had positing wording written positively and included a six-point scale, with end points of “I have no ability” and “I have a high ability”. Examples of items are as follows (translation from Czech):

<table>
<thead>
<tr>
<th>Item wording</th>
<th>I have no ability</th>
<th>a high ability</th>
</tr>
</thead>
<tbody>
<tr>
<td>to prevent problem behaviour of children</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>to create an emotionally appropriate environment</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>to use creative games with children</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
</tbody>
</table>

In the next round of the questionnaire construction, the set of 55 items of SEPreS was factor-analysed using the data of the sample. A factor analysis is a method of data condensation into a relatively small number of factors, which yet explain a large proportion of the total variance of the data (Kline, 2000). Exploratory factor analysis was used to discover the factors within the item set, thus assessing the construct validity of the instrument. At the beginning, the KMO measure and Bartlett’s test were computed to assess whether the data were appropriate for the factor analysis. The KMO measure was 0.870 and Bartlett’s Chi square was 5028.140; df = 1225, which was significant at a 1 % level. Both indexes yielded favourable results, thus enabling the start of factor analytic computation.
The next step was to ascertain the method of factor extraction. IBM SPSS offers seven extraction methods. We chose principal axis factoring, which does not require large samples and is tolerant to the normality of data distribution. In setting the number of extracted factors, we used the criteria of the eigenvalue 1 rule and the scree plot. There were twelve factors that exceeded eigenvalue 1, thus producing too many factors for a meaningful interpretation. The screen plot suggested 3, 4 or 6 factors. Factor extractions were computed with the item loading set at 0.40, including all three options. The best result was with four factors. In order to achieve the best interpretable factor model, the items were rotated, using Oblimin. The result of the rotation is presented in Table 1. Items with factor loadings below 0.40 and items that cross-loaded are not shown in the table.  

Table 1. Factors of SEPRES. Principal axis factoring, Oblimin rotation

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 3</td>
<td>0.664</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 4</td>
<td>0.534</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 5</td>
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<tr>
<td>Item 6</td>
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<td></td>
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<tr>
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<td>0.772</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Item 12</td>
<td></td>
<td>-0.560</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 14</td>
<td>0.553</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 16</td>
<td>0.558</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Item 17</td>
<td>0.681</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 18</td>
<td>0.541</td>
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<td>Item 20</td>
<td></td>
<td>-0.405</td>
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<td></td>
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<tr>
<td>Item 21</td>
<td></td>
<td></td>
<td>0.511</td>
<td></td>
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<tr>
<td>Item 22</td>
<td>0.414</td>
<td></td>
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<td></td>
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<tr>
<td>Item 23</td>
<td>0.510</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Item 24</td>
<td></td>
<td>-0.511</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 27</td>
<td>0.608</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 28</td>
<td>0.473</td>
<td></td>
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</tr>
</tbody>
</table>

1 A usual component of the factor analytic procedure is the computation of the total variance explained by the extracted factors. This computation, however, cannot be performed in principal axis factoring. When factors are correlated, as in our case, sums of squared loadings cannot be added to obtain a total variance.
To sum up the item reduction process, we started with a 100 item pool of which 77 items were discarded in two rounds: 45 in the first and 22 in the second. This proved the contention of DeVellis (2003) that the construction of a scaled questionnaire requires an item pool three or four times larger than is the final questionnaire length. With such a robust item pool, the researcher has enough items to be selected in the subsequent rounds of the analysis to constitute a valid and reliable instrument. The result of our factor analysis was 33 items distributed among four factors.

The first factor was called **Children’s involvement**, and it concentrates on teachers’ actions that promote children’s engagement in activities. Rather than asking the respondents to rate teaching in domain specific instructions like literacy, mathematics or motor skills, this factor concentrates on more general areas across the teaching domains, such as “Organizing age-appropriate activities” or “Giving children opportunities to express their opinions”. The factor has 13 items, with an Alpha of 0.903.

The second factor was called **Behaviour elimination**. It concerns the elimination of children’s inappropriate behaviour and contains items like “Managing the behaviour of problematic children” or “Managing disturbing children” (6 items, Alpha of 0.859).
The third factor was called **Professional collaboration**. It involves teachers’ cooperation with professionals such as a psychologist, a speech therapist, and a paediatrician in dealing with children’s psychological, social and health problems. It also includes cooperation with colleagues in a preschool concerning professional matters as well as communication with the parents of children who attend the preschool. Moreover, the factor contains items concerning the teacher’s collaboration with parents. The factor has items such as “Communicating with a psychologist if problems occur with a child”, “Cooperating with colleagues in the construction of the preschool curriculum” and “Communicating with parents patiently” (9 items, Alpha of 0.886).

The fourth factor was called **Credibility building**. It concerns the establishment of confidence and trust of children in the teacher by creating a pleasant and harmless climate in the preschool. It consists of items like “Creating a safe environment” or “Being fair to children” (5 items, Alpha of 0.769).

The four factors provide a strong theoretical justification for the construct validity of the questionnaire. They represent a good profile of the teacher’s activities, both focused on children (factors 1, 2 and 4) and on colleagues and parents with whom they collaborate (factor 3). The respondents’ judgements of their self-efficacy in class teaching (factors 1, 2 and 4) and beyond the class (factor 3) are therefore a good approximation of their beliefs across these areas.

Further evidence of the construct validity of the questionnaire was provided by examining the inter-correlations among dimensions\(^2\) (Table 2). All dimensions are positively correlated, with medium to high coefficients.\(^3\) This indicates that the respondents’ self-efficacy in the four dimensions is associated, creating a consistent system. Self-efficacy in Children’s involvement and in Credibility building yielded the highest correlation (0.681), indicating that they are most closely linked. Indeed, the teacher’s approach to children must be persuasive and must attract them so that they are engaged in cooperation with both the teacher and their classmates.

An almost equally high correlation was between self-efficacy in Children’s involvement and Professional collaboration (0.631), indicating a close relationship in the respondents’ belief to act successfully in these two domains.

\(^2\) From this point on, we refer to the factors extracted from the factor analysis as “dimensions of the questionnaire” rather than “factors”, as we are moving now beyond the factor analysis.

\(^3\) According to the guidelines by Cohen (1988) and Hemphill (2003), a correlation coefficient size between 0.30 and 0.50 is considered medium, while above 0.50 is considered large.
Self-efficacy in Children’s involvement was moderately positively correlated with self-efficacy in bad Behaviour elimination (0.491). This relation is defendable on the grounds that if the teacher is strong in managing the children’s learning activities, then the teacher also has the potential to reduce or eliminate disruptive behaviour.

A high correlation was identified between self-efficacy in negative Behaviour elimination and Credibility building in children (0.562). Again, this is conceptually-suitable evidence. If the teacher believes in their abilities in managing inappropriate behaviour, there is a chance that the same teacher also believes in their capability of building trust in children.

The weakest correlation was identified between self-efficacy in Behaviour elimination and Professional collaboration (0.419), showing a certain link between the teacher’s work with a problematic situation in the classroom and professional advice from colleagues and communication with parents.

Overall, the inter-correlations among the factors indicate good convergent validity of the questionnaire. The relationships among factors are theoretically sound, thus supporting the conceptual unity of the questionnaire.

Table 2. Inter-correlations among the dimensions of the SEPRES questionnaire

<table>
<thead>
<tr>
<th></th>
<th>Behaviour elimination</th>
<th>Professional collaboration</th>
<th>Credibility building</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children’s involvement</td>
<td>0.491</td>
<td>0.631</td>
<td>0.681</td>
</tr>
<tr>
<td>Behaviour elimination</td>
<td></td>
<td>0.419</td>
<td>0.562</td>
</tr>
<tr>
<td>Professional collaboration</td>
<td></td>
<td></td>
<td>0.546</td>
</tr>
</tbody>
</table>

All correlations are significant at the 0.01 level (2-tailed).

Descriptive Data

Table 3 presents descriptive results of the dimensions of SEPRES. The averages in all the dimensions are relatively high, exceeding the midpoint of a six-point scale, indicating that the students are quite confident in their potentials to teach in a preschool. Most possibly, they possess an optimistic view of their abilities to organize instruction, manage a class of children and collaborate with colleagues and parents. This optimism may be attributed to a lack of experience with the complexities of educating preschool children. The highest score was obtained in Credibility building. The respondents strongly believe in their abilities to create
a safe learning environment, support respect among children, and be fair to children. This belief is stronger than that of creating a learning environment that involves children in activities (Involving children), but the difference between the scores of these two dimensions is rather small. The elimination of children’s problem behaviour produced the lowest score of the four dimensions, demonstrating that the respondents are aware that this element of teacher behaviour is the most difficult. The respondents scored somewhat lower on the Professional collaboration dimension than on the two other two dimensions of teacher behaviour, i.e., Children’s involvement and Credibility building.

<table>
<thead>
<tr>
<th>Table 3. Descriptive data of the dimensions of SEPRES</th>
</tr>
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<tbody>
<tr>
<td>N</td>
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<tr>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Children’s involvement</td>
</tr>
<tr>
<td>Behaviour elimination</td>
</tr>
<tr>
<td>Professional collaboration</td>
</tr>
<tr>
<td>Credibility building</td>
</tr>
</tbody>
</table>

Interesting findings were obtained concerning the distribution of scores on SEPRES across semesters of the bachelor’s programme. Figure 1 shows two distinct trends. First, self-efficacy scores in each semester reflect the same trend as the scores of the entire sample of respondents. In each semester, the highest score was in Credibility building, followed by Children’s involvement and Professional collaboration. The lowest scores were in Behaviour elimination. This consistent

**Figure 1.** Scores in SEPRES across semesters of the bachelor’s pre-school programme
pattern of the scores of the dimensions of SEPRES is another proof of the validity of the questionnaire.

Furthermore, the differences of the scores between the semesters are small, indicating that there is no decisive change in the students’ characteristics over the course of the bachelor’s programme. We expected a rise in scores each semester due to the increasing competence of the students acquired through lectures, seminars and field practice. This was not confirmed. The most probable explanation is that the students had high self-efficacy already in the first semester, so further increases were improbable in the following semesters.

**Discussion**

The primary aim of the article was to present the construction and validation process of the SEPRES questionnaire aimed at measuring the self-efficacy of preschool education students enrolled in a bachelor’s programme. After the generation of the questionnaire items for the item pool, the items were content validated and then factor analysed to determine the construct validity of the questionnaire. A four factorial structure, comprising 33 items, was determined to be the best interpretable solution. The factors called Children’s involvement, Behaviour elimination, Professional collaboration and Credibility building have satisfactory reliabilities with Cronbach’s Alphas ranging from 0.769 to 0.903. Overall, SEPRES has promising psychometric qualities and can be recommended for the use in other samples of students of preschool education.

Inter-correlations among factors ranged from 0.419 to 0.681, suggesting that the dimensions are rather closely associated. The finding of close inter-correlations among factors in self-efficacy questionnaires is frequent in other studies, irrespective of the sample (Tschannen-Moran, & Woolfolk Hoy, 2001; Jamil et al., 2012), on the condition that the dimensions of the questionnaires are based on a single theoretical concept. If a questionnaire is conceptually diverse, inter-factor correlations are small. This is true, for instance, of the TES (Gibson & Dembo, 1984), which has one factor based on Bandura’s concept of self-efficacy and another based on the locus of control theory of J. B. Rotter.

The respondents scored rather high on each of the questionnaire dimensions. Many other studies resulted in a similarly high level of self-efficacy of pre-service teachers, regardless of the construction of the research instrument used, demographic composition of the sample and the country. Consistent results of a high level of self-efficacy of pre-service teachers were obtained, e.g., in the United States
(Woolfolk Hoy & Spero, 2005), Turkey (Cakiroglu, Cakiroglu, & Boone, 2005),
Cyprus (Charalambous & Philippou, 2007), Korea (Seo & Moon, 2013), and Slov-
akia (Gavora, 2010). The high scores indicate that students have a rather optimistic
view of their abilities to tackle the complexities of the preschool instructional
process. This may, however, change after the students enter the preschool profes-
sion and are confronted with the everyday duties of full-time teachers.

Conclusions

According to A. Bandura (1993), self-efficacy determines how people feel,
think, behave and motivate themselves, so it is one of the strongest characteristics
of teachers. In spite of its importance in teachers’ professional development,
self-efficacy has been infrequently investigated among preschool teachers (Guo
et al., 2011). It has been even less investigated in pre-service preschool teachers.
This study contributes to the understanding of how this concept is being devel-
oped in a group of pre-service preschool teachers in two Czech universities. For
this purpose, a new instrument was developed, SEPRES, the description of the
construction of which is the core of this article. The questionnaire showed good
validity and reliability and thus may serve as an instrument in other investigations.
The authors will provide the instrument to interested colleagues upon request.

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A Model of Living Values Education-based Civic Education Textbooks in Indonesia

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Abstract
This research aims to develop a model of a civic education textbook on the basis of living values education. This study uses the approach of Research and Development at the stage of product development. Results reveal the following: 1) living values education-based civic education textbooks conceptually incorporate living values and the principles of living values education into the textbook; 2) the textbook chapters include title, introduction, concept roadmap, keywords, presentation of materials, clarification of the values of life, exercises, summary, reflection, authentic assessment, feedback, and follow-up activities; 3) the values of life can be integrated into the textbook through features of civic values, words of wisdom, analysis of life values, reflection, and attitude assessment.

Keywords: living values education, textbooks, civic education, character, student, Indonesia

Introduction
In general, civic education textbooks circulating in the field only primarily teach students about the concepts and principles of science, but put little emphasis on teaching students to act and behave according to the concepts and principles of science in everyday life (Somantri, 2001). How do we reconstruct civic education textbooks so as to help form students’ character? First, a civic education text-
book is to be based on living values, making them more easily internalized and implemented. Second, the textbook needs to involve aspects of knowing the good, desiring the good, loving the good and acting the good. Third, the textbook should be contextual, bridging the material with its real-life application.

All the above characteristics must be integrated into civic education textbooks through a model of living values-based textbooks. A living values-based civic education textbook is a conceptual material associated with students’ basic values of life that link their moral knowledge and its application in the lives of students as members of families, communities, and country. Therefore, Research and Development research is necessary to produce a model of a civic education textbook on the basis of living values education assumed to effectively nurture students’ character.

**Research Problem**

Based on the above background, the problem to be addressed is “what is the concept of a living values education-based civic education textbook?” The detailed formulation of the problem is as follows: 1) What is the conceptual model of a living values education-based civic education textbook model? 2) What is the outline of a living values education-based civic education textbook? and 3) How to integrate living values into a civic education textbook?

**Research Focus**

The focus of this research is the development of a living values education-based civic education textbook at junior high school level in Bandung, Indonesia. The research resulted in the conceptual model and outline of a living values education-based civic education textbook, integration of living values education into a civic education textbook, and test results of a limited number of students.

**Research Methodology**

**Research General Background**

The presented study used the Research and Development design. Development basically consists of two main objectives, namely: (1) to develop a product and (2) to measure the effectiveness of the product in achieving the goal (Borg & Gall, 1989).
Research Sample
Research was undertaken in Bandung and West Bandung Regency, West Java, Indonesia. Subjects were students and teachers at junior high schools that serve as pilot sites for the implementation of the Curriculum of 2013, i.e., SMPN 2 Bandung, SMPN 5 Bandung, and SMPN 1 Lembang.

Instrument and Procedures
Data collection instruments used in this study include (1) an observation/participation sheet, (2) documentation study, (3) interviews, and (4) questionnaire. The results of the research on the development stage of the product/model include the following steps: research and information collection, planning, development of a preliminary form of the product, preliminary field testing, and main product revision.

Data Analysis
Qualitative data analysis was carried out through the following steps: (1) data reduction by summarizing reports, noting the key points that are relevant to the research focus; (2) systematic data organization based on specific categories and classifications; (3) data display in the form of tables or graphics so that the relationship among the data is clear and coherent; (4) cross-site analysis by in-depth comparing and analyzing the data; and (5) presentation of the findings, drawing conclusions in the form of general trends and the implications of implementation, and recommendations for development (Fraenkel and Wallen, 2006). Quantitative data analysis was performed through quantitative data analysis using a quantitative description (Creswell, 2012).

Research Results

The Conceptual Model of Living Values Education-based Civic Education Textbooks
Conceptually, LVE-based civic education textbooks incorporate living values and the principles of living values education into the textbook by taking into account the principles of scientific learning and contextual learning, developing core competences and basic competences in line with the Curriculum of 2013, the principles of the preparation of textbook material, language and legibility, and appearance (graphics). Based on the above, the principles of writing LVE-based civic education textbooks are as follows:
1. Develop living values
   Living values that will be integrated into the civic textbooks are clearly
described. The values of life are developed with reference to Saripudin and
Komalasari (2015) and Tillman (2004) as follows: peace, respect, love, tolerance,
honesty, humility, cooperation, happiness, responsibilities, simplicity, freedom,
and unity.

2. Develop principles of living values education (Tillman, 2004), which include:
gathering points of reflection, imagining, training relaxation and focus,
expressing artistic creations, developing social skills, developing a cognitive
awareness of justice, developing social cohesion, and assembling cultural
values.

3. Apply the learning principles of writing textbooks, which include readiness,
motivation, use of attention getters, students’ active participation through
a scientific and contextual approach, repetition, feedback, a cognitive vision
of social interaction, authentic assessment, reflection, and life skills (Komalasari,
2012).

4. Develop core competences and basic competences in the curriculum, namely:
a) substantial knowledge students should acquire and understand; b) skills,
i.e., practical ability developed from knowledge, which can be used to cope
with the problems of life; and c) the attitude, i.e., the character every student
should have to support effective participation in life.

5. Observe the principles of the preparation of textbook material, which should
be: a) accurate; b) relevant; c) self-sufficient; d) consistent; e) actual; and f) the
structure of science.

6. Language and legibility should meet the following criteria: 1) sentences used
should be in accordance with the grammar of formal Indonesian; 2) the
structure of sentences should indicate logical and systematic thinking; 3) the
structure of sentences should be in accordance with students’ level of proficiency;
and 4) sentences should be communicative.

7. Layout principles: 1) formatting and 2) illustration of figures and tables
should support or clarify the concepts presented.

Outline of Chapters of Living Values Education-based Civic Education Textbooks
Based on the conceptual model of the LVE-based civic textbook delineated
above, the contents of the book are presented as follows:

1. Title is meaningful
2. Introduction begins with images, stories, poems, cases, etc., followed by apperception and reflection of living values to be discussed.

3. Road map of concepts and keywords serves as an overview of the material that will be presented and the values of life that will be developed in the chapter.

4. The materials presented in the book include facts, concepts, principles, procedures, and values of life.

5. Assignments/exercises; students are asked to perform a series of practical tasks of citizenship in improving citizenship competences.

6. Summary contains conclusions of the material to learn and the values of life to develop.

7. Reflection contains reflections on life values practiced in everyday life through a Value Clarification Technique list. This reflection can be utilized as an instrument to assess students’ attitudes and behavior.


9. Providing feedback section presents the answer key and assessment form accompanied by assessment rubric.

10. Follow-up activities (transfer, enrichment, remedial) provide enrichment activities for those who have reached the expected competences and remedial activities for those who have not.

**Integration of Living Values Education into Civic Education Textbooks**

Integration of the values of life into a civic textbook is realized, among other things, through features of civic values, words of wisdom, exercises on the content of the story that is packed with values, reflection and self-assessment. The following exemplifies the integration of the values of life into a civic textbook for Grade 7, Chapter 3 on “The Commitment to Maintaining the Constitution of the Republic of Indonesia”.

1. Features of civic values

   On the sideline of material descriptions, the values of life are displayed in a special feature entitled “civic values”. In this section, there is a special box that presents the values of life in accordance with the context of the material, such as patriotism, solidarity, tolerance, compassion, unconditional attitude, responsibility, and strong spirit. The values presented are to be applied by the students in their everyday life. Examples are presented below.
2. Words of wisdom associated with the values of life
Material presentation is also equipped with wise words of local, national, regional, and international figures that can inspire students. Wise words are adapted to the context of the material covered in the book. For instance, in discussing the “Formulation Process of the Constitution of the Republic of Indonesia”, the given wise words are related to the value of patriotism from an Indonesian cultural figure as follows:

Value of Life:
“…because loving your country is to feel part of the country, feel connected to a community, feel that the self, identity and destiny are interwoven with something called Indonesia, or Japan, or the United States. Loving a country is to feel, perhaps to realize that there is no other country, no other nation, but your own, which could move your heart in such a way to live, work and even to die (Goenawan, 1995)

3. Exercises on the contents of a story rich with the values of life
The values of life are incorporated into assignment/exercises. In this section, the values of life are packaged in the form of stories, poems, songs, and pictures. Students analyze the content, explore and clarify the values of life in it, as well as elaborate efforts to make it happen in everyday life (Saripudin and Komalasari, 2016b). Examples are presented below.
Read the story below!

**Farmer and His Children**

A very wealthy farmer, who feels that he is not going to live much longer, calls his children to his bedside.

“My children,” he says, “Listen to what I’ll tell you. For whatever reason, do not ever sell the land that has belonged to our family for generations because there is a hidden treasure. I don't know where, but the treasure is there. Look for the treasure as best as you can by digging and do not miss an inch of land.”

The farmer then dies, and not long after the funeral, the children begin to work as hard as possible to dig every inch of their land with a shovel. They do so over and over.

No hidden gold is found, but at harvest time, they have a lot more money than their neighbors due to lots of crops. In the end they realize that the treasure is actually abundant harvest and their hard work.

After you have read the story, answer the questions below.

1) What conclusions can you draw from the story?
2) What are the good things you can extract from the story?
3) How can it be linked to the contents of the preamble of the Constitution of 1945?
4) What does it take to materialize the four points of the Constitution?

4. Learners are asked to reflect on their understanding of the material and the application of behavioral attitudes in everyday life

   At the end of the chapter, students carry out reflection to evaluate their understanding of the material and its application in everyday life, which indirectly teaches students about the value of honesty, responsibility, and respect.

5. Self-assessment

   Evaluation not only measures students’ understanding of the material, but importantly also assesses the students in the application of the values of life by filling in the Self-Assessment Checklist.

**Test Results of a Limited Number of Students**

To find out the aspects of the understanding of the content and development of character, after using the textbook, a test was administered to examine the learners’ understanding and attitudes. Aspects of understanding and development of character are presented in Table 1.
Table 1. Understanding of material and development of character

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Components assessed</th>
<th>Aspects assessed</th>
<th>Assessment Results (N=207)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Very Good (%)</td>
</tr>
<tr>
<td>A.</td>
<td>Understanding of the Material in the 2013 Curriculum</td>
<td>Fact</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Concept</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Principle</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Procedure</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Living values</td>
<td>70</td>
</tr>
<tr>
<td>B.</td>
<td>The development of living values</td>
<td>Peace</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Respect</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Love</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tolerance</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Honesty</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Humility</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cooperation</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Happiness</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Responsibilities</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Simplicity</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freedom</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unity</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Average Score of Component A</td>
<td>56.80</td>
<td>22.60</td>
</tr>
<tr>
<td></td>
<td>Average Score of Component B</td>
<td>59.33</td>
<td>19.25</td>
</tr>
</tbody>
</table>

The above table shows that the learners have good skills in understanding the material and the living values. In the aspect of understanding of the material according to the 2013 curriculum, the learners have the best ability in understanding the facts and living values. In the aspect of the development of living values, the most dominant is tolerance, unity, cooperation, love, and respect.

Discussion

The results of this study are explainable in the following pointers: First, LVE-based textbooks serve as a primary source of knowledge for students, through which the students can understand the material, develop the values of life and
apply them. This is in agreement with expert opinions that a textbook is an instructional medium that plays a prominent role in the classroom; a means of delivering curriculum material; and a central part in an education system (Patrick, 1988; Locked and Verspoor, 1990; Altbach, et al., 1991; Buckingham, 1960; Saripudin and Komalasari, 2015). More specifically, Chambliss and Calfee (1998) explain that textbooks are tools by which students understand and learn from what they read. Textbooks are also the tools to understand the world. Textbooks have crucial roles to play (Greene and Petty, 1971). Textbooks have big power to change the brain, especially that of the student. They also affect students’ knowledge and values. Textbook writing should, therefore, be thoroughly organized.

Second, LVE-based textbooks not only present the subject matter in the curriculum, but more importantly assist students in learning the material and develop the character and values of life, as well as a strong desire to apply them in everyday life. Therefore, textbooks should contain the subject matter suited to the prevailing curriculum, practical values of life according to students’ needs, and learning experiences for students to discover materials and living values on their own (Komalasari et al., 2014; Komalasari and Sapriya, 2016). This is in accordance with the view of Hanna and Lee (1962) that a book should contain materials from disciplines, the environment, and students’ responses to both. The contents and values developed in a textbook should meet students’ needs in a balanced way and be organized in a functional, structural, humanistic, and civic approach. The contents must be scientific, logical, systematic, developmentally appropriate, using a spiral approach, and include informative and attractive illustrations (Sjamsuddin, 2004). A good book not only contains the correct concept in science and has an attractive layout but most importantly it teaches students. Therefore, textbook writers should pay attention to the learning strategy components and design of subject matter (Gafur, 1986; Komalasari, 2010).

Third, LVE-based textbooks empower students to live independently and to understand textual and contextual materials. The roles of such textbooks in empowering students include: (1) the book should be a source of information while teachers as agents and sellers of such information; (2) the book should stimulate students’ interests to acquire information; (3) the book should serve as the manager of students’ learning activities, presenting information at the gradual levels of difficulty, including practice questions and solutions; (4) the book should satisfy the requirements of the curriculum and cover the implementation of curricular contents; (5) the book should be utilized as a discourse to train reasoning skills and the formation of students’ attitudes in the face of the relatively fast changing world in the 21st century; (6) the book should contain essential and
strategic information and serve as a useful tool in problem solving; and (7) the book should present communicative and interesting information (Martono, 2005; Saripudin and Komalasari, 2016a).

Fourth, the presence of LVE-based text books does not exclude the role of the teacher. It is undeniable that the teacher plays a central role in facilitating students to use textbooks as a learning resource so that the students can optimally utilize the textbooks to develop a comprehensive understanding, attitudes, and behavior. The teacher is a facilitator, who has authority and responsibility at individual and classical level in the process of students’ acquiring knowledge through a variety of activities and experiences in the learning process considering varying levels of students’ proficiency and characters. In addition, the formation of students’ attitudes and beliefs can be influenced by the teacher’s role and professionalism (Komalasari and Saripudin, 2015).

**Conclusions**

A LVE-based civic education textbook model conceptually incorporates living values and principles of living values education into the textbook by observing the principles of contextual learning, developing core competences and basic competences in the existing curriculum, learning principles of writing textbooks, language and legibility, and layout. The contents of the book encompass: title, chapters/discussions, introduction, road map of concepts and keywords, presentation of materials and clarification of living values, assignments/exercises, summary, reflection, authentic assessment, giving feedback and follow-up activities. The values of life can be integrated into the textbook through civic value features, words of wisdom related to the values of life, review of the story that contains the values of life, reflection, and attitude assessment. The book is expected to be used as a learning resource in civic education in fostering students’ character. This LVE-based civic textbook is an innovation in the provision of quality learning resources, particularly in developing students’ character. The book is expected to be used by students and teachers as a learning resource in civic education at junior high school in Indonesia.

**Acknowledgements**

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References


Abstract
The article presents the findings of the research conducted in order to learn physical education teachers’ opinions on the implementation of the health education content. The study was carried out in lower and upper secondary schools located in the region of Upper Silesia (Poland). A quantitative method was used to gather and analyse data. The survey was conducted with a specially designed questionnaire including 17 items. The research was based on the analysis of core curriculum concerning the objectives and content of health education planned to be implemented during physical education classes in lower and upper secondary schools. The research allowed for identifying potential gaps and good practices in school-based health education and health promotion in the Polish socio-cultural conditions.

Keywords: health education, physical education teachers, health literacy, school practice, core curriculum, teacher training

Introduction
Schools may play a special role in creating health behaviours. There are no doubts that the central role of the school is teaching and learning, but it is also a unique community resource to promote health among children, families and teachers, because health and education are inseparably linked (Tang, Nutbeam,
The significant role of the school in the improvement of health was indicated in a lot of international research (Mukoma, Fisher, 2004; Jourdan, Mannix McNamara, Simar et al., 2010). It was proven that healthy pupils who attend school tend to learn better and, furthermore, proper education influences the development of healthier population. Therefore, the development of national and regional school health policies is supported by the recommendations from the World Health Organization (1997).

For this reason, over the years there have been attempts to introduce health education into the core curriculum in Polish schools. Despite many years’ attempts, health education was introduced as late as in 1997, but it was not included in the school timetable. Two years later, i.e., in 1999, ‘health education’ educational path was introduced in primary school and lower secondary school, and in 2002, ‘health education’ educational path was introduced in all types of schools. In 2008, a decision was taken to incorporate the ‘health education’ module in the core curriculum of physical education in lower and upper secondary schools. Policymakers assume that it should be followed by the school at specific education stages within the scope of many subjects (the Polish language, foreign languages, social studies, biology, preparation for family life), but mainly during physical education lessons.

Similar organizational solutions were implemented in, e.g., New Zealand and Australia – the school subject concerning health education was called there “Health and Physical Education” (HP&E). In New Zealand this subject was introduced into schools in 1999 and it is a part of school core curricula from the 1st to 10th year of education (5-14/15 year-olds) (Sinkinson and Hughes, 2008: 1074). The same regulations are applied in Australia (The Shape of the Australian Curriculum: Health and Physical Education, 2012: p.10; Lynch 2015). A congruent form has the school-based health education in Japan, Canada and Croatia.

Aims of health education in the framework of physical education are focused on the holistic concept of health (Antonovsky, 1987) and take into consideration mental, social and biological aspects of health, (i.e., explaining why health is a value for a human being and a resource for society and how health should be taken care of during youth and early adulthood, explaining the meaning of responsibility for one’s own health and the health of other people, discussing constructive, optimistic ways of explaining difficult events and transformation of negative thoughts into positive ones, etc.) (Regulation of the Ministry of Education, 2009).

The teacher implementing health education should have the following competences (Erbas, 2013):
• The knowledge of: health and its determinants; prevention of common hazards, disorders and diseases; health education – its objectives, process, methods of implementation and evaluation; health promotion, with the emphasis on health-promoting school;
• The skills concerning: diagnosing students’ knowledge, health behaviours and needs in the field of health education; planning of the health education programme; implementation of the health education basic issues; cooperation and seeking allies to carry out health education at schools; the use of activating learning methods and creating an atmosphere conducive to well-being, participation and activity of students; health education process and result evaluation;
• The attitude which is characterized by: the belief that health is a value and a resource for humans and society; willingness to improve one's own health, as well as personal and social skills; openness to the needs of others, empathy; the ability to create patterns of health behaviours for students, motivate them and support their efforts; the ability to create a healthy environment.

The above-mentioned issues prompt the reflection on how health education is implemented at schools by physical education teachers.

**Methodology**

**Research questions**
The presented study was focused on the opinions of physical education teachers concerning the implementation of the health education content at schools and their competences in the field of health education. The survey aimed to answer the following research questions:

1. What health education objectives and content, in line with the core curriculum of physical education, should be implemented in lower and upper secondary schools?
2. What health education content is currently implemented by physical education teachers at the stage of lower and upper secondary schools?
3. How much time during a school year do physical education teachers actually spend implementing the health education content?
4. What methods are used by physical education teachers while implementing the health education content?
5. What are the inhibitors of health education implementation in physical education teachers’ opinions?
6. Do physical education teachers believe that they have the necessary expertise to carry out health education?
Due to the diagnostic type of the research, hypotheses were not formulated.

**Instruments**

Document analysis and a questionnaire were two techniques employed in the research. Detailed analysis concerned the objectives and content of health education implemented during physical education lessons, specified in the *Regulation of the Ministry of National Education on core curricula for pre-school and general education in particular types of schools (27 August 2012)*, Attachment 4: *Core curriculum of general education for lower and upper secondary schools, graduation from which results in obtaining a school leaving certificate upon passing a final exam*. Currently valid documents were the basis for drawing up a survey questionnaire.

A specially designed questionnaire including 17 items was used in the research. The questionnaire was reviewed after pilot research. The used tool posed a range of questions about respondents’ teaching experience (i.e.: What objectives do you achieve during physical education lessons? How do you assess the core curriculum in the area of health education? What methods do you use during health education lessons? What inhibitors of health education do you recognize in your school?). The questionnaire also included questions about age, gender, teaching experience and completed courses/training. Participation in the questionnaire was anonymous and voluntary.

**Participants**

Participants were randomly recruited. The sample consisted of 130 teachers of physical education, employed in lower and upper secondary schools in the region of Upper Silesia (Poland). 50.78% of the participants were female and 49.22% were male. Age distribution showed 17.97% to be 30 years and under, 32.81% aged 31-39 years, 35.16% aged 40-48 and 14.08% aged 49+. The majority of the respondents had 10-20 years of teaching experience. Only 16% of the teachers surveyed had completed additional training, out of whom 2 persons had had special training.
in health education – other kinds of training and courses were connected with physical education.

**Procedure**

The questionnaires were distributed by interviewers in randomly selected schools, and some of them were posted on-line. The participants filled in the questionnaire anonymously after giving verbal or written informed consent. The gathered data were analyzed using descriptive statistics.

**Results**

Analysis of the Regulation of the Ministry of National Education of the 27th of August 2012 on core curricula for pre-school and general education in particular types of schools, Attachment No. 4, showed the guidelines of the Ministry in terms of learning objectives and content of health education. The table below presents a summary of learning objectives and teaching content for both types of schools:

**Table 1. Learning objectives and content of health education in lower and upper secondary schools**

<table>
<thead>
<tr>
<th>Lower secondary school</th>
<th>Upper secondary school</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Learning objectives of health education</strong></td>
<td><strong>Content of health education</strong></td>
</tr>
<tr>
<td>• understanding the relationship between physical activity and health</td>
<td>• implementation of the principles of a healthy lifestyle in daily life</td>
</tr>
<tr>
<td>• personal and social skills conducive to health and safety</td>
<td>• skills conducive to disease prevention and improvement of physical, social and mental health</td>
</tr>
<tr>
<td>• defining health</td>
<td>• health as a value for a human being and resource for society</td>
</tr>
<tr>
<td>• health determinants</td>
<td>• caring for one’s health during youth and early adulthood</td>
</tr>
<tr>
<td>• pro- and anti-health behaviours</td>
<td>• responsibility for one’s own and others’ health</td>
</tr>
<tr>
<td>• dealing with negative emotions</td>
<td>• positive thinking</td>
</tr>
<tr>
<td>• identification of one’s strengths and weaknesses</td>
<td>• self-esteem</td>
</tr>
<tr>
<td>• coping with stress</td>
<td>• decision making skills</td>
</tr>
<tr>
<td>• social relations – with parents, peers and other people</td>
<td></td>
</tr>
<tr>
<td>Lower secondary school</td>
<td>Upper secondary school</td>
</tr>
<tr>
<td>-----------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Content of health education</td>
<td>Content of health education</td>
</tr>
<tr>
<td>• seeking and receiving support</td>
<td>• self-improvement</td>
</tr>
<tr>
<td>• assertiveness</td>
<td>• social skills – coping with criticism, obtaining feedback</td>
</tr>
<tr>
<td>• health and social damage resulting from risky behaviours</td>
<td>• reasonable time management</td>
</tr>
<tr>
<td></td>
<td>• self-examination, health self-control, significance of preventive examination</td>
</tr>
<tr>
<td></td>
<td>• patients’ rights (active patient)</td>
</tr>
<tr>
<td></td>
<td>• knowledge about mental illnesses, fighting stereotypes and stigmatization</td>
</tr>
<tr>
<td></td>
<td>• project on selected health issues - winning allies and co-participants in school, at home and in local community</td>
</tr>
<tr>
<td></td>
<td>• co-participation and cooperation of people, organizations and institutions in activities for health</td>
</tr>
<tr>
<td></td>
<td>• relationship between health and the environment, creating an environment conducive to health</td>
</tr>
</tbody>
</table>

Source: Attachment No. 4 to the Regulation of the Ministry of National Education on core curricula for pre-school and general education in particular types of schools: Core curriculum of general education for lower and upper secondary schools, graduation from which results in obtaining a school leaving certificate upon passing a final exam. Obtained from: https://men.gov.pl/zycie-szkoly/ksztalcenie-ogolne/podstawa-programowa/rozporzadzenie-o-podstawie-programowej-w-calosci.html (04.11.2016)

In addition to the above teaching content, the legislator also plans to introduce other health-related contents to be implemented during physical education lessons, e.g.:

- lower secondary school: preventing accidents and injuries, personal hygiene during puberty;
- upper secondary school: search for reliable information on health and sport, critical analysis of media information, prevention of civilization diseases, negative health impacts of work, attention to health during youth and early adulthood.

The above table shows that health-related content is very broad, and by assumption it should help students to acquire the necessary knowledge and skills in the field of health education, prevention and health promotion. Guidelines of the Ministry contributed to the formulation of research questions and were used to develop a questionnaire for physical education teachers.
During the survey, the teachers were asked what they considered to be the main goal of health education. The largest part of the respondents, 75%, considered the awareness of the need for lifelong physical activity as the main purpose of health education activities in the classroom. In turn, over 69% said that in fact they had mainly implemented the principles of a healthy lifestyle in daily life. 51.6% of the teachers focused primarily on skills related to preventing diseases and improving all aspects of health. Almost 48% of the respondents had mainly achieved purposes related to being a critical consumer and sports viewer. More than 3% of the respondents had achieved goals related to social risks, skills of controlling emotions, cooperation in a group, or developing the skill of following certain rules.

As far as the teachers’ attitude toward the implementation of health education content in the core curriculum was concerned, more than 69% of the respondents were convinced that the health education content was suitable and useful for students. Approximately 8% expressed the view that the content provided in the core curriculum was inadequate and should contain additional issues. Over 20% of the respondents had no opinion on the subject or they did not know the content provided in the core curriculum.

The respondents were also asked about the time during a school year that they actually spent implementing the health education content. More than half of the teachers stated that they spent 30 hours during the school year implementing the health education content (according to the commentary on the core curriculum). Almost 33% of the respondents did not follow instructions indicated in the core curriculum and spent less than 30 hours per year dealing with issues related to health. Almost 8% of the respondents spent more than 30 hours per year dealing with the health education content and another 8% stated that they devoted no time at all to that purpose.

Next, the methods that the teachers use while implementing the health education content were analyzed. Almost 85% of the teachers stated that they used such methods and techniques of activating students as discussion and conversation. In turn, nearly 40% of the respondents, pointed to the use of case studies and more than 33% used project work and presentations. Less than 19% of the respondents said they used techniques based on visualization (mind maps, posters, etc.). Over 15% of the teachers declared the application of simulation techniques (role playing) in the classroom. 8.6% of the respondents used methods not defined in the questionnaire like photo-expression. Only 6.25% of the respondents used a portfolio method during classes.

The teachers were also asked to indicate the inhibitors of health education implementation. A vast majority of the teachers believed that difficulties in imple-
menting health education stemmed from psychological determinants of students or no interest in health behaviours in their family home. Over 36% believed that difficulties in implementing health education resulted from a lack of adequate financial resources for this purpose. 25% of the respondents considered insufficient competences or weak commitment of teachers as the reasons for difficulties. The lowest percentage of the respondents thought that school managers and Boards of Education were responsible for failure in the implementation of health education.

The research also took into account the teachers’ opinions on their expertise to carry out health education. Almost 48% of the teachers considered their skills and preparation as sufficient. A similar proportion of the respondents (46%) stated that their skills and preparation for implementing health education should be better. A little over 3% of the respondents considered themselves unprepared to carry out health education lessons and the same percentage had no opinion on this issue.

Finally, the teachers were asked whether they would like to improve their qualifications concerning health education. More than 41% of the respondents would be willing to take training in school. 34.4% of the teachers declared their willingness to take a 30-hour course. Almost 12% of the respondents expressed a desire to undertake postgraduate studies, and almost 8% – a 100-hour-course. 1.6% declared that they would like to enrol in an undergraduate course. More than 3% of the respondents were unwilling to take any activities to increase their qualifications.

Discussion

The guidelines of the Ministry concerning health education reflect a holistic approach to health-related issues and fully meet educational needs of students. However, some concerns include the manner in which education objectives are to be achieved and content is to be conveyed by the teachers of physical education.

The conducted survey allowed for identifying gaps in school-based health education implementation in Polish educational conditions. As revealed, 1/5 of the respondents were not familiar with the issues of health education indicated in the core curriculum, or had no opinion on their usefulness or adequacy. Additionally, the physical education teachers marginalized issues related to psychosocial health; only 3% implemented such content during classes – the respondents mainly focused on physical activities. The gathered data are consistent with Muros Ruitz and Fernández-Balboa’s (2005) research results, which showed that the knowledge and understanding of basic definitions and principles among the interviewed PE teachers in Spain were in many cases inadequate and inconsistent with the
literature. Likewise, while interviewing PE teachers in Norway, Dowling (2008; Dowling, Kårhus, 2011) found that their understanding of gender issues in PE was somewhat lacking, rooted in their biographies and common-sense understanding rather than being theoretically formed. The obtained data lead to the conclusion that among the teacher’s competences mentioned in the first paragraph, knowledge is the primary one. As indicated by Santiago, Disch and Morales (2012), a prerequisite to be a competent and effective teacher is to have a strong knowledge of the subject matter taught. Teachers’ content knowledge affects their pedagogical approach and influences their teaching processes as well as their confidence in teaching the subject matter.

The conducted research also showed that over 40% of the teachers did not spend the amount of time required in the core curriculum implementing the content of health education. Nevertheless, only 1/4 of the teachers surveyed considered their lack of competence and appropriate involvement as the reasons for failure in the implementation of health education, the majority of the respondents blamed students and their parents for such a situation. In this context, it is worth referring to Koeppel, Stylianou and Hodges Kulinna’s (2014) research, which showed that when teachers have significant teacher preparation on a specific curricular model, perpetual professional development opportunities and administrative support, curricular models are taught with higher fidelity levels.

As far as the methods of implementation were concerned, discussion and conversation were the most frequently applied ones by the teachers interviewed. Typical activating methods were used only by 1/3 of the respondents. Only 48% of the respondents thought they had substantial qualifications for carrying out health education lessons. Fortunately, the vast majority of the teachers expressed willingness to improve their qualifications in the field of health education. However, most of them would be interested in training organized in school or a short-term course. About 3% of the teachers were not interested in the development of their qualifications in any form.

Thus, it can be concluded that the conducted research revealed the malfunction of a regulation existing in Poland since 2008 assuming the implementation of health education by physical education teachers. The study proved that contemporary solutions concerning school-based health education required changes, which should be started with more thorough training of future teachers. It has been scientifically proven that staff commitment plays a crucial role in health education implementation and the success of this initiative largely depends on their contribution and their capacity to do it properly (Jourdan, Samdal, Diagne et al., 2008). Therefore, it seems to be important to implement systemic changes in physical
education teachers’ training in Poland, since solutions similar to the Polish ones are successfully realized in many different countries. In many European counties the training that PE teachers receive is compulsory and comprehensive to provide them with sufficient knowledge and skills. In most cases, countries have general strategies, which include continuing professional development (CPD) courses designed for all teachers. In turn, in several countries, different forms of CPD focusing on physical education are available to specialist teachers, but also to generalists who want to improve their skills in the subject. Some countries report that they have CPD courses targeted specifically at teachers of physical education. They are aimed at improving the quality of teaching and learning processes, updating the skills of teachers and introducing them to new techniques and trends in the methodology of teaching physical education at school. Special emphasis should be laid on Cyprus and Turkey, which provide compulsory CPD for physical education teachers on a regular basis. In Cyprus, nationwide seminars and CPD courses are held twice a year, along with annual two-day CPD training between school semesters. In Turkey, CPD programmes are usually organized at the beginning of each semester (European Commission, 2013).

As pointed out by Yager and O’Dea (2008), “in Australia and other Western countries, health and physical education teachers provide children and adolescents with information, teach skills and shape beliefs about and attitudes towards many health topics including nutrition, puberty, prevention of lifestyle diseases, movement skills, drug education, sex education, self-concept, road safety and mental health”. It is essential for Polish physical education teachers to be trained in implementing the same content.

References


Slovak Primary Education Teachers’ Views about and Attitudes towards Contents of Work and Technical Education

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Abstract
The contribution is aimed at study of views and attitudes towards the contents of Technical education from the perspective of elementary school female teachers in Slovakia. Their measurement was carried out by a self-designed questionnaire which was a part of the research methods used (content analysis of curricular documents, international comparison, interview and observation). The originally designed questionnaire included items aimed at finding out views (evaluation of the importance of contents of education) and attitudes (cognitive, affective and conative components) of primary education teachers towards the contents of Technical education in the 4th form of elementary school. The research sample consisted of 334 female teachers. According to results of analysis, teachers considered such themes as traditions and crafts or catering to be more important than themes connected with the use of technical materials and design and they also had more positive attitudes to such themes. Another conclusion is that explanations of the views on the importance of the preferred themes were accounted for mainly by the affective component of teachers’ attitudes.

Keywords: female teachers, primary education, technical competence, views, attitudes, feminisation
Introduction

Today, nobody doubts that the current state in Slovakia draws attention to shortcomings or challenges in the harmonization of the economic and educational policy (e.g. Workie Tiruneh at al., 2012; ÚPSVaR/Office of Labour, Social Matters and Family/, 2015). It is frequently stated that education does not build continuously to the labour market needs and that the school system still accentuates quantitative and not qualitative parameters of education. However, one of the major paradoxes may be seen in the fact that despite significant progress in science and technology at the turn of the 21st century, technical education is not paid sufficient attention to in Slovakia. This situation is long-term despite the opposite direction of European Union developed countries (Kozík & Škodová, 2008; Urban, 2007). Undersizing and poor continuity of technical education at lower stages of education has a subsequent impact also on pupils' low interest in technical fields during higher vocational education, which is in sharp contradiction with the national needs and employers’ needs (e.g., Vasiliak, 2007; ÚPSVaR, 2015).

State of Development of Basic Competences in Science and Technology in Slovakia

In 2005 the European Council and the European Parliament passed the document Key Competences for Lifelong Learning – A European Reference Framework, concluded with a recommendation to aim education at generating qualities in human resources that represent a global leader. Thus, curricula should contain mainly key competences for mathematical literacy and competences for the area of science and technology. As far as the technical competence is concerned, the document established requirements for knowledge including knowledge of principles of the workings of the world, technology, products and processes.

In general, we may speak also of achieving technical literacy (Kozík & Depešová, 2007). Its formation and acquisition of work habits takes place at all stages of education and has a long tradition in Slovakia (Lukáčová & Bánesz, 2007). In 2008 the Slovak government created legislative conditions for a system reform, by the introduction of a two-level model of curriculum emphasizing orientation of goals to the development of key competences (Kmeť, 2011). Within modifications for primary education, a separate subject Technical Education remained only in the 4th form, with one period per week. It contained five thematic units: “Creative Use of Technical Materials”, “Basics of Design”, “Care for the Environment”, “Catering and Food Preparation” and “Folk Traditions and Crafts”. The definition of goals was based on general requirements of scientific and technological literacy and general
goals of primary education. Their framing included three basic levels of pupil personality holistic development: the level of knowledge – *education about technology*, level of values and attitudes – *education for the relationship to technology*, level of working activities, experience and skills – *education through technology* (National Educational Programme – ISCED1, 2008).

The contribution covers measurement in the context of the 2008 content standard currently implemented only in the 4th form at elementary schools in Slovakia.

**Feminisation of Education as a Possible Cause of Hidden Curriculum Existence**

Technical education at elementary schools has been so far assessed from many aspects. There are comments on teachers’ competences (Ďuriš, 2007), insufficient technological equipment at schools (Bánesz, Lukáčová & Sitáš, 2010), historical connections, changes in the content of education or their justification (Kožuchová et al., 2011, Kozík, 2013). However, we have not come across any study of the issue from the perspective of considerable feminisation in our school system.

In the simplest conception, a branch is considered feminised where more than 2/3 of the total number of employees are women (e.g., Tokárová, 2006; Bank, 2007). According to the report by EACEA P9 Eurydice (2010), foreign research points to the fact that until recently more than 60% of the people working in primary and secondary education in all EU countries except Greece and Luxembourg were women. The report also states that feminisation of the teaching profession in the majority of the EU countries exists mainly at the level of preprimary and primary education. Some explain this situation by the connection of the teaching profession with care, family life or emotional sensitivity of women (e.g., Fischman, 2000; Drudy, 2008). Weiner (2002) writes that women accept low salaries or a lower position within a hierarchy easier, because the nature of the teacher’s work is compatible with their domestic duties.

However, in addition to the number of women it is necessary to look also at other facts related to this phenomenon. Skelton (2002) notes, in addition to the statistical aspect, also the cultural and political aspect of the phenomenon. From the perspective of the cultural aspect of feminisation, a question arises naturally how female teachers’ preferences in the area of technical education reflect in the educational practice.

**Explicit definition of the objectives of study**

According to the survey studies, the knowledge in the area of education feminisation is divided into two main streams of questions characteristic of all
themes unfolding from the issue. One aspect concerns the question why the area of education has become “gender unbalanced”; the other aspect tracks the line of impacts of this phenomenon on the process of education and outcomes of education (Kelleher et al., 2011). The present study deals with the other aspect, while the problem studied is considered to go beyond the national occurrence. From this point of view Slovakia is namely an example of a country still failing to address the situation described above. In 2014 the portion of men in primary education in the Slovak Republic was below 7% (MŠVVaŠ SR /Ministry of Education, Science, Research and Sport of the Slovak Republic/, 2014). At the same time, the lack of male role models for pupils was a cause for great concern, for which several European countries adopted national strategies with the aim to increase the number of male teachers in primary education.

On the basis of the above theoretical background, the following objectives of the study were formulated: (1) Find out teachers’ views on the importance of individual thematic units of Technical Education and rank them in order of their preference; (2) find out teachers’ attitudes (cognitive component, affective component, conative component) towards individual thematic units of Technical Education and rank them in order of their preference; and (3) find out which attitude components explain the views on the importance of individual thematic units of Technical Education.

Methods

The research sample consisted of 334 female teachers of primary education. The teachers’ exact age was not established, but the middle value (median) determining the length of service ranged from 15 to 20 years in the whole sample. The sampling of the participants may be considered purposive with elements of stratification, since the sample included only teachers of the 4th forms of elementary schools, with the participants representing all regions of Slovakia. Another element of stratification was applied at the level of the size of the town where the school was located. Approximately a half of the teachers was from smaller towns and municipalities (n = 193) and the other half from district and regional towns (n = 141). All the teachers participated in the research voluntarily, which they confirmed by their informed consent at the beginning of the questionnaire. Originally, also male teachers were included in the sample of participants, whom we finally decided to exclude from analyses due to their low number and subsequent limited possibility to make inter-gender comparisons. Also, a possible distortion of data was assumed.
To measure views and attitudes, an original questionnaire was designed, consisting of three parts: (1) finding out socio-demographic characteristics; (2) finding out views on the importance of thematic units (defined above) within Technical Education; and (3) finding out attitudes towards thematic units within Technical Education. Attitudes were measured at the cognitive, affective and conative levels. To ensure a higher content validity of the measurement, individual components of attitudes were recorded at descriptions of specific activities falling under individual thematic units. Each thematic unit was represented in the questionnaire by the number of activities matching its periods by the National Educational Programme of 2008. When calculating comparable indices within individual thematic units, the attitude score had to be standardized. In the second and third part of the questionnaire, a 10-point scale was used, with 1 meaning the minimum and 10 meaning the maximum.

**Results**

Table 1 (Objective 1) shows a summary of descriptive characteristics of the variable “views on the importance of thematic units of Technical Education”. On the basis of mean values of the variables for the whole sample of participants, it can be stated that the teachers ranked the thematic units from the most important to the least important as follows: Traditions and Crafts ($M = 8.44$), Catering and Food Preparation ($M = 8.19$), Creative Use of Technical Materials ($M = 7.83$), Basics of Design ($M = 7.06$). To compare individual parameters, paired $t$-tests and the Wilcoxon rank tests were used (the variable “view on the importance of the thematic unit Traditions and Crafts” did not fulfill the condition for normal distribution of data). Results of statistical analyses are shown in Table 2. In summary,
it can be stated that the statistical significance was not fully confirmed only in the case of comparison of the variable “the importance of the thematic unit Catering and Food Preparation and the thematic unit Creative Use of Technical Materials”.

TECH – Creative Use of Technical Materials, KON – Basics of Design, STRAV – Catering and Food Preparation, TRAD – Folk Traditions and Crafts

<table>
<thead>
<tr>
<th>Table 2. Results of comparison analyses for the variables expressing views on the importance of thematic units</th>
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</thead>
<tbody>
<tr>
<td>N = 334</td>
</tr>
<tr>
<td>TRAD_STRAV</td>
</tr>
<tr>
<td>TRAD_TECH</td>
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<tr>
<td>STRAV_TECH</td>
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<tr>
<td>STRAV_KON</td>
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<tr>
<td>TECH_KON</td>
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</tbody>
</table>

Table 3 (Objective 2) shows a summary of descriptive characteristics of the variables characterizing the teachers’ attitudes towards individual thematic units of Technical Education. On the basis of the mean values of the summative score (sum of the cognitive, affective and conative components) of individual attitudes for the whole sample of female participants it can be stated that the female teachers have the most positive attitudes towards the theme “Catering and Food Preparation” (M = 25.60), then towards “Folk Traditions and Crafts” (AM = 23.17), followed by “Creative Use of Technical Materials” (AM = 19.89) and finally “Basics of Design” (AM = 17.09). To compare individual parameters, paired t-tests and the Wilcoxon rank test were carried out (the variable “summative score” for the attitude towards the thematic unit Catering and Food Preparation did not fulfil the condition for normal distribution of data). Results of statistical analyses are presented in Table 4. In summary, it can be stated that the statistical significance was confirmed for all the variables compared.
### Table 3. Descriptive characteristics of variables characterising attitudes towards contents/thematic units

<table>
<thead>
<tr>
<th>M</th>
<th>MDN</th>
<th>SD</th>
<th>Skew</th>
<th>Kurt</th>
<th>N = 334</th>
<th>Thematic unit/Attitudes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td><strong>TECH</strong></td>
</tr>
<tr>
<td>7.05</td>
<td>7.00</td>
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<td>-.23</td>
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</tr>
<tr>
<td>7.12</td>
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<td>-.38</td>
<td>-.33</td>
<td></td>
<td>Relationship (Affective component)</td>
</tr>
<tr>
<td>6.52</td>
<td>6.33</td>
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<td>.20</td>
<td>-.61</td>
<td></td>
<td>Performance frequency (Conative component)</td>
</tr>
<tr>
<td>19.89</td>
<td>20.00</td>
<td>4.82</td>
<td>-.21</td>
<td>-.38</td>
<td></td>
<td>Summative score (All components)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>KON</strong></td>
</tr>
<tr>
<td>5.87</td>
<td>5.83</td>
<td>1.95</td>
<td>.77</td>
<td>6.48</td>
<td></td>
<td>Knowledge (Cognitive component)</td>
</tr>
<tr>
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<td>6.25</td>
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<td>-.01</td>
<td>-.10</td>
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<td>Relationship (Affective component)</td>
</tr>
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<td>5.05</td>
<td>5.00</td>
<td>1.81</td>
<td>.18</td>
<td>-.06</td>
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<td>Performance frequency (Conative component)</td>
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<td>16.83</td>
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<td>.14</td>
<td>-.06</td>
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<td>Summative score (All components)</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td><strong>STRAV</strong></td>
</tr>
<tr>
<td>8.48</td>
<td>9.00</td>
<td>1.82</td>
<td>-1.53</td>
<td>2.67</td>
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<td>Knowledge (Cognitive component)</td>
</tr>
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<td>9.00</td>
<td>1.79</td>
<td>-1.39</td>
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<td>-1.61</td>
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<td>27.00</td>
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<td>-1.37</td>
<td>1.54</td>
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<td>Summative score (All components)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>TRAD</strong></td>
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<td>-.89</td>
<td>.31</td>
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<td>Knowledge (Cognitive component)</td>
</tr>
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<td>-.78</td>
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<td>Relationship (Affective component)</td>
</tr>
<tr>
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<td>2.30</td>
<td>-.64</td>
<td>.17</td>
<td></td>
<td>Performance frequency (Conative component)</td>
</tr>
<tr>
<td>23.17</td>
<td>24.00</td>
<td>5.41</td>
<td>-.39</td>
<td>.08</td>
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<td>Summative score (All components)</td>
</tr>
</tbody>
</table>

### Table 4. Results of comparison analyses for variables expressing the total attitude score towards individual contents/thematic units

<table>
<thead>
<tr>
<th>N = 334</th>
<th>M</th>
<th>MDN</th>
<th>t/Z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRAV_TRAD</td>
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<td>23.17</td>
<td>8.381</td>
<td>.000</td>
</tr>
<tr>
<td>TRAD_TECH</td>
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<td>19.87</td>
<td>10.150</td>
<td>.000</td>
</tr>
<tr>
<td>TECH_KON</td>
<td>19.87</td>
<td>17.09</td>
<td>10.141</td>
<td>.000</td>
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</tbody>
</table>
Table 5. Summary of regression models

<table>
<thead>
<tr>
<th>Predictor/Attitude</th>
<th>R-Beta</th>
<th>R Square</th>
<th>F/Sig.</th>
<th>t/Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive component</td>
<td>.375</td>
<td>.141</td>
<td>54.001/.000</td>
<td>7.349/.000</td>
</tr>
<tr>
<td><strong>Dependent variable: importance of the theme TECH</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive component</td>
<td>.359</td>
<td>.129</td>
<td>49.020/.000</td>
<td>7.001/.000</td>
</tr>
<tr>
<td><strong>Dependent variable: importance of the theme KON</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affective component</td>
<td>.247</td>
<td>.061</td>
<td>21.544/.000</td>
<td>4.642/.000</td>
</tr>
<tr>
<td><strong>Dependent variable: importance of the theme STRAV</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affective component</td>
<td>.409</td>
<td>.167</td>
<td>66.436/.000</td>
<td>8.151/0.000</td>
</tr>
<tr>
<td><strong>Dependent variable: importance of the theme TRAD</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Predictor – explaining variable; R-Beta – correlation coefficient between the predictor and the variable explained (view on the importance), in this case representing also the standardized coefficient Beta in the table of regression coefficients; R Square – coefficient of determination; F/Sig. – result of the model significance test; t/Sig. – result of the test assuming significance of the predictor in the model.

Table 5 (Objective 3) presents a summary of the parameters of linear regression models showing the statistical dependence of views on the importance of thematic units on attitudes towards the thematic units. In the first step, correlation matrices were made between the dependent variables (views on the importance) and the predictors (components of attitudes). In the second step, multiple linear regression analysis was carried out by means of the stepwise method. Next, a regression model was chosen, with its predictive values as high as possible with a meaningful number of predictors that were compared in the overall degree of their influence on the dependent variable. On the basis of the given results, it may be observed that within all the themes studied, a regression model that contained only one predictor appeared to be the most meaningful (supplemented additional variable did not considerably increase the quality of the regression model published). Even despite the statistical significance of the models and regressors the percentage of variability of the dependent variables explained by individual models is relatively low. However, the lower predictive value of the models could be expected due to the character and number of the variables added to the model (they were only components of attitudes – views are accounted for also by other explaining vari-

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1 Attitudes were perceived as predictors due to their greater stability in time and higher consistency when compared with views. Thus, it is hypothetically assumed that attitudes towards the issue influence views rather than vice versa, although, of course, the possibility of a reversed course of influence is not excluded.
ables). However, it is obvious from the above results that the affective component of attitude plays a greater role in preferred themes (Traditions and Crafts, Catering and Food Preparation), while the cognitive component of attitude plays a greater role in less favourable themes (Creative Use of Technical Materials, Basics of Design).

Discussion

The female teachers consider thematic units such as Traditions and Crafts or Catering and Food Preparation as more important than themes connected with the use of technical materials or basics of design. They report also more positive attitudes within the former themes. The finding is not surprising since Slovakia is considered to be oriented conservatively, which includes still a relatively high degree of gender stereotyping and gender inequality (e.g., MPSVaR SR, 2016). This is, according to Bosá (2003), connected with a clear image of “masculinity” and “femininity” drawn against the background of the traditional role division where the woman is a sensitive mother. However, the fact that two more significant thematic units in the context of the development of competences in science and technology were not preferred either in the case of importance evaluation or in the case of attitudes studied indicates a possibility of a hidden curriculum in this area, operating not fully in line with general requirements for the increase in the quality of competences in the area of science and technology. Our findings are thus consistent with many studies indicating direct impacts of the sector feminisation on the educational process (e.g., UNESCO – IIIEP, 2011).

The study results also point to the fact that the strategy of policies should also address the enormous prevalence of female teachers at elementary schools (MŠVVaŠ SR, 2014), not only content innovations. In addition to measures aimed at cumulating numbers of male teachers in pre-primary and primary education there is, of course, a possibility to focus on undergraduate training of future female teachers or their continuing education. We believe that the results in the second part of our study supplemented also by findings from the research methods used could be of use also in this respect. We found out that as far as views on the importance of preferred themes were concerned (Traditions and Crafts, Catering and Food Preparation), their explanation rested on the affective rather than cognitive or conative components of attitude. In contrast, as far as views on the importance of less attractive themes were concerned (Creative Use of Technical Materials, Basics of Design), their explanation rested mainly on the cognitive component
of attitude during preparation for Technical Education. However, we believe that the key is the recommendation aimed unambiguously at strengthening training interventions up to the level of experiencing and emotions that seem to be of the key importance in the formation of views and attitudes towards this issue.

One of the trends in the study of this issue should be an empirical design taking into account measurement of impacts of school feminisation on education outcomes and on performance of various groups of students (boys vs. girls, pupils from families with a lower SES, etc.) (Zuze & Redy, 2011 in: UNESCO – IIIEP, 2011). This type of research could in future give an insight into gender differences in such a specific area as science and technology.

References


Integration of Theoretical and Practical Undergraduate Training in the Processes of Developing Student Teachers’ Professional Competences

DOI: 10.15804/tner.2017.47.1.14

Abstract

The text presents partial results of research on theory and practice integration in future teachers’ undergraduate training. The aim was to find out respondents’ opinions on the level of theoretical and practical training integration in the processes of developing specific professional competences during study. Research tools consisted of a self-designed questionnaire and interviews (only partial questionnaire outputs are included because of limited content of study). The research sample was composed of 171 students of a master’s degree in teaching at three MBU teacher training faculties. The obtained data were processes by tools of descriptive and multi-dimensional statistics. Results indicate great discontent of the respondents with the low level of connection between theoretical and practical training in the processes of developing special professional competences during study and provide starting points for necessary system changes in the theoretical and professional practical training of future teachers.

Keywords: professional competences and activities, future teacher, theoretical and practical training integration

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1 MBU Matej Bel University in Banska Bystrica.
Introduction

The level of theoretical and practical training integration during future teachers’ study at Slovak higher education institutions is criticized in most of the post-communist countries (Koršňáková & Kováčová, 2010; OECD, 2014; Šimoník, 2008; Bendl et al., 2011; Spilková & Tomková, 2010; Rovňanová, 2014, 2015; Kosová & Tomengová, 2015). In various countries it varies by education types and stages (ETS, 2003). It is typical of the developed OECD countries that the extent of student teachers’ teaching practice builds up already from the beginning of study. Its portion of teacher training for secondary education is much higher than in Slovakia. In some cases (Sweden, the Netherlands, Denmark, Iceland, Norway, etc.) it is more than 30–40% of the time of study. There are institutions of higher education in Canada, Belgium, the Netherlands or Finland with 700–780 hours of direct practice over the duration of study. Students at MBU teacher training faculties, studying a combination of two subjects by new accreditation (2014), have practice only in the master’s degree study, with the extent of 216 hours (approx. 102 hours before).

For the sake of comparison, the Finnish functional model of theoretical and practical training integration is characterized below. Finland is an example of a successfully developed school system, for a long time obtaining good results at the international level (TALIS; PISA, PIRLS, TIMSS). It is not governed by EU legislation, but accepts some recommendations. The system of teacher training is based on a sophisticated model of partnership between universities and their training schools in the area of education and educational research. Finnish teacher training universities (8) have 12 university training schools in their administration, as well as other regional partner training schools with carefully chosen teacher trainers. According to Sahlberg (2015), Průcha & Kansanen (2015), Niemi, Toom & Kallioniemi (2012), Simola (2014), there are three basic principles accentuated in Finnish teacher education: knowledge of the major subject; good theoretical knowledge of educational-psychological sciences, theory of teaching, curriculum and metacognition; building up students’ teaching practice directly at school (basic, advanced and final practice). They are aimed at gradual individual development of professional competences in the reflective model of teaching under the supervision of a mentor at practice at training school. Teacher training has the character of research-based teacher education, where the aim is not to educate researchers, but teachers able to understand research. In Finland, a mutual agreement has been reached between academics and in-service teachers that teachers need a deep knowledge of the latest progress in research on subjects taught. They
must take up a research-oriented attitude to their work, which means that they are expected to reflect critically on their own activity and deduce conclusions in the context of various sources. Teacher training must itself be the subject of research (Sahlberg, 2015). As students, Finnish future teachers practice at training schools while also participating in some research. This results in the development of competences requiring a certain way of metacognition (Kansanen, 2006). In this way, students learn argumentation about their teaching (the teacher’s understanding of teaching) on the basis of the knowledge gained from research findings, which they apply. The teaching profession is highly respected in Finland, has a high social status, teachers have high autonomy and responsibility. Its attractiveness raises also foreign experts’ attention (Everton, Turner, Hargreaves & Pell, 2007). It is one of the most desirable in the first choice of Finnish secondary school leavers (Průcha & Kansanen, 2015). The admission procedure is very complex and only the most able applicants succeed. A similar situation is in Singapore and South Korea. The rate of those remaining in the profession from taking up employment until retirement is higher than in other OECD countries and teachers are well paid. In the international survey TALIS 2013, the question whether teachers are valued in society was answered positively by 59% of Finnish teachers, but only 4% of Slovak ones. Only less than a third of the participating countries (31%) believed that teachers’ work is valued in society (OECD, 2014).

Slovakia belongs to countries with the lowest portion of practical training in teacher education (Kosová, 2012). The teaching profession is the second choice for most applicants (Rovňanová, 2013a), applicants are admitted to most teacher training programmes without examinations, and salaries of Slovak teachers are the worst among the compared OECD countries (OECD, 2014). The lack of practical training in the development of specific professional competences is evaluated critically, as well as too academic theoretical training without required connection to practice. In the 1990s, the development in post-communist countries brought a fall in the extent, importance and continuity of teaching practice types. At present, teaching practice mostly does not reach the state typical of the period of socialism and today’s teacher training at 34 teacher training faculties has reserves in its internal content and process (Černotová, 2006; Petrová & Duchovičová, 2013; Kosová & Tomengová et al., 2015). In this context, criticism of the didactic-practical training is justified. Despite the unfavourable development in this area, there are excellent workplaces (faculties or departments) successful in systemizing practical training in teacher education in compliance with the competence and reflective model in all practice types. They have built a stable network of training schools with teacher trainers and provide them with professional training (e.g., at University of Prešov).
On the basis of the above-mentioned, one of the research problems of modern pedagogy is the discrepancy – imbalance of theoretical and practical training in teacher education. Research findings in this area confirm that beginning teachers in our conditions are not sufficiently prepared for performance of the teaching profession (Rovňanová, 2013b; 2014, 2015; Sámelová, 2014) and their abilities to use theoretical knowledge to improve practical educational activities are at a low level. For some they are not prepared at all, or they are prepared only in theory, without connection to the needs of educational reality.

The objective of our research within MBU teacher training faculties (complex results for eight compared faculties have not been published yet) was to identify connections influencing the level of theoretical and practical training integration during study. The following was explored (research questions): what is the level of importance attributed by respondents to the theoretical and practical training integration; how satisfied are they with its current state; and how do respondents of three MBU teacher training faculties evaluate the level of developing specific professional activities in the context of theoretical and practical training integration during study?

**Research Methodology**

The research sample was composed of 171 respondents – student teachers in the first and second years of a master's degree study at three MBU teacher training faculties: Faculty of Education (n = 58; 14 men, 44 women), Faculty of Arts (n = 57; 14 men, 43 women), and Faculty of Natural Sciences (n = 56; 10 men, 46 woman), of 23.5 years of age on average and 7.2 months of practice (preceding the study course or as its part). The portion of men was 22.2% and women 77.8%. In terms of methodology, it was an intentional convenience sample. The sample was not representative. Therefore, the obtained results cannot be generalized to population, which is taken into consideration in the data analysis and interpretation. Research tools consisted of a self-designed questionnaire and interviews (with a separate output pending). When designing the questionnaire, the following were taken into account: results of a pilot study (N = 45) and three viewpoints (requirement of triangulation): theoretical (existing research tools), praxeological (professional erudition and experience of co-operating administrators) and legislative one. The legislative viewpoint was based on the draft professional standard for beginning teachers (Šnidlová, 2014; Rovňanová, 2015), from which 28 particular specific professional activities were chosen for the main questionnaire item. Within it, the respondents evaluated the level of educational activity development. For
the quantitative analyses of data, mean values were used – the mean, median, mode, standard deviation; the Kruskal-Wallis H test and Spearman's correlations (IBM SPSS Statistics 19). The controlled variable was the faculty attended by the respondent. Due to the research sample structure, the chosen level of statistic significance was $\alpha = 0.05$ ($p \leq 0.05$).

**Research Results**

When assessing the importance of theoretical and practical training integration, it is considered to be extremely important by up to 86.9% of the respondents; and 83.6% of the respondents are dissatisfied with the current state. The most important findings are those relating to the evaluation of the level of developing selected specific professional activities during study on the scale: 1 – not developed, 2 – developed only theoretically, 3 – developed partially theoretically-practically, 4 – developed at a reasonable level of theory-practice connection and 5 – developed at a very high level of theory-practice connection. Results with descriptive statistics per faculties are shown in Tables 1, 2 and 3. They contain the first 10 activities reported as undeveloped or developed only theoretically, arranged in sequential order by low mean values and low values of modes (1 and 2) and medians (1 and 2). There are 11 activities in total in all groups, 9 of them repeated in each group.

<table>
<thead>
<tr>
<th>Table 1. Faculty of Education – descriptive statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
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<tr>
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</tr>
<tr>
<td>3</td>
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<tr>
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<tr>
<td>8</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>10</td>
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</tbody>
</table>

*Legend:* Eda – educational activity, 2 – work with pupils from MRC (marginalized Roma communities) and SDE (socially disadvantageous environment), 3 – work with pupils with SEN (special educational needs), 4 – work with underachievers, 8 – carry out action research in the classroom, 11 – conduct meetings with parents, 16 – solve problems with discipline, 17 – implement prevention and improvement of socio-pathological behaviour, 26 – undertake supervision of pupils, 27 – plan one's professional growth.
Table 2. Faculty of Arts – descriptive statistics

<table>
<thead>
<tr>
<th>Order</th>
<th>Eda</th>
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<th>Mean</th>
<th>St.dev.</th>
<th>Median</th>
<th>Mode</th>
<th>N mode</th>
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<th>Max</th>
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<td>5</td>
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<td>25</td>
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<td>4</td>
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<td>3</td>
<td>3</td>
<td>23</td>
<td>1</td>
<td>4</td>
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</tbody>
</table>

Legend: Eda – educational activity, 2 – work with pupils from MRC (marginalized Roma communities) and SDE (socially disadvantageous environment), 3 – work with pupils with SEN (special educational needs), 4 – work with underachievers, 8 – carry out action research in the classroom, 11 – conduct meetings with parents, 13 – keep pedagogical documentation, 16 – solve problems with discipline, 17 – implement prevention and improvement of socio-pathological behaviour, 26 – undertake supervision of pupils, 27 – plan one’s professional growth

Table 3. Faculty of Natural Sciences – descriptive statistics

<table>
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<tr>
<th>Order</th>
<th>Eda</th>
<th>Mean rank</th>
<th>Mean</th>
<th>St.dev.</th>
<th>Median</th>
<th>Mode</th>
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<th>Min</th>
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</tr>
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<td>0.556</td>
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<td>1</td>
<td>44</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>185.63</td>
<td>1.571</td>
<td>0.871</td>
<td>1</td>
<td>1</td>
<td>36</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>11</td>
<td>158.86</td>
<td>1.643</td>
<td>0.943</td>
<td>1</td>
<td>1</td>
<td>35</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>13</td>
<td>179.97</td>
<td>1.679</td>
<td>0.855</td>
<td>1</td>
<td>1</td>
<td>29</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>26</td>
<td>195.98</td>
<td>1.679</td>
<td>1.046</td>
<td>1</td>
<td>1</td>
<td>35</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>8</td>
<td>185.76</td>
<td>1.732</td>
<td>0.798</td>
<td>2</td>
<td>2</td>
<td>26</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>17</td>
<td>206.33</td>
<td>1.839</td>
<td>0.733</td>
<td>2</td>
<td>2</td>
<td>25</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>27</td>
<td>172.49</td>
<td>1.857</td>
<td>1.227</td>
<td>1</td>
<td>1</td>
<td>32</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
<td>225.76</td>
<td>2.107</td>
<td>0.846</td>
<td>2</td>
<td>2</td>
<td>28</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>21</td>
<td>166.25</td>
<td>2.196</td>
<td>0.699</td>
<td>2</td>
<td>2</td>
<td>36</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

Legend: Eda – educational activity, 2 – work with pupils from MRC (marginalized Roma communities) and SDE (socially disadvantageous environment), 3 – work with pupils with SEN (special educational needs), 4 – work with underachievers, 8 – carry out action research in the classroom, 11 – conduct meetings with parents, 13 – keep pedagogical documentation, 16 – solve problems with discipline, 17 – implement prevention and improvement of socio-pathological behaviour, 26 – undertake supervision of pupils, 27 – plan one’s career

The respondents have the most difficulties and educational needs in all nine activities (listed below) occurring in the ranking of compared faculties. The Kruskal – Wallis H test was used to determine the statistical significance of differences found in the level of values in individual groups. All activities had the value...
of $p \leq 0.05$. It means that the respondents of the compared faculties differ in their assessment of all activities significantly at the chosen level of significance.

It was also examined if there was a correlation between the level of theory–practice connection and the difficulty to perform the activities, by calculation of Spearman's correlations. First, the presence of the correlation ($p \leq 0.05$) and subsequently its strength (size), by the correlation coefficient value ($r_s$) the values of which can fluctuate within the interval of $<-1, 1>$. Positive values indicate a direct correlation. This was confirmed in 20 activities of various strengths: the lower the theory–practice connection in training, the more difficulties in performance of the given activity. The strongest correlations are marked in brackets at the specific activities: working with pupils from MRC and SDE ($r_s = 0.145$), working with pupils with SEN ($r_s = 0.222$), undertaking supervision, carrying out action research in the classroom, keeping pedagogical documentation, implementing prevention of socio-pathological behaviour ($r_s = 0.338$), working with underachievers ($r_s = 0.183$), conducting meetings with parents and communicating with them, and planning one's professional growth, also, classroom management at FE and FA of MBU, and modelling and dealing with educational situations at FNS of MBU.

**Discussion**

The theoretical and practical training connection during study is the fundamental prerequisite of the development of future teachers’ professional competences. In teacher education, a well-tuned system of practice types is considered a source for development of the educational-psychological theory, an inspiration for the theory and a means of feedback on the theory functioning.

Our respondents were assumed to attribute a high importance to effective integration of theoretical and practical training because it facilitates the start to the teaching profession. Evaluation of the importance of theoretical and practical training integration shows that up to 86.9% of the respondents consider it to be of utmost importance and 83.6% are dissatisfied with the current state. They lack more hours of training and they consider the structured study of teaching as a serious obstacle for systematization of various practice types during the entire length of study. The result of statistical significance testing of differences in the respondents' opinions by faculties indicates their existence at a high level of statistical significance ($p = 0.000 \leq 0.05$).

Our findings are consistent with the findings of Šimoník (2008), who conducted a survey among teachers at Czech elementary schools on the level of future
teachers’ training at Czech faculties of education (N = 5350), already in 1998. He found out that up to 53.7% of his respondents considered undergraduate training insufficiently linked to practice, out of whom even 63.4% of younger teachers with teaching experience of less than 10 years. They reported little practice (62.2%) and little attention given to didactics (87.8%), mainly in the area of developing specific professional activities, as the biggest shortcomings. In Slovakia as well as in the Czech Republic the fact is undervalued that the core of the teaching profession is psycho-didactic. Proposals for improvement aimed at the area of teaching practice types and their inclusion in teacher training already in the first year of a bachelor’s degree study, their increased number, increased length of individual practice types, adoption of new practice types, more rigorous selection of teacher trainers and their pay rise. The situation is similar also today, especially in Slovakia, in addition complicated by structured teacher training not giving enough room to systematic elaboration of practice types with a high level of theoretical and practical training integration.

In the area of developing specific professional activities, the assumption was repeatedly confirmed, in accordance with results of international measurements OECD TALIS 2008 and 2013 and also our findings that some very important professional activities are not given sufficient attention in undergraduate teacher training. None of the presented activities was evaluated by our respondents by the option development at a high level of theory – practice integration. Negative evaluation prevails in 25 activities (89.3%). In their assessment of all activities, the respondents of the compared faculties differ statistically significantly at the chosen significance level (all values of p≤0.05). At the same time, a direct correlation was confirmed in almost all activities: difficulties in the respondents’ performance increase with insufficient theory–practice connection. In addition, most activities correlate positively also with each other (values of Spearman's correlation coefficients rs). Those activities were reported by the respondents also as the most demanding in terms of performance, and declared needs for education.

According to the international survey TALIS 2013 (OECD, 2014), young beginning (not only) Slovak teachers are interested the most in education in the area of teaching pupils with special educational needs (66%; TALIS 2013, average 20%), acquisition of ICT skills (60%; TALIS 2013, average 19%), pupil discipline (57%), pupil assessment (46%) and classroom management (42%). Schleicher (2011) gives the ranking of professional activities where teachers feel a high level of need for development: teaching pupils with special educational needs, ICT teaching skills, pupil discipline and behavioural problems, instructional practices, subject didactics, pupil counselling, content and performance standards, practice
in facilities and schools, teaching in a multicultural setting (in our country, also work with pupils from MRC and SDE, not only foreigners, there are not as many of them here as in other European countries), classroom management, and school management and administration. The given data strongly correlate with the teachers’ shortcomings in their previous professional didactic-practical training similarly as in our country.

**Conclusions**

The comparison of various research findings with our findings has led us to the conclusion that it is not decisive how many graduates complete teacher training annually. It is much more important whether and how well they are prepared for actual performance of the teaching profession in the practice of educational reality, whether they are sufficiently prepared to overcome related obstacles to gradually become good (effective) teachers. We do not see correction of shortcomings in practical training only in the area of teaching practice types. In our opinion, it is important to improve the effectiveness of the system of integrated theoretical and practical teacher training so that theory is intertwined with practical activities. Students’ gradually growing teaching experience should be followed up by its theoretical reflection. We consider teaching practice in teacher training to be a source for the development of the educational-psychological theory, an inspiration for the theory and a means of feedback on the theory functioning. At present our results in comparison with others show that if practical training should be of a university character, it definitely needs a system change. On the basis of the above starting points, analyses, comparisons and research findings by various authors some recommendations can be formulated that would lead to overall improvement of future teachers’ professional practical training: adopt a minimum framework professional standard for teachers as a starting point curriculum for teacher training; strengthen practical training by increased time (to at least 20% of the overall study time) for individual practice types and optimize their model into the full length of study (these two recommendations should be implemented also in descriptions of teacher training programmes and taken into consideration in the accreditation process) and provide financing for all teaching practice types.

In conclusion: we are aware that a well-thought organization of undergraduate and subsequent post-graduate teacher training will not provide a perfect teacher at its output. The final form and quality gets fine tuned gradually in the process of a teacher graduate’s transformation into a teacher only in the actual practice of
educational reality at the chosen school type and stage. This process is influenced also by such factors as the health condition, physical condition, intelligence, motivation for the teaching profession, personality characteristics and specific working conditions.

References


The Effect of Incentive Reward, Teacher Psychological Competence, and School Principal Leadership on Teacher Work Motivation in Senior High Schools in Medan

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Abstract
The purpose of this research was to find out the effect of incentive reward motivation, teacher psychological competence and school principal leadership on work motivation. Data were collected from closed-ended questionnaires and analyzed by applying the SPSS and AMOS programs. Test results indicated a direct effect of incentive reward on teacher work motivation as much as 0.411. The direct effect of teacher psychological competence on work motivation was 0.169. The direct effect of school principal leadership on work motivation was 0.249.

Keywords: incentive reward, teacher psychological competence, school principal leadership, teacher work motivation

1. INTRODUCTION

The teacher is obliged to show a high work performance so that he can motivate students and facilitate the realization of the learners' best potential. The aim of education in Indonesia is to educate learners to become people who worship the Almighty God with faith and surrender showing noble characters, good health, knowledge, abilities, creativities, independence and democracy and the people who act as democratic and responsible citizens of the state (based on the Constitution of National Education System, no. 20/2003, Chapter II, Article 3). In terms
of accomplishing the educational aims, the teacher as an educator should perform the educational process essential to demonstrate good motivation in various activities starting from planning, determining the strategies, selecting materials and teaching methods and finally making a proper evaluation.

The teacher plays an important role in motivating his students to acquire knowledge, skills and socio-religious values. Therefore, he is a social agent who should be given supervision in his teaching process. An incentive reward is an effort by an organization to provide an extra income so that he will be working more seriously and enthusiastically. The correlation between an incentive reward and work motivation has been an interesting issue among the experts of organizational behavior. In research, it was found out that an incentive reward is a form of salary, secondary allowance and non-financial or fringe benefit to improve work motivation. Incentive reward has an effect on the improvement of teacher motivation, which leads to the improvement of productivity, however, it should be clear that not all teachers are motivated only by incentive reward. The formation of teacher work motivation is the result of a combination of many factors such as commitment, school environment, personal development, teacher motivation, etc. All the factors have a direct and indirect correlation with the actions taken by the school principal. On the other hand, Buhler (2004:191) states that motivation is basically a simulation process which determines how many efforts are made to do a job. Motivation to work well determines the accomplishment of a goal, and so every individual must be able to enhance his motivation. The term “motivation” is closely related to the emergence of a tendency to do something to reach a goal. According to Gagne (1999:45), work motivation will have a positive impact on performance, employees, attitude, creativity and responsibility to support the profession.

Based on the description of the above determining factors for an individual to conduct a learning activity, the researcher focuses on several variables that contribute to the improvement of teacher work motivation. Through the theories and viewpoints mentioned above, the researcher conducted research on the effect of incentive reward, teacher psychological competence, school principal leadership on teacher motivation in senior high schools (SHS) in Medan.
2. THEORITICAL DESCRIPTION

2.1 Incentive Reward
An incentive is an effort by an organization to provide an extra income to make its employees work better and more seriously for the improvement of their work motivation. A company in the operation of its business needs employees and so the factor of work force should be given undivided attention. Moorehead and Griffin (1992:98) define an incentive as a gift or appreciation presented by an organization to an individual or a group of workers who demonstrate good performance beyond the criteria of the general salary system.

2.2 Teacher Psychological Competence
Johnson (as cited in: Anwar, 2004:63) states that the psychological competence of the teacher includes: (1) good and positive manners in dealing with everything as the duty of the teacher and towards educational situations and related elements, (2) understanding, internalization and application of the values which should have been adopted by the teacher, (3) personality, values, life outlook which indicate his efforts to become a significant figure and model for his students.

2.3 School Principal Leadership
Hill and Carroll (1997: 65) define leadership as an ability to drive or motivate a group of people (two or more) to work together in carrying out their activities directed at the common goals. An organizational structure is a hierarchy of units or work force or functions which are described according to the duties or main activities of the organization to accomplish the goals. Daryatno (2005:80) defines a school principal as a person who is responsible for all the activities at school.

2.4 Work Motivation
Motivation is connected with how a superior directs the potential of his subordinates to work productively so that they succeed in achieving and realizing the goals set before. Motivation is a driving force for someone to work together with others effectively and show integration with all his efforts to gain satisfaction. Robbins (2001:166), on the other hand, defines motivation as someone’s readiness to make the most efforts to reach the goals of their organization, which has been conditioned by the ability to reach certain personal goals.

Based on the above theoretical description, a model of variables in the research can be designed as presented in Figure 1:
3. RESEARCH METHOD

The method applied in this research is classified as an ex-post facto design with the consideration that this research is categorized as an non-experimental type. The research consisted of 4 variables with a path analysis. The population consisted of the teachers of Senior High School in Medan. Based on the existing data, there were 1446 teachers of the Senior High School working in Medan. The sample included 16.67% of the population, which is 240.50 that was rounded off as 241 people. The instrument was in the form of questionnaires whose validity and reliability had been tested. The instrument validity was computed using the Moment Product correlation formula while the reliability was tested using the Rater Reliability and Cronbach’s Alpha.

The test for analysis feasibility was done to confirm the views of Elazar (1982:580): 1) inter-variable correlation in this model was linearity testing, 2) residual variables were not correlated with the tested variables and the residual inter-variables were not intercorrelated (autocorrelation testing), 3) the correlation of intervariables in this model was causal or recursive (multicolinearity testing), 4) variables must have the scale intervals and 5) the variables measured should not contain errors (measureable). Further, the causal model was tested using the path analysis with the means of AMOS 18.
4. RESEARCH FINDINGS AND DISCUSSION

4.1 Findings
The description of the four variables is presented in Table 1.

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X1</td>
</tr>
<tr>
<td>Number of data (N)</td>
<td>241</td>
</tr>
<tr>
<td>Minimum score</td>
<td>72</td>
</tr>
<tr>
<td>Maximum score</td>
<td>168</td>
</tr>
<tr>
<td>Range</td>
<td>96</td>
</tr>
<tr>
<td>Number of class intervals</td>
<td>9</td>
</tr>
<tr>
<td>Intervals</td>
<td>12</td>
</tr>
<tr>
<td>Mean</td>
<td>124.15</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>18.84</td>
</tr>
<tr>
<td>Median</td>
<td>122.59</td>
</tr>
<tr>
<td>Mode</td>
<td>112.72</td>
</tr>
<tr>
<td>Ideal minimum score</td>
<td>34</td>
</tr>
<tr>
<td>Ideal maximum score</td>
<td>170</td>
</tr>
<tr>
<td>Ideal mean</td>
<td>102</td>
</tr>
<tr>
<td>Ideal standard deviation</td>
<td>22.67</td>
</tr>
</tbody>
</table>

4.1.1 Testing of Research Data Quality
Testing of data quality was done with the use of the tests of normality, linearity, autocorrelation, and multicolinearity with the results that all the variables met the conditions of analysis.

A. Testing of Normality
Testing of data normality was conducted to show that the sample was taken from the sample with a normal distribution. The technique used to test normality was Liliefors' formula.
The hypotheses proposed in the normality test were:

H₀: Data are from the population without a normal distribution.
H₁: Data are from the population with a normal distribution.
The testing criteria are, if the $L$ observed $> L_{\text{table}}$ at the significance level of 95%, then $H_0$ is rejected or by comparing the value of $L_{\text{count}}$ derived at the significance level $\alpha$ 5% (0.05). If the value of $L_0 > 0.05$, then the sample was from the population with a normal distribution. The testing of normality was conducted using the SPSS program. The description of the tested data is presented in Table 2:

Table 2. Description of data normality testing

<table>
<thead>
<tr>
<th>Variable</th>
<th>Liliefors</th>
<th>Normality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incentive reward (X1)</td>
<td>241</td>
<td>0.0100</td>
</tr>
<tr>
<td>Teacher psychological Competence (X2)</td>
<td>241</td>
<td>0.0405</td>
</tr>
<tr>
<td>School principal leadership (X3)</td>
<td>241</td>
<td>0.0376</td>
</tr>
<tr>
<td>Work motivation (X4)</td>
<td>241</td>
<td>0.0319</td>
</tr>
</tbody>
</table>

Liliefors Significance Correction  
*This is a lower bound of the true significance

Table 2 shows that the calculation indicated that the sample of all the variables of the population had a normal distribution. Therefore, the first assumption in the path analysis was confirmed.

B. Linearity Testing

Linearity testing was conducted using the Tuna Cocok formula with the equation of linear regression. The hypotheses proposed in the linearity testing were:

$H_0$ Linear regression.  
$H_1$ Non-linear regression.

The criteria for rejecting the hypothesis in the linear regression model are that if $F_{\text{count}} \geq F(1- \alpha)(k-2, n-k)$ at the significance level of 95% or by comparing the $F_{\text{TC}}$ value with $F_{\text{table}}$ at the significance level of $\alpha$ .05, if the $F_{\text{TC}}$ value is $\leq F_{\text{table}}$ in the linear regression whereas if $F_{\text{TC}} \geq F_{\text{table}}$ then the regression model is not linear.

The data linearity testing was conducted by using the SPSS program. The description of the test results is presented in Table 3:
Table 3. Description of the data linearity testing

<table>
<thead>
<tr>
<th>No</th>
<th>Correlation</th>
<th>N</th>
<th>(dk-2)</th>
<th>JK Mean (JKM) TC</th>
<th>Deviation</th>
<th>FTC (Fcount)</th>
<th>Ftable</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>X1→X4</td>
<td>241</td>
<td>68</td>
<td>239.40</td>
<td>197.24</td>
<td>1.21</td>
<td>1.37</td>
<td>Linear</td>
</tr>
<tr>
<td>2</td>
<td>X2→X4</td>
<td>241</td>
<td>61</td>
<td>224.10</td>
<td>175.61</td>
<td>1.28</td>
<td>1.42</td>
<td>Linear</td>
</tr>
<tr>
<td>3</td>
<td>X3→X4</td>
<td>241</td>
<td>79</td>
<td>189.74</td>
<td>182.15</td>
<td>1.04</td>
<td>1.37</td>
<td>Linear</td>
</tr>
</tbody>
</table>

Table 3 shows that the regression model for all the variables in the research was linear and therefore the second assumption in the path analysis was verified.

C. Autocorrelation Testing

Autocorrelation testing was conducted by applying the formula of Dubin-Watson (DW) as follows:

\[ d = \frac{\sum_{t=2}^{T} (e_t - e_{t-1})^2}{\sum_{t=1}^{T} e_t^2} \]

The testing criteria were: There is no autocorrelation if the DW value is between 1 and 3 or, in other words, if the Durbi Watson value is smaller than 1 or greater than 3, then there is autocorrelation. Based on the above calculation of the measurement of the data, it was found out that the DW value for dependent X4 was 1.842, which means that the results of measuring the variables indicated that there was no effect of autocorrelation.

D. Multicollinearity Testing

Multicollinearity testing was conducted to find out if the intervariable correlation was causal or not. The multicollinearity was tested by applying the formula of Factor Inflation Variance (FIV) as follows:

\[ VIF_m = \frac{1}{1 - R_m^2} \]

Where:
FIV_m = factor inflation variance
m = number of variable predictors
R_m^2 = multiple correlation of variable predictors (m)
Based on the calculation by using the SPSS series 18, the value of FIV for the dependent variable X4 was obtained in the X4 equation as follows: $X_4 = 7.825 + 0.411X_1 + 0.169X_2 + 0.249X_3$. The calculation is presented in Table 4:

**Table 4. Calculation of multicolinearity testing**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>FIV</th>
<th>Significance level (α = 0.05)</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>0.411</td>
<td>1.301</td>
<td>p &lt; 0.05</td>
<td>1 &lt; FIV &lt; 10</td>
</tr>
<tr>
<td>X2</td>
<td>0.169</td>
<td>1.281</td>
<td>p &lt; 0.05</td>
<td>1 &lt; FIV &lt; 10</td>
</tr>
<tr>
<td>X3</td>
<td>0.249</td>
<td>1.296</td>
<td>p &lt; 0.05</td>
<td>1 &lt; FIV &lt; 10</td>
</tr>
</tbody>
</table>

The results indicated that there was no multicolinearity among the predictor variables or exogeneous variables in this model.

**4.1.2 Hypothesis Testing**

The calculation using the AMOS 18 program indicated the path coefficient of each exogeneous variable on the endogeneous variable as displayed in Table 5:

**Table 5. Description of the calculation of path coefficients**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Correlation</th>
<th>Effect on Variable X4</th>
<th>Unidentified Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Direct Effect</td>
<td>Indirect Effect</td>
<td>Total</td>
</tr>
<tr>
<td>X1</td>
<td>0.578</td>
<td>0.411</td>
<td>0.411</td>
</tr>
<tr>
<td>X2</td>
<td>0.405</td>
<td>0.169</td>
<td>0.169</td>
</tr>
<tr>
<td>X3</td>
<td>0.484</td>
<td>0.249</td>
<td>0.249</td>
</tr>
</tbody>
</table>

Based on the description of the calculation of the path coefficient presented in Table 5, it was concluded that the incentive reward (X1) had a direct effect on teacher work motivation (X4) with the value of 0.411 and correlation coefficient of 0.578, which means that there was a medium or adequate correlation. The direct effect of teacher psychological competence (X2) on work motivation (X4) was 0.169 with the correlation coefficient of 0.405, which means that there was a medium or adequate correlation. The direct effect of school principal leadership (X3) on teacher work motivation (X4) was 0.249 with the correlation coefficient of 0.484, which means that there was a medium or adequate correlation. Based on the calculation of the path coefficient, the path equation was $X_4 = 0.411X_1 + 0.169X_2 + 0.249X_3$ and so the path diagram can be drawn as follows:
The results of making a calculation using the formula and entering the values of correlation coefficients can be seen in Table 6:

**Table 6. Description of correlation coefficients, path coefficients and significance**

<table>
<thead>
<tr>
<th>Correlation Coefficient</th>
<th>Path Coefficient</th>
<th>tcount</th>
<th>ttable α= 0.05</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>$r_{14} = 0.578$</td>
<td>$P_{41} = 0.411$</td>
<td>11.024**</td>
<td>1.97, 2.33</td>
<td>Very significant path</td>
</tr>
<tr>
<td>$r_{24} = 0.405$</td>
<td>$P_{42} = 0.169$</td>
<td>6.875**</td>
<td>1.97, 2.33</td>
<td>Very significant path</td>
</tr>
<tr>
<td>$r_{34} = 0.484$</td>
<td>$P_{43} = 0.249$</td>
<td>9.761**</td>
<td>1.97, 2.33</td>
<td>Very significant path</td>
</tr>
</tbody>
</table>

** very significant

Based on the description of the calculation in Table 6, it was found that the value of $t_{count}$ of three path coefficients was greater than the $t_{table}$ value at $\alpha = 0.05$ and so it can be concluded that the three path coefficients were very significant.

### 4.2 Discussion

1. **Analysis of the Effect of Incentive Reward on Teacher Work Motivation**

Incentive reward is an effort or approach by an organization to provide a fringe benefit to motivate its employees to work more seriously and enthusi-
The correlation between incentive reward and work motivation has been an interesting issue among experts on organizational behavior. In research, it has been shown that the incentive reward in the form of salary, secondary allowance, and fringe benefit is intended to motivate employees to work better or improve their performance. A performance-based incentive has an effect on the improvement of teacher motivation to have more productivity, however, not all teachers can be motivated only by financial benefit. This is in line with the views of Odden (2000:361), which imply that a teacher who is not motivated by a financial reward can be empowered by being given a non-financial reward. Khan, Farooq and Ullah (2010:49) conducted research on several aspects related to motivating employees to perform better. Their findings confirmed the results of research done by experts, which suggested that the variable of incentive reward statistically had a direct effect on teacher work motivation with the value of 0.411 or 41%. The change in the variable of work motivation of senior high school teachers was due to the variable of incentive reward, whereas the remaining 59% was determined by other factors beyond the model. The direct contribution of incentive reward to improved teacher work motivation was great and significant. As a result, incentive reward for teachers was a good predictor of work motivation improvement.

2. Analysis of the Effect of Teacher Psychological Competence on Work Motivation

Besides the variable of incentive reward, another variable was assumed to have a direct effect such as teacher psychological competence. The psychological competence that the teacher demonstrates can influence his success in conducting the learning process, which in turn affects his students. If the teacher has a stable and good personality, he will become a model figure for his students and he will be the person whose attitude and behavior should be imitated. Psychological competence is closely related the manners of the teacher as an individual who is expected to possess discipline, a good appearance, responsibility, commitment and enthusiasm and so he will be regarded as a model figure. Depdiknas (2004:4) talked about psychological competence as a personal competence which is the individual ability of the teacher as a requirement to be a good teacher.

The research findings show that the teacher psychological competence had a positive, direct effect on work motivation, with the path coefficient of 0.169. The analyzed data indicated that 17% of the work motivation variable could be influenced by the variable of teacher psychological competence. The remaining 83% of the effect was determined by other factors beyond this model.
3. Analysis of the Effect of School Principal Leadership on Work Motivation

The formation of teacher work motivation is a combination of many factors such as commitment, school environment, personality development, teacher motivation, etc. All the factors have a direct and indirect effect on actions that will be taken by a school principal. Obi (2002:20) stated that to become a successful leader, a school principal should pay full attention to programs of staff employment through techniques and procedures that are designed to make the teacher work motivation better. Based on the findings, there was a positive, direct effect of school principal leadership on teacher work motivation at the value of 0.249 or 25%. This means that 25% of teacher work motivation was influenced by the variable of school principal leadership while the other 75% was affected by other variables beyond this model.

5. Conclusions and Suggestions

5.1 Conclusions

Based on the previous description and the findings in the analysis as well as the discussion presented, the conclusions of the research are as follows:

1. Incentive reward has a positive, direct and significant effect on the work motivation of Senior High School teachers in Medan at the value of 0.411 for the path coefficient. This implies that to improve the work motivation of the Senior High School teachers in Medan, adequate incentive reward should be provided. The value of the direct contribution of incentive reward to teacher work motivation is 0.411 or 41%. The remaining 59% is influenced by other factors beyond the model.

2. The effect of teacher psychological competence on the work motivation of the Senior High School teachers in Medan, based on the research findings, can be concluded as that the teacher psychological competence is considered adequate. This indicates that the teachers of SHS basically have met one of the criteria required by the Laws No.14 Article 10, 2005, concerning teachers and lecturers in which teachers should possess good psychological competence. Teacher psychological competence has a positive, direct and significant effect on the work motivation of the SHS teachers in Medan at the value of 0.169 for the path coefficient. The value of the direct contribution of teacher psychological competence to the work motivation of the SHS teachers in Medan is 0.169 or 17%. The remaining 83% is influenced by other factors beyond the model.
3. The effect of school principal leadership on the work motivation of the SHS teachers in Medan based on the research findings can be concluded that the school principal leadership was considered adequate. This means that in general the school principal leadership among the SHS teachers in Medan was good enough. The school principal leadership is one of the indicators that is very influential in the efforts to enhance teacher work motivation to accomplish school goals. The findings showed that school principal leadership has a positive, direct and significant effect on the work motivation of the SHS teachers in Medan at the value of 0.249 for the path coefficient. The value of the direct contribution of the school principal leadership to the work motivation of the SHS teachers in Medan is 0.249 or 25%. The remaining 75% is influenced by other factors beyond the model.

5.2 Suggestions
Based on the conclusions, the following suggestions are made to realize the improvement of the work motivation of the teachers that it is necessary to design a policy and training programs for teachers and principals for their maximization and conditioning of school principal leadership, improvement of teacher psychological competence and work motivation through workshop and training activities as well as seminars for all principals and teachers. It is necessary to design a policy about a system of incentive reward and appreciation for teachers, especially those who have achieved much and perform well for the purpose of performance-based career development and job promotion. Meanwhile, there are also some suggestion for principals and teachers.

1. For School Principals of SHS
   a. To develop transformation, the strategy applied is by selecting and employing qualified staff who are free from nepotism, building solidarity and collegial leadership through efforts to promote human resources development, transparency, social welfare of teachers and the optimal engagement of all the resources available.

2. For Senior High Schools (SHS) teachers
   a. To improve and implement teacher psychological competence by setting good examples to students, showing great responsibility in doing their jobs, communicating politely, acting according to the existing norms, having discipline at work, demonstrating patience and respecting the code of ethics in professional conduct.
b. To work harder based on the job descriptions established and build a collaboration with school principals and teachers for the purpose of broadening their horizons in doing their jobs as expected.

References
The Complex Relationship between Teachers’ Mathematics-related Beliefs and Their Practices in Mathematics Class

Abstract
Mathematics-related beliefs play an important role in giving a teacher directions for taking decisions and for their behavior in a mathematics class. Therefore, the purposes of this research are to reveal the profile of teachers’ mathematics-related beliefs, the consistency among belief dimensions, teachers’ practical profile in a mathematics class, and the consistency between beliefs and teachers’ practices in a mathematics class. This research used surveys with a cross-sectional design to collect data from 325 elementary school teachers in Jakarta. Teachers’ beliefs instruments and teachers’ practices in mathematics class were used to collect data. The findings of this research indicate that teachers tend to be constructivism-oriented but are not accompanied with suitable practices in mathematics class. Moreover, complex relationships also occur in both belief dimensions and in their relationships with the practices in a mathematics class.

Keywords: teacher beliefs, teacher practices, mathematics class, elementary school teachers

Introduction
The gap between education research and its practice is a critical issue which has become a matter of contention among researchers, practitioners, and policy-makers (Broekkamp & van Hout-Wolters, 2007; Vanderlinde & van Braak,
The Complex Relationship between Teachers’ Mathematics-related Beliefs

2010), including in the area of mathematics education research and the practices of mathematics in class. Many potential factors contribute to the gap. From the usability and the practical value of the researcher’s point of view, Broekkamp and van Hout-Wolters (2007) said that teachers’ negative belief about research is one of the potential factors, causing them to reluctantly apply it in class. As found in literature, belief is a variable which has a role in guiding someone to take decisions and to behave in class (Ernest, 1989; Purnomo, Suryadi, & Darwis, 2016). In other words, when fundamental theories and research suggestions are parallel with the teacher’s belief, then the belief will lead the teacher to apply it in class. A mathematics teacher plays an important role in creating meaningful mathematics learning to students. Besides content knowledge, pedagogical knowledge, and pedagogical content knowledge, the teacher’s mathematics-related beliefs become variables that also play a role in guiding that knowledge to create meaningful mathematics learning. This was illustrated by Ernest (1989) about the role of belief; he gave an example of two mathematics teachers, who potentially had the same knowledge, but perhaps one teacher taught mathematics through a problem-solving orientation and the other teacher had a more didactic approach.

The teachers’ beliefs system has multifaceted constructs. According to Ernest (1991), teachers’ mathematics-related beliefs cover beliefs about the nature of mathematics, beliefs about mathematics teaching, and their beliefs about assessment. Ernest (1989) stated that someone’s beliefs about the nature of mathematics are strongly related to mathematics philosophy as the discipline. When mathematics is considered as static knowledge or has an absolute validity which covers a set of rules, facts, or procedures used to get the right answer, teachers’ beliefs about teaching make them teach through a transmission model which is signed by exposure, exercising, and memorizing known as instrumental teaching. In other words, the teaching option taken is how to guide students to be skilled and efficient in procedural operations and symbol manipulations without understanding the meaning and the reason for it. Constructivism shows that in order to build knowledge, learners must actively build it by themselves either through experiences they have had or by interactions. Here, the teacher is the learning facilitator who provides the students with opportunities to be involved in meaningful mathematics problem solving.

Besides teachers’ beliefs about the nature of mathematics and mathematics teaching, responding to teachers’ beliefs about assessment is important to predict, to design, and to pick the rational decision to support the mathematics learning process (Purnomo, 2015). Assessment is a set of integral activities in the mathematical learning process which provides information for both teachers, who make
the teaching decisions, and students to know the learning progress and to reflect on certain points that need to be leveled up (Purnomo, 2015, 2016b). As assessment is an integral part of the learning process, Delandshere and Jones (1999) said that when learning is believed as facts, rules, and skills acquisition, assessment tends to be looked at as a way to give sanctions and verifications. On the other hand, if learning is believed to be a continuous building process strengthened by structural, purposeful, and educational experiences, then assessment tends to be perceived as documentation and feedback provision. Therefore, besides the beliefs of the nature of mathematics and mathematics teaching itself, it is important to respond to teachers’ beliefs of assessment in mathematics learning.

The teacher’s mathematics-related beliefs are built from the early days on, when they acquire experience, especially school experience, and peak when they gain experience at the college level. Regarding this, the education for elementary school teacher candidates in college does not specifically include mathematics. Therefore, this research focused on examining elementary school teachers’ beliefs so that we could generate ideas and suggestions for elementary school teacher preparation at the college level.

In the literature, previous studies examined the relationship between the teacher’s mathematical beliefs and their teaching practices in mathematics class (Stipek, Givvin, Salmon, & MacGyvers, 2001; Wijaya, van den Heuvel-Panhuizen, & Doorman, 2015). There are also studies that have examined the relationship between beliefs about assessment and assessment practices in class (Azis, 2014; Calveric, 2010). Nevertheless, there is a lack of large-scale studies which comprehensively examine the relationship between belief variables (i.e., the nature of mathematics, teaching and learning, and assessment), as well as their relationship with the practice of teaching and assessment in a mathematics class. Stipek et al. (2001) examined the relationship between teachers’ beliefs about mathematics, teaching and learning, and their relation to the teaching and assessment practices. However, these studies do not focus on assessing beliefs about assessment and its relation to assessment practices in mathematics class. Furthermore, there are also few literature findings in studies that examine teachers’ beliefs and practices in mathematics class in the context of teachers in Indonesia. For these reasons, this research endeavored to contribute both theoretical and empirical knowledge as a complement to previous studies.

This research aimed to reveal teachers’ mathematical belief profile, consistency among belief dimensions (factor), teachers’ practical profile in a mathematics class, and consistency between beliefs and the teacher’s practices in mathematics class. For these purposes, four research questions will be discussed: (1) What are the mathematic-related beliefs that tend to be held by teachers? (2) Is there
any consistency among suitable belief factors held by teachers? (3) What is the teacher’s practical tendency in mathematics class? (4) Do teachers’ practices in the mathematics class reflect what they believe?

**Method**

**Participants**

The research used a survey with a cross-sectional design. The sample included 325 elementary school teachers (69 public schools and 6 private schools) in East Jakarta during the 2015/2016 school year, who were selected conveniently. This method was chosen because it was not expensive, was not time-consuming, and was easily administered. It was started by choosing one of six cities in Jakarta. Then, the elementary schools in that selected city were selected randomly. Next, the teachers of those selected schools participated conveniently. The participants consisted of 80.9% female and 17.5% male teachers, while 1.5% of those were not clear. 12.3% of the participants had 3 years or less of teaching experience, 22.2% had 4–10 years of experience, 21.8% had 11–20 years of experience, 4.6% of them had more than 20 years of experience, and 3.1% of them were not clear.

**Instrument and procedure**

The instruments of this research were two questionnaires: teachers’ mathematics-related beliefs and teachers’ practices in a mathematics class. Belief and practice scales were developed according to the literature and analyzed by factor analysis. An exploratory factor analysis was used to build the factor structure and then confirmed by a confirmatory factor analysis. The detailed analysis of those statistics could be found in Purnomo (2016a). The questionnaire of teachers’ mathematic-related beliefs consisted of three subscales. There were 9 items for beliefs about the nature of mathematics (BNM), 11 items for beliefs about the teaching of mathematics (BTM), and 10 items for beliefs about the assessment of mathematics learning (BAM). All the subscales had adequate construction validity (convergent and discriminant validity). The alpha coefficient ranged from 0.715 to 0.787, so it had an adequate internal consistency coefficient. On the other hand, the questionnaire of practice in a mathematics class covered 11 items for teaching practice (TP) in mathematics class and 11 items for assessment practice (AP) in mathematics class. Construction validity for each subscale of teachers’ practice in mathematics class was at a good level. Internal consistency was also above the adequate level, which was in the range of 0.704 to 0.742 for each subscale.
Data Analysis

The first and third questions were analyzed using descriptive statistics such as mean, standard deviation, and mean range. In order to see the data tendency from every factor, a t-test with a 5% significance level was conducted. The effect size (ES) was also used to complete and see how big the impact was. The Spearman correlation test was performed to find out the consistency among the belief factors and to reveal the consistency between the beliefs the teachers held and the practice conducted in the mathematics class.

Results

Research question 1:
What are the mathematics-related beliefs that tend to be held by teachers?

The data for dynamic factor at BNM are negated first and given the absolute label. The results of the analysis are presented in Table 1.

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Factor</th>
<th>Mean</th>
<th>SD</th>
<th>Mean range of items</th>
<th>Mean comparison</th>
<th>ES</th>
</tr>
</thead>
<tbody>
<tr>
<td>BNM</td>
<td>Relevant</td>
<td>5.012</td>
<td>0.569</td>
<td>4.594–5.432</td>
<td>t(322) = 13.849; p = 0.000</td>
<td>0.771</td>
</tr>
<tr>
<td></td>
<td>Absolute</td>
<td>4.072</td>
<td>1.130</td>
<td>3.970–4.272</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTM</td>
<td>Relational</td>
<td>5.032</td>
<td>0.474</td>
<td>4.836–5.352</td>
<td>t(317) = 8.950; p = 0.000</td>
<td>0.502</td>
</tr>
<tr>
<td></td>
<td>Instrumental</td>
<td>4.635</td>
<td>0.748</td>
<td>4.484–4.849</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAM</td>
<td>Integrated</td>
<td>5.122</td>
<td>0.458</td>
<td>4.478–4.897</td>
<td>t(317) = 10.646; p = 0.000</td>
<td>0.597</td>
</tr>
<tr>
<td></td>
<td>Isolated</td>
<td>4.782</td>
<td>0.628</td>
<td>4.997–5.270</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As presented in Table 1, the teachers’ beliefs about the nature of mathematics are more dominated by their view about relevant mathematics than their absolute view (p-value < 0.05). This difference is also supported by the ES score of 0.771, which can be considered as a large difference. A significant difference (p-value < 0.05) also occurs on the teachers’ belief factors about teaching. The findings indicate that the participants tend to have a more relational teaching view than an instrumental one. An ES score of 0.502 shows that the size of the difference between them is medium. Meanwhile, the BAM that is held by the teachers is dominated by a view that assessment is an integral part of the learning process. The significant difference is shown by the p-value < 0.05 and this medium sized difference is shown by the ES score of 0.597.
Research question 2:  
Is there any consistency among suitable belief factors? 

The Spearman correlation analysis was chosen to see the relationship among the belief factors. The results of the analysis are shown in Table 2.

Table 2. Correlation among factors on the belief scale

<table>
<thead>
<tr>
<th>Sub-scale</th>
<th>Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>BNM</td>
<td>1 (Relevant)</td>
<td>1</td>
<td>-0.137*</td>
<td>0.016</td>
<td>0.068</td>
<td>0.107</td>
<td>-0.043</td>
</tr>
<tr>
<td></td>
<td>2 (Dynamic)</td>
<td>1</td>
<td>0.020</td>
<td>0.042</td>
<td>0.019</td>
<td>0.045</td>
<td></td>
</tr>
<tr>
<td>BTM</td>
<td>3 (Relational)</td>
<td>1</td>
<td>0.238**</td>
<td>0.270**</td>
<td>0.137*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 (Instrumental)</td>
<td>1</td>
<td>0.250**</td>
<td>0.226**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAM</td>
<td>5 (Integrated)</td>
<td>1</td>
<td>0.435**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 (Isolated)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Based on Table 2, consistency is shown by a significant correlation between the relational factor and the integrated factor at the 1% level of significance. A significant correlation is also shown by the instrumental teaching factor and the isolated factor at the 1% level of significance. On the other hand, the dynamic and relevant factors in the BNM subscale both have a weak correlation to other factors. Nevertheless, those two factors have a significant negative correlation (α = 5%) as indicated by the correlation coefficient value of -0.137. A significant correlation among factors in the same subscale also occurs on BTM and BAM. The relational factor correlates positively with the instrumental factor (α = 5%). A similar result is shown by the integrated factor which has a significant correlation with the isolated factor (α = 1%). This result also implies logically with the correlation among the results of factor analysis which indicate inconsistency among belief factors such as between the relational and the isolated factor as well as the instrumental factor and the integrated factor.

Research question 3:  
What is the teacher’s practical tendency in mathematics class?

The analysis to answer the third question is similar to what was conducted to answer the first question. The results of the analysis are shown in Table 3.
Table 3. Comparison of factors on TP and AP in mathematics class

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Factor</th>
<th>Mean</th>
<th>SD</th>
<th>Mean range of items</th>
<th>Mean comparison</th>
<th>ES</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP</td>
<td>Instrumental</td>
<td>4.324</td>
<td>0.469</td>
<td>4.100–4.540</td>
<td>t(324) = 17.862;</td>
<td>0.991</td>
</tr>
<tr>
<td></td>
<td>Relational</td>
<td>3.619</td>
<td>0.593</td>
<td>3.357–3.969</td>
<td>p = 0.000</td>
<td></td>
</tr>
<tr>
<td>AP</td>
<td>AoL</td>
<td>4.477</td>
<td>0.449</td>
<td>4.158–4.676</td>
<td>t(322) = 25.225;</td>
<td>1.404</td>
</tr>
<tr>
<td></td>
<td>AfL</td>
<td>3.347</td>
<td>0.714</td>
<td>3.053–3.622</td>
<td>p = 0.000</td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table 3, the TP profile is intended more to emphasize an instrumental practice than a relational one. The difference is significant due to the p-value which is less than 0.05 and has a large-sized difference because the ES score is 0.991. A significant and very large difference is also found at the AP. The significant difference is shown by the p-value, which is less than 0.05, and a very large-sized difference is shown by the ES score, which is 1.404. In other words, AP conducted by the teacher tends to be AoL practice than AfL in mathematics class.

Research question 4: Do the practices in the mathematics class reflect the beliefs held by the teachers?

The analysis using the Spearman correlation was conducted to find out the correlation between the beliefs and the practices in mathematics class. The results of the analysis are presented in Table 4.

Table 4. Correlation between belief factors and practice factors.

<table>
<thead>
<tr>
<th>Beliefs</th>
<th>Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TP</td>
</tr>
<tr>
<td></td>
<td>Factor</td>
</tr>
<tr>
<td>BNM</td>
<td>1. Relevant</td>
</tr>
<tr>
<td></td>
<td>2. Dynamic</td>
</tr>
<tr>
<td>BTM</td>
<td>3. Relational</td>
</tr>
<tr>
<td></td>
<td>4. Instrumental</td>
</tr>
<tr>
<td>BAM</td>
<td>5. Integrated</td>
</tr>
<tr>
<td></td>
<td>6. Isolated</td>
</tr>
</tbody>
</table>

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

Based on Table 4, there seem to be some consistencies between the beliefs and practices in the mathematics class shown by (1) the relevant factor and the relational teaching practice factor; (2) the relational factor and the relational teaching...
practice factor; and (3) the isolated factor and the instrumental practice. On the other hand, an inconsistency can be shown by the significant correlation ($\alpha = 5\%$) between the instrumental teaching practice and the relevant factor at the BNM. The instrumental teaching practice also has a correlation with the irrelevant factor; there is an integrated factor at the BAM. Some other inconsistencies can be seen by the significant correlation between the AfL practice to instrumental factor at the BTM and the integrated factor at the BAM.

**Discussion**

The research results indicate that the participants in this study tend to hold the belief of constructivism, either on their belief about the nature of mathematics, mathematics teaching, or about the assessment in mathematics learning. It is parallel with the results from earlier research (Purnomo et al., 2016; Wijaya et al., 2015), which similarly indicated that teachers tend to have a constructivism view. Nevertheless, the teachers’ responses are not fully consistent in one category. For example, in this research, the teachers tend to agree that mathematics teaching is important to understand the relevant problem and context, but on the other hand, they also agree that mathematic problem solving should be done quickly and instantly. The other contradiction in one category can also be found in the beliefs about the nature of mathematics and assessment in mathematics class. The contradiction can also be verified by looking at the significant correlation among factors in one category. Moreover, the analysis found a complex correlation among the teachers’ beliefs, on the one hand there are consistencies among suitable beliefs, but on the other hand, there are some inconsistencies among suitable beliefs.

Complexity also occurs in the correlation between belief and practice in a mathematics class where the teachers’ practices in a mathematics class do not always reflect the beliefs they hold. On the one hand, the teachers in this study tend to hold the belief of being constructivism-oriented, but on the other hand, they tend to use more traditional practices. The teachers appear more inclined towards instrumental teaching practice than relational practice. Instrumental teaching practice is identical with result-based learning than process-based teaching, so it often ignores relevant learning by the students’ context. This finding strengthens earlier findings from research on Indonesian teachers’ teaching practices in mathematics class (Purnomo, Kowiyah, Alyani, & Assiti, 2014; Purnomo et al., 2016; Wijaya et al., 2015), where it was found that teachers’ practices are more dominated by mechanistic practices. Wijaya et al. (2015), through class observation, found out
that mathematics teachers tend to teach through directive approaches. Teachers are more dominating during the learning activity in class by giving problems, telling what should be done, and focusing on the mathematics solution without linking it to the context of the problem. Furthermore, teachers also tend to do traditional assessment in the mathematics class. Traditional assessment practices refer to the practices that focus more on formality and accountability aspects than on relevant learning practices or students’ context. The teachers in this study tend to use summative tests as a part of the assessment and give marks and scores on the students’ worksheets as a form of feedback to the students. Some researchers (Purnomo, 2015, 2016b) agree that feedback, e.g. constructive comments, is more desirable and has a more positive impact on the students than giving marks or scores. Moreover, the teachers are also usually more intent on using external assessment standards than suitable standards for the students’ real conditions. This surely separates assessment and learning.

Although the results of this research indicate that there are consistencies between the beliefs and practices of several factors, it is mostly dominated by inconsistencies between beliefs and practices in mathematics class. Similar findings can be found in earlier research (Purnomo et al., 2016; Raymond, 1997), revealing that the correlation between beliefs and practices is a complex correlation. Possible factors that potentially contribute to the inconsistencies between beliefs and practices can come from either internal or external factors. Some potential indications of internal factors are (1) the teachers’ knowledge about the philosophy of mathematics and the learning perspective; (2) the teachers are hesitant to break their habits. The learning they conduct just focuses on fixed references (books or curriculum), causing the teachers to often think more of the risks than think of the relevant object or the learning context for the students; (3) mathematics knowledge for teaching. When the belief is not accompanied by the knowledge about how the content should be taught, the practice tends to follow experiences and fixed rules; and (4) experience, especially experience from becoming a student in school. Furthermore, the teachers also have a complex position so the practices conducted are often influenced by external factors, such as time pressure, curriculum, social norm, and learning environment. Another external factor is high-stake accountability. Policy implementation often forces the teacher to adjust their practices to the rules which are often irrelevant to the context in the field. Excessive emphasis on result-based accountability causes educational stakeholders to ignore the process and at the end to fail to achieve the expected results, but also to go through an irrelevant process in the context.
Conclusion

The results of this research indicate that the teachers’ beliefs are dominated by beliefs leading to a constructivism view. Nevertheless, there is some evidence that the teachers’ responses do not always consistently fall in one category. This research also finds complex correlations among belief dimensions and the correlation with practices in mathematics class. The implication can be identified and emphasized in two elements. They are the government policy and teacher education program. Contradiction occurs when the government encourages teachers to develop the curriculum. However, it turns out that the government acts as the curriculum developer. Teachers in Indonesia tend to be the curriculum implementers, who wait for instructions as a form of their responsibility (cf. also Azis, 2014). Therefore, it is important for the government to try to understand and to build teachers’ beliefs, knowledge, and literacy, and to respond to every education policy they make. It is also important for teacher education and development programs in Indonesia to focus on building beliefs and mathematics knowledge for teaching, especially during the teacher candidate education period. The rational argument for this is that even though there is an excess of focus on the content of a mathematics curriculum, the way the content is taught to elementary school students should not be disregarded.

References


Abstract
This study examines secondary school teachers' level of emotional intelligence and their moral character as predictors of moral character among secondary school students in Ilorin South LGA, Kwara State. 106 teachers and 318 students from 20 secondary schools were purposively sampled for the study. Data collected were analysed using mean-scores, standard-deviation and multiple-regression. The study revealed that secondary school teachers' emotional intelligence predicts secondary school students' moral character. It was recommended that there is a need for teaching emotional intelligence as a foundation course at all the teacher training institutions in Nigeria.

Keywords: emotional intelligence, moral character, functionalist theory

Introduction
In the past few years, parents have questioned the process by which their children acquire moral character, which they exhibit in public. This is because of the depreciating nature of morality in society. It has become a serious problem as anti-social behaviour ranging from indecency, dishonesty, rape, kidnapping, corruption, impatience, to non-caring attitude of both the young and the elderly now prevail in the Nigerian society. The Nigerians are living in a condition where people no longer value what is ideal for society. People have become individualistic
and materialistic. There are also widespread lawlessness and insecurity to human lives across the country. Society expects the school to help their children become honest, decent, caring persons, who are capable of living good lives in the troubled world (Igbo & Anugwom, 2002). This has become the concern of educators, sociologists, and psychologists among others, as character development of an individual in society constitutes a critical means for the survival of society as its members learn the differences between right and wrong.

It is on this basis that Lapsley and Narvaez (2006) noted that an individual needs moral virtue in order to do what he/she knows he/she ought to do. As humans, however, we are born with robust moral virtues, which must be developed through interactions that enable us to guide our emotions, thus developing our characters.

The stated goal of moral character development of a nation lies in proper education, training or teaching of its younger generation, in preparing the young to fare better in life. Proper education is not only taking instruction in school subjects, but it should include an understanding of the emotions of the child. Being emotionally intelligent is as important as learning any other subjects. In this study, emotional intelligence means the ability to retain emotional impulses, to read other person’s innermost feelings and to handle relationships smoothly (Goleman, 1996). The ability to control impulses is the basis of character. Goleman (1995) says there is an old-fashioned word for the body of skills that emotional intelligence represents: character. Who will, then, take the responsibility for creating a nation whose foundation is character? The simple response is ‘the teacher’ (Ryan & Bohlin, 1999). According to Campbell (2003), the teacher is considered to play the central role in cultivating character by inculcating self-discipline and empathy in learners.

Berkowitz and Bier (2004:48) point out that moral character is “an individual’s set of psychological characteristics that affect such a person’s ability and inclination to function morally”. In the same view, Damon (1988) identifies six ways in which social scientists have defined morality: (1) an evaluative orientation that distinguishes good and bad and prescribes good; (2) a sense of obligation toward standards of a social collective; (3) a sense of responsibility for acting out of concern for others; (4) a concern for the rights of others; (5) a commitment to honesty in interpersonal relationships; and (6) a state of mind that causes negative emotional reactions to immoral acts. These are the complete characteristics of a morally sound citizen of a society (Bull, 1973). By implications, the character of a morally sound individual is built on these definitions. How, then, can the teacher help students in the achievement of these?
In the view of Bastian (2003), the character of an individual is built on emotions. This is because emotions are internal processes possessing a distinctive, individual quality. What makes one distinctly human is one’s ability to reason and experience emotions. According to the International Conference on Emotional Intelligence and Leadership (2002), the energy received from emotions helps to “direct, protect or guide” one. Emotions are “messengers” which provide one with information about the outside world (Bull, 1973). There is little wonder that Elisa and Arnold (2006) claimed that an emotionally intelligent teacher will be a better guide for children.

This view lends credence to the study of Walker (2001), whose finding revealed that highly emotionally intelligent teachers display good moral character, and to a large extent influence the moral character of their students. In essence, the greatest asset of a nation’s education system would be its emotionally intelligent teachers, who are instrumental to shaping future leaders’ moral character. They do this by displaying sound morality to students to emulate and imitate. Highly emotionally intelligent teachers are also considered as very vital to nation building by producing tolerant and more responsible and compassionate future citizens (Berkowitz, 1995).

Emotional intelligence provides the individual with knowledge such as empathy, self-control, stress tolerance, emotional awareness, self-regard, social awareness, self-management, relationship management and social skills needed for moral formation in every individual as well as skills that influence one’s ability to succeed in coping with environmental demands and pressure. In essence, emotional intelligence is not considered as the only variable responsible for character formation but the integration of other agents in society. What corroborates this is the research of Bandura (1977 and 1991), which revealed that moral character formation occurs gradually from interaction with the environment, including the application of consequences, the observation of models, and acculturation by social agents. These are what sociologists of education, like Durkheim, Meighan, Blakemore and Cooksey among others, considered as the socialization process.

Similarly, most studies on emotional intelligence basically concern the relationship between academic performance of different classes or groups of people in the school setting. There seem to be few studies on emotional intelligence from the sociological perspective. Thus, it is imperative to conduct this study.
Purpose of the Study

The main purpose of this study was to examine teachers’ emotional intelligence and their moral character as predictors of secondary school students’ moral character. Specifically the study assessed:

a. the level of emotional intelligence of teachers teaching at secondary school.
b. the moral character displayed by secondary school teachers.
c. the moral character displayed by secondary school students.
d. teachers’ emotional intelligence and their moral character as predictors of secondary school students’ moral character.

Research Questions

The following research questions were formulated to guide this study.

a. What is the level of emotional intelligence of teachers teaching at secondary school?
b. What are the types of moral character displayed by secondary school teachers in Ilorin South local government?
c. What are the types of moral character displayed by secondary school students?

Research Hypothesis

Ho1: Teachers’ emotional intelligence and their moral character are not predictors of secondary school students’ moral character.

Methodology

A descriptive survey design was used in this study. The choice of the descriptive survey was in line with the view of Sambo (2008), who maintained that the descriptive survey concerns the gathering of information on people’s opinions. The target population for this study comprised Ilorin South secondary school teachers and students. There were 20 secondary schools in Ilorin South Local Government, out of which 15 secondary schools were purposively sampled for the study. 106 teachers and 318 students were sampled from the 15 secondary schools using
a proportionate sampling technique. The respondents consisted of both male and female teachers and students. The teachers assessed their own level of emotional intelligence, while the moral character they displayed in school was assessed by 318 students (i.e., three students to a teacher, the average sum of three students was used to compute the analysis). The moral character displayed by the students was assessed by their class teachers.

Three questionnaire forms were used to elicit the needed data for this study. The first questionnaire form was a modified four-point Likert scale “Emotional Intelligence Scale,” which was adapted from the study of Goldman (1996). Its psychometric properties were content and construct validity and a reliability index of 0.68. The questionnaire was sub-divided into two sections. Section A dealt with demographic characteristics of the teachers, while section B contained 25 items, which dealt with statements that addressed emotional intelligence. The sub-themes were self-awareness, self-management, social awareness and regulation management.

The second questionnaire form, titled “My Teacher’s Assessment Questionnaire (MTAQ),” contained 19 items with psychometric properties of construct validity and the reliability index of 0.60 was adapted by the researchers from the study of Narvaez and Lapsley (2003) to elicit data on the teachers’ moral character. Finally, a 25-item questionnaire form, titled “My Students’ Assessment Questionnaire (MSAQ),” was adapted from the study of Schonert-Reichl, Lawlor, Oberle & Thomson (2009), with construct validity and 0.77 reliability index. It was used to collect the needed data from the students on the types of moral character displayed by the teachers. The hypothesis formulated was analyzed using Multiple Regression analysis at the 0.05 level of significance.

**Results**

The data collected are presented below.

**Research Question 1:** What is the level of emotional intelligence of teachers teaching at secondary school?

**Table 1.** Level of emotional intelligence of secondary school teachers in Ilorin South

<table>
<thead>
<tr>
<th>Levels of EI</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>95</td>
<td>89.6%</td>
</tr>
<tr>
<td>Low</td>
<td>11</td>
<td>10.4%</td>
</tr>
<tr>
<td>Total</td>
<td>106</td>
<td>100%</td>
</tr>
</tbody>
</table>
This shows that 89.6% (95) of the teachers have a high level of emotional intelligence while 10.4% (5) of the teachers have a low level of emotional intelligence. This implies that the secondary school teachers have a high level of emotional intelligence.

**Research question 2:** What are the types of moral character displayed by Ilorin South teachers?

**Table 2.** The types of moral character displayed by teachers

<table>
<thead>
<tr>
<th>S/N</th>
<th>Statement</th>
<th>Mean</th>
<th>Std</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>is honest in his/her dealing with students</td>
<td>3.415</td>
<td>0.566</td>
<td>High</td>
</tr>
<tr>
<td>2</td>
<td>is trustworthy in his/her dealing with students</td>
<td>3.367</td>
<td>0.574</td>
<td>High</td>
</tr>
<tr>
<td>3</td>
<td>has sound moral character and always stands up for what is right.</td>
<td>2.971</td>
<td>0.668</td>
<td>High</td>
</tr>
<tr>
<td>4</td>
<td>is caring/compassionate/benevolent to students and everybody around him/her</td>
<td>3.132</td>
<td>0.553</td>
<td>High</td>
</tr>
<tr>
<td>5</td>
<td>always obeys rules and regulations guiding the school.</td>
<td>2.981</td>
<td>0.850</td>
<td>High</td>
</tr>
<tr>
<td>6</td>
<td>always does what is right, even in the face of personal consequences</td>
<td>3.019</td>
<td>0.768</td>
<td>High</td>
</tr>
<tr>
<td>7</td>
<td>is able to stay calm and rational even under conditions of temptation.</td>
<td>3.141</td>
<td>0.668</td>
<td>High</td>
</tr>
<tr>
<td>8</td>
<td>is just and fair in dealing with students and colleagues at work.</td>
<td>2.830</td>
<td>0.710</td>
<td>High</td>
</tr>
<tr>
<td>9</td>
<td>always gets on well with students and staff.</td>
<td>3.122</td>
<td>0.580</td>
<td>High</td>
</tr>
<tr>
<td>10</td>
<td>never gives up easily; rather he/she keeps trying despite the hardship to achieve success</td>
<td>3.094</td>
<td>0.724</td>
<td>High</td>
</tr>
<tr>
<td>11</td>
<td>always keeps promises and is reliable</td>
<td>2.905</td>
<td>0.794</td>
<td>High</td>
</tr>
<tr>
<td>12</td>
<td>always considers the potentials for physical or emotional harm to others and avoids such harm.</td>
<td>2.905</td>
<td>0.781</td>
<td>High</td>
</tr>
<tr>
<td>13</td>
<td>is accountable, dependable, amenable; considers consequences and accepts responsibility for his/her own actions or inactions; does not shift blame for his/her own mistakes to others.</td>
<td>2.698</td>
<td>0.719</td>
<td>High</td>
</tr>
<tr>
<td>14</td>
<td>is able to identify with the feelings of his/her students to better understand them</td>
<td>2.924</td>
<td>0.726</td>
<td>High</td>
</tr>
<tr>
<td>15</td>
<td>is respectful towards others and students alike</td>
<td>2.858</td>
<td>0.773</td>
<td>High</td>
</tr>
<tr>
<td>16</td>
<td>is patient when dealing with students and people around him/her</td>
<td>2.952</td>
<td>0.773</td>
<td>High</td>
</tr>
<tr>
<td>17</td>
<td>forgives when he/she is offended</td>
<td>3.150</td>
<td>0.790</td>
<td>High</td>
</tr>
<tr>
<td>18</td>
<td>is ready to seek solutions to problems that will be in everyone’s best interests.</td>
<td>3.415</td>
<td>0.782</td>
<td>High</td>
</tr>
<tr>
<td>19</td>
<td>is a model for life values</td>
<td>3.367</td>
<td>0.743</td>
<td>High</td>
</tr>
</tbody>
</table>
Table 2 shows the mean score of the moral character which the teachers displayed in school with mean scores ranging from 2.60 to 3.14. Since these mean scores are above 2.00, the acceptable mean score level, it means that the teachers displayed high moral character because they are high in their emotional intelligence.

**Research question 3**: What are the types of moral character displayed by secondary school students?

<table>
<thead>
<tr>
<th>S/N</th>
<th>Statement</th>
<th>Mean</th>
<th>Std</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>plays and works cooperatively with other students at the level his/her age</td>
<td>1.93</td>
<td>0.24</td>
<td>Low</td>
</tr>
<tr>
<td>2</td>
<td>is able to interact with different students</td>
<td>1.99</td>
<td>0.09</td>
<td>Low</td>
</tr>
<tr>
<td>3</td>
<td>obeys rules and regulations</td>
<td>1.93</td>
<td>0.23</td>
<td>Low</td>
</tr>
<tr>
<td>4</td>
<td>respects the right of other students</td>
<td>1.84</td>
<td>0.35</td>
<td>Low</td>
</tr>
<tr>
<td>5</td>
<td>demonstrates self-control</td>
<td>1.87</td>
<td>0.32</td>
<td>Low</td>
</tr>
<tr>
<td>6</td>
<td>shows self-confidence</td>
<td>1.98</td>
<td>0.13</td>
<td>Low</td>
</tr>
<tr>
<td>7</td>
<td>demonstrates respect for adults and other students in the school</td>
<td>1.95</td>
<td>0.21</td>
<td>Low</td>
</tr>
<tr>
<td>8</td>
<td>accepts responsibility for actions</td>
<td>1.94</td>
<td>0.23</td>
<td>Low</td>
</tr>
<tr>
<td>9</td>
<td>listens attentively during lessons</td>
<td>2.00</td>
<td>0.00</td>
<td>High</td>
</tr>
<tr>
<td>10</td>
<td>follows directions diligently in the school</td>
<td>1.94</td>
<td>0.23</td>
<td>Low</td>
</tr>
<tr>
<td>11</td>
<td>works independently</td>
<td>1.34</td>
<td>0.39</td>
<td>Low</td>
</tr>
<tr>
<td>12</td>
<td>takes care of school properties</td>
<td>2.08</td>
<td>0.41</td>
<td>High</td>
</tr>
<tr>
<td>13</td>
<td>is able to solve day-to-day problems by him/herself</td>
<td>2.30</td>
<td>0.55</td>
<td>High</td>
</tr>
<tr>
<td>14</td>
<td>is able to adjust to changes in routine</td>
<td>1.60</td>
<td>0.42</td>
<td>Low</td>
</tr>
<tr>
<td>15</td>
<td>is able to follow class routines without reminders</td>
<td>1.90</td>
<td>0.29</td>
<td>Low</td>
</tr>
<tr>
<td>16</td>
<td>shows tolerance to friends and mates</td>
<td>1.80</td>
<td>0.40</td>
<td>Low</td>
</tr>
<tr>
<td>17</td>
<td>tries to help someone who is being hurt</td>
<td>2.14</td>
<td>0.92</td>
<td>High</td>
</tr>
<tr>
<td>18</td>
<td>tries as much as possible to settle disputes among friends</td>
<td>1.02</td>
<td>0.09</td>
<td>Low</td>
</tr>
<tr>
<td>19</td>
<td>offers help to other students who have difficulty with a task</td>
<td>2.12</td>
<td>0.67</td>
<td>High</td>
</tr>
<tr>
<td>20</td>
<td>does not always get into physical fight</td>
<td>1.63</td>
<td>0.45</td>
<td>Low</td>
</tr>
<tr>
<td>21</td>
<td>takes things that do not belong to him/her</td>
<td>2.21</td>
<td>0.26</td>
<td>High</td>
</tr>
<tr>
<td>22</td>
<td>laughs at other student’s discomfort</td>
<td>1.78</td>
<td>0.22</td>
<td>Low</td>
</tr>
<tr>
<td>23</td>
<td>is disobedient</td>
<td>1.24</td>
<td>0.60</td>
<td>Low</td>
</tr>
<tr>
<td>24</td>
<td>bullies mates and other junior students in the school</td>
<td>1.70</td>
<td>0.51</td>
<td>Low</td>
</tr>
</tbody>
</table>
Table 3 shows that 14 items out of the 25 items in the questionnaire fall within the mean score of 1.02 to 1.99, which is less than the accepted mean score of 2.00. By implication, dishonesty, bullying of mates and other junior students, trying as much as possible to settle disputes among friends and being able to interact well with other students, among other things, are some types of moral character that the students least displayed.

**Hypothesis Testing**

\( H_{01} \) Teachers’ emotional intelligence and their moral character are not a determinant of secondary school students’ moral character.

**Table 4.** The predicted level of independent variable over the dependent one

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Square</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>50.47</td>
<td>2</td>
<td>25.23</td>
<td>3.20</td>
<td>0.045</td>
<td>Rejected</td>
</tr>
<tr>
<td>Residual</td>
<td>811.26</td>
<td>103</td>
<td>7.87</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>861.73</td>
<td>105</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

P=0.05

Table 4 shows that the calculated F-value is 3.20 while the significant probability value of 0.045 is less than the alpha value of 0.05. Since the probability value is lower than the alpha value, the null hypothesis is not accepted. By implication, teachers’ emotional intelligence and their moral character can predict the moral character of secondary school students.

**Table 5.** Model summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R. Square</th>
<th>Std. Error Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.24</td>
<td>0.059</td>
<td>0.040</td>
<td>2.806</td>
</tr>
</tbody>
</table>

Table 5 shows the independent variables (teachers’ emotional intelligence and teachers’ moral character), which are very small as they contribute to R-Square of 0.059 (5.9%) to the model (student moral character). To ascertain the contri-
The computation revealed that the teachers’ emotional intelligence contributed to the Beta weight of 0.210 and t-value of 2, while the teachers’ moral character Beta weight is 0.094 and the t-value is .971. This implies that emotional intelligence is the most significant variable that serves as a predictor of students’ moral character while teachers’ moral character is a negative predictor.

Figure 1. Summarizes the findings:

![Figure 1. Model of relationship between teachers' EI and moral character predicting students' moral character](image)

**Discussion**

A lot of research has been carried out on the emotional aspect of education in recent years. Working on the emotions for positive gain and encouraging emotional growth of moral character in children’s classroom has become more
crucial now than before. This is due to the social problems prevailing in society. The presented study has revealed that a highly emotional intelligent teacher with adequate moral character can predict the student’s moral character. In essence, the teacher can serve as a role model for students to emulate in order to develop good moral character. This is what every member of society expects from the school through the teachers that train the students in the act of developing moral character. The teacher is expected to serve as a role model for students to emulate in the formation of sound and effective moral character. This is possible only if teachers possess a high level of emotional intelligence, which can offer them the opportunity to display sound moral character worth emulating by their students.

This finding is in agreement with micro-functionalists, whose basic principle sees emotional intelligence as a messenger that provides an individual with information which can direct their action. By implication, teachers’ emotional intelligence sends information through the kind of character that the teachers display in terms of either good or bad. In line with the three components of micro-functionalists, teachers are able to recognize their emotional state through their awareness, recognition and understanding of themselves. This helps them in the manifestation of the different moral character which they display in society. The kind of moral character which they display sends a strong message or information to their students on which type of moral character they can also display to society.

What also supports this finding is the study of Bandura (1977 & 1991), which reveals that moral character formation in students can occur gradually from interactions with the environment, observation of role models (i.e., the teachers in the school), and acculturation by social agents.

**Recommendations and Conclusion**

The following recommendations are provided based on the findings:

a. Secondary school teachers’ emotional intelligence should be properly developed to enhance positive character formation so as to be able to influence their students’ moral character positively.

b. Attention needs to be paid to the development of secondary school students’ emotional intelligence.

c. There is a need for the teaching of emotional intelligence as a foundation course at all levels of pre-service teacher training in teacher training institutions in Nigeria.
In conclusion, education contributes to the natural and harmonious development of an individual. The main aim of education is the all-round holistic development of students. The teacher is the central figure in the educational process, who helps in making an individual a better person. Teachers with high emotional intelligence display good moral character, which they can teach their students. They can help their students to learn what their values are, to believe in these values as an integral part of who they are so that they can live their lives in alignment with these values. Teachers can play an essential role in helping students learn and apply a moral-reasoning process. The teacher makes a difference. It is the teacher who moulds the most precious material of the land (young generation) in their most impressionable period of development. In order for the teacher to do this, he/she must possess the skills, emotional intelligence, personality traits and moral character that would serve as a determinant of students’ moral character.

References


General Didactics
On-line Student Emotion Monitoring as a Model of Increasing Distance Learning Systems Efficiency

Abstract
Modern concepts of education are increasingly focused on e-learning and distance learning. Expectations from them are at least the same efficiency, but also results higher than those obtained by the traditional education system. In distance learning systems the modules of assistants (tutors, helpers) are very important. They provide immediate feedback both to the student and the distance learning system. Tracking and recognizing emotions in distance learning systems is of great importance, especially in the adaptive capacity of automated education systems towards the student, but also in a corrective role in the distance learning process itself. Here we present a model for evaluating students based on automatic recognition of emotions during task solving.

Keywords: distance learning, entropy, emotion intensity, homogeneity

Introduction
Psychologists have redefined human intelligence shifting from cognitive intelligence as the central point of gravity to the inevitable inclusion of emotional intelligence (Goleman, 1995). Emotional intelligence is present in every communication process, and information about emotional states in human-computer interactions is especially analysed because it is the key link in achieving maximum efficiency (Picard & Cosier, 1997).
Methodological approaches to such knowledge transfer must be adjusted to indirect interaction, lack of a defined physical space, temporal distance and physical or visual contact. Many of the methodological and pedagogical approaches are entirely based precisely on these facts.

In this sense, emotional state analysis in education in the contemporary information and communication technologies (ICT) environment is not only required, but necessary. It is needed to compensate for negative effects, and to use positive ones in further learning. Emotional state plays an important role in decision making, problem solving, communication and negotiation. Therefore, recognition of emotions is necessary for the development of intelligent interactions between people and computers (Jacobs, 2005).

**Theoretical Background**

Emotional Speech Recognition (ESR) aims at automatic identification of the emotional state of the individual based on an analysis of their speech (Delić & Sečujski, 2008). Emotions in speech are expressed via varying speech characteristics by level through specific frequency, intensity and duration, changes in articulation quality, general voice quality, amplitude, and frequency (Jovičić, Kašić, Đorđević, Vojnović, Rajković, Savković, 2003). In man-machine dialogue, the machine manages to communicate successfully by following users’ reactions with ESR algorithms, recognizing key words and semantics in their answers and their level of satisfaction (Bojanić & Delić, 2009).

We distinguish two types of emotions based on their origin: internally generated emotions which directly result from the interaction with the system and externally generated emotions that have their origin outside the system (Ochs & Frasson, 2004). Positive emotions developed during the educational process have a strong, twofold positive impact on learning. Firstly, they allow for creative and flexible processes of thinking, and also increase motivation, so students try harder rather than give up. Secondly, students consciously want to maintain and possibly increase the intensity of positive emotional states, which maintains the levels of concentration and motivation for learning.

Algorithms of speech recognition technology and video analysis via analyzing the characteristics of voice, gestures and miming are used for identifying several emotional states: joy, sadness, fear, anger, surprise and disgust (j, sd, f, a, sp and d) (Busso, Deng, Yildirim, Bulut, Lee M.C., Kazemzadeh, Lee S., Neumann, Narayanan, 2004). During research, the occurrence of neutral emotional states
Figure 1. Functional model of the machine in the verbal dialogue (Bosch, 2003)

was often identified. According to the occurrence which characterizes neutral emotional states, it is treated as a type of emotion with a positive impact on learning. Individual changes in emotional intelligence correlate with emotional states. Emotional intelligence (in addition to cognitive intelligence) is a very important factor in learning. Emotional intelligence positively correlates with job satisfaction and negatively with depersonalization (Przybylska, 2016).

There can often be specific differences in the way that every individual receives information and gives it sense and meaning before it becomes a part of their everyday life (Yilmaz-Soylu & Akkoyunlu, 2006). By making the assessment of the necessary correction, based on feedback, ICT encourages the desired behavior in learning, making it possible to design lectures that lead to success regardless of the environment. That way, students are given the opportunity to make cor-
rerections and clear up misconceptions and prejudice (Anohina, 2007). Emotions management contributes to professional effectiveness: in achieving academic goals, building quality social relationships, and maintaining a good classroom environment and discipline practices (Sutton, 2004).

Initial motivation is very important when approaching a course as well as learning whether the student joined the course due to intellectual curiosity or just as a means to obtain a diploma. Students often see lectures as an activity they are required to attend. Furthermore, they see their tasks as a curriculum that is supposed to be accomplished and eventually evaluated (Brophy, 2013). Automated education systems must avoid formalism during studies and solve problems without absolute understanding of such. This kind of system, except for evaluation-reward system, must also possess a guidance system, i.e., a system for simplifying and segmenting problems with adequate explanations and demonstrations (Nipkow, 2012).

**Research Methodology**

The research was conducted following the model shown in Figure 2. This model was designed to adjust services according to students’ current needs. “Reasoning” and “determining” the algorithm of compensating for emotional states are reduced to a few steps:

1. Searching for solutions in the knowledge base according to statistics for the current environment and implementing the plan for the expected state and intention.
2. Emotions analysis and determining values (type and gradation)
3. Choice of presentation methodology (type of tutor or living agent)
4. Monitoring emotions changes and adjusting the presentation to new circumstances
5. Testing with monitoring emotional changes and correlation with the presented knowledge
6. Presentation of test results with an explanation based on recognised emotions
7. Selecting and offering an adequate tutoring system for possible corrections or advancing knowledge
8. Scenario backup.

During the exploitation of the DL system, the database of emotional algorithms and states of student emotions will continually be upgraded. Analyzing patterns through timelines, the type and intensity of students’ emotional states, obtained
On-line Student Emotion Monitoring

results and goals, the system will have information about the events, i.e., which emotional changes preceded the successful completion of tasks. If the student achieves targets B and C, but fails to achieve target A, the system must compare the type and intensity of emotions which were present at that moment, so that it can create an algorithm of a successful scenario as an alternative to failure. In the knowledge base, the system also contains phase algorithms. If the goal is hardly feasible, interphases are sought. Those interphases will ensure the successful implementation of training programs, i.e., through realizing targets B and C in a certain period of time, it is expected that target A will also be realized.

An “intelligent and adaptive” system of DL was simulated. This automated centre had a built-in algorithm for a multi-criterion approach to identifying students’ emotional state and emotional intelligence. Thus, ITC and ALE (Adaptive Learning Environment) are created. This is an intelligent environment adapted to
students’ individual characteristics (Wenger, 1987; Cerri, Clancey, Papadourakis, Panourgia, 2012; Guin & Lefevre, 2013).

The research builds upon analyses of distance consultation recordings during the course carried out by the improvised automated centre of DL through monitoring:

- changes in the type and intensity of emotional states
- reactions to new tasks and problems, change in dynamics in regards to the number of calls and call duration
- tracking homogeneity of the call and the positive and negative emotions
- development of a sense of security
- trends (number of calls, development of emotions, changes in the intensity of emotions, results obtained during the course, etc.)
- success in learning and solving problems
- homogeneity of results obtained during the course
- comparison between results obtained during the course and the level of prior knowledge.

The flow of education during the course was divided into thematic sections. Each thematic unit was developed through several stages. The process of solving tasks was divided into several segments:

1. Segment of introducing a problem, understanding and task analysis
2. Segment of solving a task
3. Segment of checking results and discussing solutions.

The research sample is represented by a group of first year students of undergraduate studies, study program New Media Design in Education. Each student is associated with a number of points, where a maximum of 100 points is defined for the level of prior knowledge. Previously passed exams (i.e., success in high school for “freshmen”) are scored with a maximum of 40 points, and 16 points are considered as a minimum, $16 \leq \mu p \leq 40$. The entrance test (i.e., success in the previous year of study) is scored in a similar way, $0 \leq \mu p \leq 60$. We calculate the average level of prior knowledge $\bar{Z}$, for the entire class of $n$ number of students, where $Z_k$ is the number of starting points for each student.

The group was divided into two parts which were approximately equal in the amount of the average prior knowledge and homogeneity of prior knowledge: a group which could use the simulated DL system, available 24/7, and a group that acquired knowledge in a classical, traditional way (attending classes and if necessary consultations during office hours). We calculated the homogeneity of the whole group $h(S)$ and its subgroups $h(S_1)$ and $h(S_2)$, according to prior knowledge. Therefore, we formed the first group with $n_1$ students (experimental group) and
the second group with \( n_2 \) students (control group). We calculated the \( Z_1 \) and \( h(S_1) \) for the first group and \( Z_\overline{II} \) and \( h(S_2) \) for the second. \( Z_1 \sim Z_\overline{II} \sim Z \) was noted, but also \( h(S_1) \sim h(S_2) \sim h(S) \). That is a condition that had to be fulfilled before comparing the quality and objectivity of the group results.

### Table 1. Analysis of students' prior knowledge

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<th>Result of Admission Test (max 60)</th>
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### Research Hypotheses

The following hypotheses were formulated:

**H1**: Adapting the learning environment in accordance with recognition of emotional states leads to greater achievements in the educational process.
**H2:** Automated tutoring systems can actively manage the process of education in DL systems, regardless of the time and physical separation by analyzing the emotional states of DL system users.

**Research Results**

Homework was set for both groups, after completing the first of five sections. The homework was adjusted to every student and their prior knowledge. While doing homework, the students consulted the lecturer at least three times, i.e., at least once per segment during task solving. Each report represents a session which is terminated when a task or lectures are successfully absorbed, i.e., when they are understood and when positive emotions are generated in contact with the simulated DL centre. Apart from the defined mandatory calls, there may be optional calls and calls in order to settle a current dilemma, solution confirmation, etc. All these calls are ascertained in each segment by numbers, i.e.:

**St1:** task 1

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**St2:** task 1

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...

When the system answered, a statement of emotions was determined, negative if present, and positive which were present after resolving the dilemma, at the end of session. The intensity of emotions for each student was determined (cf., Table 2). In our research, we planned five tasks which covered all topics of the teaching areas. Those tasks were divided into segments. We had 15 segments and measured the number of reports in each, e.g.:

| 1 | 3 | 2 | 2 | 4 | 2 | 2 | 2 | 3 | 4 | 4 | 2 | 2 | 2 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |

Based on the reports of segments, we can calculate homogeneity of reports for a particular student by the tasks $h(J_2)$, and by the entire course $h(J)$. 
In the next step, we observe negative emotions which appear for each report. Negative emotions are denoted by $N_i$, and the degree of negative emotion by $q_i$, where $0.01 \leq q_i \leq 1$. Instead of using the value “zero” we used the term “almost zero” for negative emotions. The reason for this ($0.01 \leq q_i$) was a phenomenon which can be called “discomfort of reporting”, although the negative emotions were practically zero.

During the first task we get reports of negative emotions $N_1, N_2, \ldots, N_{k_i}$ and corresponding degrees $q_1, q_2, \ldots, q_{k_i}$. Using this data we can calculate homogeneity of negative emotions $h(q)$.

In the next step we observe negative emotions which appear for the second assignment. Inductively, we repeat this procedure until the last assignment is taken into account. Finally, we observe negative emotions for a student during the whole course $h(q)$.

Further, we observe positive emotions which appear for each report. Positive emotions are denoted by $P_i$ and the degrees of positive emotion are denoted as $p_i$, where $0 < p_i \leq 1$. As with negative emotions, we examine reports of positive emotions $P_1, P_2, \ldots, P_{k_j}$ and corresponding degrees $p_1, p_2, \ldots, p_{k_j}$. Thus, we calculate homogeneity of positive emotions $h(p)$.

**Discussion**

The conclusions that are reached by analyzing the obtained data and the results obtained in the experimental group can be commented on in some of the following ways:

- if all students’ negative emotions are of relatively low intensity and a high degree of homogeneity, tasks are set well
- if students’ negative emotions are of high intensity in large numbers and a lower degree of homogeneity, some of the lectures and exercises are not clear, then such lectures and exercises must be adapted or clarified
- if negative emotions of the majority of students are of high intensity in large numbers and of a high degree of homogeneity, the tasks are not well set or lectures are not well designed
- if negative emotions among individuals are of high intensity in large numbers and of a high degree of homogeneity, the tasks are difficult and complicated for these students
- if positive emotions are of high intensity, negative emotions brought to a minimum, and the number of reports is minimal, tasks for the students
Table 2. Analysis of the type and intensity of emotions, homogeneity of emotions per task and throughout the course for a particular student

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are trivial, and it is necessary to increase the complexity of tasks and adjust them to the abilities of an individual.

The next step was the actions of the system. After the first task, it is possible to make corrections in tasks or in presentations of the material. For each situation, the system must have an adequate response (scenario), but also an alternative scenario or satisfactory success. Corrective actions in terms of increasing or reducing the complexity of assignments and activating additional tutorials with examples and homework were conducted based on analysis of data after solving tasks. Corrective actions were specific and characteristic of each individual. In the case of student 6, who started the course with a high level of prior knowledge, after the first teaching area and the detection of a small amount of negative emotions and large amounts of positive emotions, the complexity of the tasks was increased in the second teaching unit. That caused the intensity of negative emotions to increase, whereas positive ones had remained at the same level. Therefore, in the next steps, the level of task complexity was maintained and monitored. Since the homogeneity of the number of calls was maintained and slowly increased, and the intensity of negative emotions was in a declining trend, we expected successful completion of the course with a high level of knowledge, and our expectations were confirmed.

Example of students 1, 3, 4 and 5: after the first action of the system, i.e., after the first correction and the increase in the difficulty of tasks, they responded with a significant increase in the number of calls to the system. Increase in the intensity of negative emotions was registered, which caused the increase in the length of the sessions, and the tackling of a higher number of examples and assignments. By engaging additional tutorials, the intensity of positive emotions was slowly rising chapter by chapter, while the homogeneity of calls was approaching the maximum, $h(f) \sim 1$.

Student 2 was a specific case, who made progress in relation to the level of prior knowledge, but not in the expected volume compared to the obtained results of other students in the experimental group. After the first correction of tasks, the reaction of this student was lacking. The number of calls did not change; it even decreased at some stages. Homogeneity of reports decreased and the intensity of negative emotions grew, while the homogeneity of emotions was variable and decreasing. The conclusion is that this was a superficial and binge approach to learning, where prior knowledge and knowledge “from memory”, from lectures and exercises, were used in solving problems. We defined a special tutoring system for this student, which gave him tasks with additional reminders.
In general, the students with a greater number of calls did more tasks and got a higher number of solved examples for analysis and discussion. In these cases, options of corrective actions were more varied, especially for those with high motivation.

Table 3. Results obtained at the end of the course (exam)

<table>
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<tr>
<th>No.</th>
<th>Type of Subgroups</th>
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Based on Table 3, we can conclude that the homogeneity of the whole group is violated, i.e., the obtained results vary considerably. Since the homogeneity of both subgroups is high, it is concluded that the results of the subgroups are different. The high homogeneity of the subgroups shows that the students mastered the subject in a similar way and that they obtained similar results, depending on the mode of teaching. In this way, we exclude the significant negative impact of the teacher or methods of class implementation.

By comparing the data from the beginning of the course and the results which were obtained at the end of the course, it was found that almost all the students made progress. However, analysis of the results by subgroups shows that the experimental group obtained a result which was excellent, while the progress
of the other group was poor. Since the levels of prior knowledge were similar, it can be concluded that the simulated automated centre with a built-in algorithm for a multi-criterion approach to identifying the emotional states and emotional intelligence of system users has successfully updated and personalized its delivery. The emphasis is put especially on the individual, since some students (4 and 5) made up for large holes in prior knowledge, by frequent use of the advantages of the automated centre.

**Figure 3.** Diagrams of prior knowledge levels and obtained results
Conclusion

Upgrading the DL system with an algorithm for a multi-criterion approach to identifying emotional states and emotional intelligence of system users, fundamentally changes, modernizes and improves DL systems. These kinds of systems operate in a temporal domain which is characterized by certain conditions of the environment. It is important to notice that these conditions change under the influence of lecturers, students, weather and seasonal conditions, as well as stressful conditions caused by emotional states of fear, anger, sadness, etc. As noted, besides the analyser and compensators for emotional states, the model establishes a knowledge base of emotional states and algorithms for future actions based on emotional experiences, impressions, treatments and results in certain situations. Even if in certain situations the automated system does not have an adequate answer and cannot provide adequate service, the request is redirected to a “live” agent, and the live agent will have enough initial information (from the system) to be able to prevent unpleasant scenarios.

Feedback about emotional states and emotional intelligence greatly contributes to the quality and success of achieving educational goals. This is especially important for DL education systems with no direct interaction and communication with teachers, as it provides autonomy to the DL system.

References


(Transactional Model of Human-Machine Speech Interaction), Conference DOGS, Kelebiija, (pp. 8–15).


Integrated Science and Biology Education as Viewed by Czech University Students and Their Attitude to Inquiry-based Scientific Education

Abstract
The article is focused on the Czech university students’ attitudes to integrated science at elementary school and biology at secondary school and their experiences with inquiry-based scientific education (IBSE) of these subjects. Results show students’ opinions about teaching methods in nature science education and the direction in which it would be beneficial to aim in the future teaching and learning process in Czech educational environment. Our results show that the main reason for integrated science or biology to gain popularity is teacher personality, implementation of field work and usefulness of gained knowledge in everyday life. Respondents’ answers revealed that the new educational methods, e.g. IBSE, could have a positive effect on students’ approach to natural science subjects.

Keywords: university student respondent, integrated science and biology education, inquiry-based scientific education

Introduction

Nature science education situation
Young people’s interest in nature science in the last decade has a declining trend. The recession is apparent already in the course of elementary school education (Eilks at al., 2004). According to Janoušková et al. (2008), this is the main reason
why increased attention is devoted to the issue of nature science education. The increased attention is not being addressed only at states’ level in their National Education Systems, but also at EU level through the European Commission analyzing the current situation in nature science education. The major cause of the unpopularity of nature science subjects is attributed to frequent use of a scientific paradigm. Characteristic features of such an education comprise clearly given and excessive curriculum structure, and mechanical teaching of facts (Škoda, Doulík, 2009). This educational style results in a situation where Czech students are well able to explain isolated phenomena but lag behind in science-based question solving (Czesaná et al., 2009).

**Students’ attitudes to integrated science and biology**

Research reports on students’ attitudes to integrated science and biology examining educational methods in these subjects come solely from abroad. For example, the studies of Trumper (2006) from the Israeli environment and Prokop et al. (2007a, 2007b) from Slovakia, who assessed the effect of factors (gender, age or school grade) on high school students and their attitude to biology. It is evident from the results that respondents assess biology knowledge as important, but fail to see its connection with everyday life. Prokop et al. (2007b) obtained similar results by analogous assessment of elementary school students. As emerged from the results, students count biology among unappealing subjects and find it difficult to realize its contribution to practical life.

Trumper (2006) researched factors influencing students’ interest in biology. Based on his results, he suggested adjustments to teaching methods in nature science subjects to make them more attractive. Students should have the opportunity to discover principles and thus satisfy their cognition. Based on their studies, Knight and Wood (2005) and Wilke (2003) ascertained that collaborative teaching or practical teaching are demonstrably more influential on forming students’ knowledge compared to frontal instruction. Diversion from the traditional deductive approach to teaching could have a positive impact on students’ perception of nature science subjects. As mentioned by Stuchlíková (2010), one of conceptually available didactic trends is widely discussed inquiry-based scientific education (IBSE). During IBSE, the student plays the role of a scientist and builds his knowledge by means of solving given problems in successive steps including stating a hypothesis, selecting appropriate methodology, obtaining and processing results, summarizing results and discussing them (Rochard et al., 2007). Research by Vácha and Petr (2013), focused on the awareness of IBSE among Czech elementary school teachers, implies that half of the respondents have never
encountered IBSE. These results highlight the need for introducing inquiry-based teaching methods in pre-service teacher training in order to further spread IBSE at schools.

**Main research goals**

The main aim of this study was to find out undergraduate students' opinions on integrated science education at elementary schools and biology education at secondary schools, to establish their attitudes to inquiry-based scientific educational methods and to quantitatively generalize the results. Prior to conducting the research, it was assumed that students would consider activating teaching methods to be much more effective and would prefer them. It was expected that students would perceive time consumption and related excessive curriculum structure to be the most frequent limitation to implementing activating methods. Another hypothesis was that students would state a teacher personality to be a significant factor influencing the popularity of integrated science and biology.

**Methodology**

Data were gathered with the use of a Likert type questionnaire (Skutil, 2011) including open-ended as well as closed-ended scaled questions. The questions focused on demographic data (gender, age, study branch) formed the introductory part of the questionnaire. The remaining items were divided into three sections: 1) university students' attitudes to integrated science and biology education, 2) teaching methods used in these subjects and 3) students' experience with IBSE. The final version of the questionnaire was based on a pilot study tested by 34 university students.

Data were obtained from 245 respondents in total. The questionnaire also included self-depending questions verifying the students' credibility. 27 respondents with contradicting answers were excluded. The final representative sample comprised 218 respondents (92 males and 126 females). All the respondents were students of the Faculty of Education, the University of South Bohemia. 118 of these respondents attended teacher-training courses (two-branch teacher training in integrated science combined with the English language, Chemistry, Physics, Geography, Physical training, Health education, and Teacher training for elementary schools), whereas 100 respondents studied non-teacher training majors (Nature and environmental education, single-branch Physical training). The respondents' age ranged from 21 to 25 years.
The obtained data were analyzed with the use of statistical methods. For analysis of nominal data, a contingency table and Pearson chi-square test were used to analyze the relationship of categorical variables. Data were assessed at the statistical significance level of 0.05. Simultaneously, selected questions were analyzed using a multivariate linear analysis by CANOCO program (TerBraak, Šmilauer, 1998), allowing for testing the pre-stipulated hypotheses in relation to a number of explanatory variables. It facilitates mapping links between dependent and independent variables and enhances their visualization with the use of ordinal axes. Analysis was made with the use of PCA (principal coordinates analysis). This method reduces the number of plotted variables by introducing new variables (called main components) in order to intercept the largest amount of volatility of original variables (Hendl, 2009). The main components (=ordinal axes) are therefore mutually uncorrelated hypothetical variables explaining the greatest volatility of original data. The PCA itself does not allow for defining the influence of real explaining variables. This limitation is eliminated by, e.g., RDA (redundancy analysis). The limitation is understood as an addition of real variable (significantly influencing analyzed data) to calculated ordinal axes (Lepš, Šmilauer, 2003).

Results and discussion

Integrated science/ biology popularity and unpopularity

The introductory section of the questionnaire was focused on attitudes of undergraduate students to integrated science and biology education during their school attendance. Figure 1 illustrates comparison of responses to question Why did integrated science and biology belong to your favourite subjects? What was analyzed were only answers of those respondents who attended biology as an individual high-school subject and who described it to be one of their favourite subjects. The following appeared among the most frequent responses: the teacher's personality, fieldtrips and practicality of gathered information in real life. Difference in popularity of integrated science at elementary school and biology at high school is indicated in answers such as: “I enjoyed experiment demonstrations, and, explained topics were interesting”. Responses indicate that the popularity of experiments and laboratory work as well as taught topics increased at high school as compared to elementary school. The research also shows that experiments were incorporated into lessons more frequently at high school and were replacing less attractive teaching methods. This may explain, to some extent, the increasing percentage of popularity of taught subjects at high school.
Reasons for the popularity of integrated science and biology were visualized by the PCA method, as none of the explanatory variables (gender, teaching vs. non-teaching study branch) has a statistically significant influence on respondents’ answers. The result of PCA indicates that the popularity of integrated science and biology can be partially explained by the factor of “practical application” (variables E, D) as opposed to simple topic attraction (A) or subject successfulness (G). This first ordinal axis (horizontal) explained almost 20% of total response variability. The second ordinal axis (vertical), explaining almost 15% of total variability, could be interpreted as the teacher’s influence (F, but partially also D). Overall, the four ordinal axes explained 56% of variability.

The following question (Why was not integrated science/biology your favourite subject?) focused on reasons for the unpopularity of integrated science and biology (Figure 2). Differences are apparent between the answers of the respondents studying teaching and non-teaching majors. The respondents of non-teaching majors stated the teacher’s personality to be the main reason for integrated science unpopularity at elementary school and topic difficulty as the reason for biology
unpopularity at high school. The respondents of teaching majors considered oversaturation with facts and unattractiveness of laboratory work to be the main drawbacks of integrated science education. A similar situation arose in answers related to the unpopularity of biology education at high school, where the most frequent answers also included oversaturation with facts and excessive teaching structures.

**Figure 2. Reasons for unpopularity of integrated science at elementary school and biology at high school**

Legend: teaching – students of teaching majors, non-teaching – students of non-teaching majors; ES – elementary school, HS – high school; A – popular teacher; B – unattractiveness of laboratory work; C – unpopularity of group work; D – unattractive topics; E – difficulty of discussed topic; oversaturation with facts and excessive memorizing; G – other reasons

With inclusion of a real categorical variable (students of teaching majors versus others) in the analysis of integrated science and biology unpopularity, the important factor emerged to be the amount of information (F) with unattractive topics (D) or other reasons (G). The study type of respondents (teaching vs. non-teaching
majors) had a marginally significant effect on their answers (p = 0.07; Monte Carlo method), therefore a limited RDA analysis was selected for visualization. However, the axis corresponding to study major explained only 4.7% of the total variability of responses. The first unlimited axis (vertical), explaining 20.9% of total variability, complies with the gradient of unattractive topics (D) – oversaturation with facts (F). The first four axes explain in total 56.5% of variability. An interesting indication shows that while the unpopularity of the teacher at elementary school (ES-A) could influence later choice of a non-teaching study major, the teacher at high school (HS-A) does not have such an effect.

**Teaching methods used in integrated science/biology education**

The following section of the questionnaire focused on the teaching methods considered by the respondents to be the most beneficial during integrated science and biology education. In the question *Which teaching methods do you consider to be the most beneficial in science education?* the respondents had the choice of four answer options and multiple-choice answers (method sorting was based on the study of Maňák and Švec, 2003): a) skill-practical methods (e.g., direct observation of nature, experiments, etc.), b) illustratively-instructional methods (e.g., observation and demonstration of real objects and phenomena), c) activating methods such as discussion and heuristic method, etc. and d) verbal methods (e.g., lecture, explanation, etc.). The methods that actively engage students in the educational process were considered by the respondents to be the most beneficial teaching methods. The majority of the respondents (110) mentioned practical methods, 104 respondents selected illustratively-instructional methods and 70 respondents stated activating methods. Verbal methods were mentioned to be the least beneficial (41 respondents). Similar results emerged from the research of Rokos et al. (2013), which indicated that the most popular teaching methods and strategies included experiment demonstration, handling real objects and fieldwork. Results of the recent study based on contingency table and Pearson’s chi square test indicate that students of elementary school do significantly more fieldwork compared to high school students (Pearsonχ²: 4.4414, sv = 1, p = 0.0358).

Answers indicate that teachers at both types of schools preferentially used verbal methods. The respondents assume that methods encouraging students to more intense activity were suppressed by teachers due to time constraints and their unwillingness to prepare for such lessons. These results are supported by the findings of Osborne and Dillon (2008), who conducted a similar study of European extent. Their outcomes suggest that verbal teaching methods are still
widely used. The conflict of students’ ideas about suitable teaching methods and actually used methods could be viewed as the onset of nature science subjects’ unpopularity.

From the above mentioned facts it emerges that education in the field of integrated science and biology is in need of transformation of teaching methods. For successful implementation of such transformation, the curriculum structure must be revised (Korthagen et al., 2012) and also an emphasis needs to be placed on the development of teachers’ skills to use methods of scientific research (Škoda, Doulík, 2009). Janoušková et al. (2008) adds that in the current education of nature science subjects it is important to put more emphasis on the comprehension of acquired knowledge and ability to implement it in practical life.

**Respondents’ experience with IBSE**

The third section of the questionnaire is aimed at finding out whether respondents have experienced IBSE (Have you encountered any elements of IBSE in integrated science/biology), which should, as stated by Eastwell (2009), partially substitute the deductive teaching style. In both, elementary and high school the least frequent response was “often” (ES 9 / HS 11). On the contrary, in the majority of cases the respondents stated that they had “almost never or never” (ES 154 / HS 97) come across elements of IBSE during their elementary and high school attendance. The remaining interviewees stated that they had “at least occasionally” encountered IBSE (ES 55 / HS 50).

Introduction of IBSE elements into education is influenced by specific factors. Individual limitations were characterized by Papáček (2010), who sorted them into four categories: a) limitation at the level of the contents of nature science didactics and methodology, b) limitation at the level of requirements on teachers’ educators, c) limitation at the level of teachers’ preparedness, d) limitation in the area of school facilities. Schwartz and Crawford (2004) add that another significant element resides in the teacher’s experience and ability to choose the pieces of knowledge that are to be built with the use of IBSE. Furthermore, Edelson et al. (1999) extend the list of obstacles by a category of students’ motivation and by the insufficient base of students’ knowledge and skills.

The aim of this study was to ascertain to what extent our respondents, university students, realize these limitations. In the following question What do you consider to be the major barrier in implementing IBSE in nature science education? the research participants could verbally express factors they regard as the greatest obstacles to introducing IBSE to education (Figure 3). This item was incorporated into the questionnaire in order to reflect whether students themselves are aware
of limits to introducing activating teaching methods. The respondents from teaching majors had already attended pedagogical practice placement, therefore their opinion was based on personal experience. Among the most frequent answers there were factors such as time constraint and oversaturated curriculum (51x), insufficient material facilities (31x), pupils’ unwillingness to participate (24x), teachers’ unwillingness to prepare IBSe (24x), 16 respondents considered IBSe as too exacting, 14 respondents mentioned financial barriers, 13 safety issues and 10 teachers’ insufficient qualifications. A large number of respondents (87) did not provide any answer at all. The high number of cases where no answer was provided to this question is probably related to the fact that, as Stuchlíková (2010) mentions, students have difficulty to define the concept of IBSe. Based on this fact, a complex definition of IBSe was at the respondents’ disposal during completing the questionnaire.

**Figure 3.** Limitations to introducing IBSe to integrated science/biology education

![Chart showing limitations to introducing IBSe to integrated science/biology education](image)

**Legend:** A – time constraint and oversaturation of curriculum; B – insufficient facilities; C – pupils’ unwillingness to participate; D – teachers’ unwillingness to prepare lessons with IBSe components; E – teaching aids and materials; F – finances; G – safety; H – teachers’ insufficient qualifications
Conclusion

The results of this research point to the significance of teachers’ role in education. The teacher’s personality itself is the major factor fundamentally influencing the popularity or unpopularity of integrated science and biology. Teaching methods used by the teacher are also essential. University students consider the methods in which students play an active role, such as IBSE, to be the most effective and most popular ones. The analysis of the respondents’ answers indicates that activating teaching methods are increasingly utilized in science education, however, classical verbal teaching methods remain to be the prevailing form of education. The greatest obstacle in introducing activating teaching methods is time constraints. The results have thus confirmed the pre-test hypotheses.

Future studies should focus on more frequent use of activating methods in integrated science and biology education as they encourage students to greater independence such as creativity, lay emphasis on the comprehension of the acquired knowledge and its subsequent use in real life. These very trends could make the integrated science and biology education more attractive. This situation should be addressed in teacher training programs at Faculties of Education, where students should be introduced to principles of IBSE within the scope of subject didactics but also of newly emerging subjects reflecting current needs in nature science didactics. For in-service teachers, workshops should be organized, where teachers could give IBSE a tryout, learn to design their own assignments and subsequently implement them into their own teaching. Other options include multi-annual study programs focused on professional IBSE development (eg., Akerson, Hanuscin, 2006).

Acknowledgements
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References


Abstract
This study investigates the perspectives of young women with disabilities in Jordan, focusing on their self-regulation. 16 young women, aged 18–22, with visual (VI), hearing (HI) impairments and physical disability (PD), were recruited using a snowballing technique. Data were collected using semi-structured interviews, which were analysed thematically. Two main themes emerged where findings show that disability affects self-regulation where there was an overlap between local cultural perspectives in understanding disability of young women, disability and gender in understanding self-regulation of women with disabilities. Disability and gender also influence women with disabilities self-regulation with respect to self-learning, setting goals, self-evaluation, self-monitoring, making decisions and self-reinforcement. Findings will add to the current debate and efforts to understand disabilities in women and lay the groundwork for initiating a campaign in Jordan concentrating on the importance of self-regulation in young women with disabilities.

Keywords: self-regulation, young women, disability, Jordan, cultural perspectives

Introduction

Self-regulation (SR) indicates the ability of individuals to manage their behaviour in order to achieve their own goals (Bandura, 1986). SR is defined as the ‘process whereby students activate and sustain cognitions, behaviours, and affects, which are
systematically oriented toward attainment of their goals’ (Schunk & Zimmerman, 1994: p. 309). For women with disabilities, the aim of SR is to demonstrate their demands and assert their rights, including the rights related to setting their own goals, access to vocational training to improve their employment opportunities, opportunities to work, promotion at work and equal pay, as well as their right to improvement in the quality of life guaranteed by the state (Abu-Habib, 1997).

In Jordan, the prevalence of disability is around 11% for those aged five and above (Department of Statistics, 2016), with no significant difference between males (10.89%) and females (10.30%). According to the 2015 census, PD’s prevalence among females was 4.2%. VI’s was 5.4% while HI’s was 3%.

As women with disabilities in Jordan have no privacy of marriage, shift work, and limited independence in housing and living (Al-Zboon, 2013), they are more likely to be fully dependent on their families (Abu-Habib, 1997). Because their disability puts extra costs on them in terms of supplies or medication and/or treatments, the need for providing steady incomes for women with disabilities, including working to provide help and assistance to ensure a decent standard of living becomes urgent (Beleza, 2003). Such needs can be satisfied through self-regulation strategies that can assist them in achieving their independence.

As there is a growing interest in research on women who have disabilities across the world, there has been little research into the SR of women with disabilities in the Middle East (Al-Zboon and Smadi, 2015). There is limited data on strategies that women use to gain greater independence and more autonomy (Wehmeyer et al., 2003) and this lack of research is more noticeable in countries such as Jordan, where there is an apparent overlap between local traditions, religious beliefs and local cultural perspectives on disability, where having a child with disability is a source of shame and in some cases children with disabilities are hidden away or excluded from public life (Turmusani, 1999). As a result, women with disabilities respond using several strategies to increase their involvement in life and education (McConnell, 1999) and SR is considered an important factor for success in several domains of life (McCullough & Willoughby, 2009; Chambers et al., 2007).

Women with disabilities use various techniques to respond to difficulties and barriers that they face, the most important of these barriers are stigma, social exclusion and local cultural factors. Goffman (1963) argued that the stigma of disability may extend to those around a person with disability. As a result of disability, people with disabilities become more reluctant to socialise with others and develop their own ways of socialising where their parents may act as ‘gatekeepers’ to avoid the negative reactions of others. Thus, the aim of this study was to investigate the perspectives of young women with disabilities on SR in Jordan.
and reveal the factors affecting the employment of SR strategies in everyday life in Jordan from the perspectives of young women. In this study, the term SR is used to refer to the self-directive processes and self-beliefs that enable women to transform their cognitive abilities into performance skills; e.g., goal setting, self-learning, self-evaluation, decision making, self-reinforcement, selecting and deploying strategies and self-monitoring. These self-regulatory skills help them to adapt to living with their disability in their society.

**Theoretical Framework**

Mithaug’s SR theory (1993) explains how to improve the adaptation of individuals in order to increase the likelihood of their access to resources in their environments. This theory describes the relationship between the individual and their adaptation to changes in their environment. It goes beyond them as to the mechanisms of solving problems and the performance of the solution, leading to adaptation and target maximum. Disability can be seen by others as a barrier to achieving goals or being accepted by society, and in some cases this results in people with disabilities being victims of violence (Goffman, 1963). The parents of women with disabilities face constant queries from outsiders about their daughter’s disability and the kinds of support and services they provided. However, parents’ fear of ‘courtesy stigma,’ where people who work or have stigmatised children are more likely to bear a courtesy stigma (Goffman, 1963), explains why some parents act as gatekeepers for their daughters and interfere in their choice of goals.

**Methodology**

This study was designed as a qualitative study. Sixteen young women, aged 18–22, with three types of disabilities (VI (4), HI (5) and PD (7)), were recruited using a snowballing technique.

**Ethics**

Using a consent form, the participants were fully informed about the study’s aims, their rights including the right to withdraw at any time, and an assurance of confidentiality. No real names were used in reporting the findings. Moreover, the research received ethical approval by the Institutional Review Board at the Hashemite University.
Data Collection and Analysis

Semi-structured interviews were used to collect the data, where interviews lasted 30–45 minutes.

The interview data were subjected to thematic analysis using the approach presented by Braun and Clarke (2006).

Results

How Disability Affects the SR of Women with Disabilities

PD appeared to have less impact than visual and hearing disabilities. The participants attempted to learn by themselves, evaluate, monitor and reinforce themselves, and make their own decisions. They perceived that their disability constrained their choice of subjects to study and influenced their goals, how they evaluated themselves and how they were seen by others. They had the impression that their disability influenced their self-reinforcement and their ability to make their own decisions:

– ‘I choose what to do all the time’.
– ‘Does anyone help you out with that?’
– ‘I ask for help when I need it’.
– ‘Do your parents choose for you or tell you what to do?’
– ‘Yes, they do’.

She explained the contradiction: ‘Do not forget that I am a disabled woman and I need help’ (L, PD). Although young women with disabilities want to organise their own lives, they must do so in the context of their disability and cultural attitudes to disability. Some participants realised that their disability set limits on their ambitions and adjusted their goals accordingly. When M (VI) was asked about setting goals taking into consideration her impairment, she replied: ‘I cannot forget that I am a blind person’.

Disability was one of the top factors that they had to take into consideration when setting their goals. Setting goals, as in the case of learning computer skills, was critical for them where disability was not seen as an obstacle.

‘I evaluate my progress towards my goals, but remember that we live in Jordan and I have to accept that I am a woman. When I set myself a goal, I have to bear in mind that I am visually impaired and it is difficult to get the proper machine to use. So
I am slow. I heard some people asking ‘do you need these skills?’ That was shocking and offensive.’ (M, VI)

Disability and gender had partial effects on their self-monitoring and self-reinforcement. The participants used self-monitoring skills to help them set and achieve goals, but they felt they had to reinforce themselves constantly in order to achieve their goals. Seeing their disability as motivation led to increasing their self-monitoring and self-reinforcement respectively:

‘I do monitor myself all the time but I am limited by what I can do. I mean, I have impairment and I cannot see everything, so I have to be careful and in some cases depend on what others say’. (M2, HI)

Decisions were influenced by the views of family members and their positions as women with disabilities. The participants reported that although they took other people’s opinions into account, they made their own decisions and based them on these goals, although they did not ignore the role of their social network.

‘I set my own goals and I take decisions for myself. I cannot simply ignore the role of others like my mother and father. They help me and I sometimes ask for their assistance. I cannot say that they do not help me but I try to take my own decisions’. (M2, HI)

Women with physical disabilities appeared to have a stronger voice in the making of decisions, which affected them more than those with visual or hearing disabilities. Thus, it is not surprising that mothers and elder sisters were the main influences on the participants’ decisions. In the local culture, mothers and sisters play a central role in the life of sisters: ‘My mother and sister always help me and choose what is better for me’.

**Obstacles Facing SR of Young Women with Disabilities**

The participants reported that their society, their disability and their social network hindered their attempts to establish SR. They indicated that they were not seen by their society as productive individuals and that they believed their disability prevented them from organising themselves. The tendency to underestimate the abilities of young women with disabilities was common to several actors and levels:
‘I do not feel I am popular and no one supports me. Sometimes I feel that when I want to do something, everything is against me. I know I am disabled but that does not mean that I do not deserve chances like others. They see my impairment rather than my abilities but that is not going to stop me from organising and planning my life’ (R, VI)

The participants reported that society underestimated their capability, as well as placing barriers in the way of their self-development and regulation. They reported that they were seen as women with a disability rather than as humans.

The participants felt that they did not have the same opportunities as women without disabilities and most indicated that this had a direct impact on their SR. They pointed out that the discrimination prevented them from self-learning and setting personal goals. The participants agreed that they wanted to set their own goals rather than having them decided by any other party:

‘I have to set goals for myself. I know that my society and other people around me will not be interested in my goals or help in any way as they see disability as a bad thing. But I insist on setting goals for myself because it is my life’. (S, PD)

The participants reported that society’s attitude to disability was the main barrier to them achieving their personal goals. In many cases the participants reported that attitudes to disability did not prevent them from setting goals, but did stop them from achieving their goals despite constant frustration:

‘There is constant frustration and that comes from society itself. I struggle all the time to be seen by colleagues and other people as a normal young woman. I am a normal young woman and I have a life and goals I want to achieve, so why do you stop me?’ (M, VI)

Disability was seen as a barrier to SR where it had prevented the participants from setting and achieving goals. Among the sample, it appeared that PD had less impact on SR than other disabilities. The women with a PD appeared to be able to set their own goals, monitor themselves, learn by themselves, evaluate themselves, make their own decisions and reinforce themselves.

Disability hindered the participants from taking control of their lives and achieving goals. As Kh. (PD) said: Yes, I set myself goals but I do not know how to implement or achieve them. I mean, in my case how can I play sports or swim?’ The participants with a HI seemed to feel that their impairment had less impact on their life than the participants with a VI; the group on whom disability had the greatest impact consisted of the individuals with a PD.
Those with a VI had set themselves the goal of memorising the Qur’an, the Muslim holy book, but their impairment hindered them from achieving this goal. The participants did not consider their disability as a hindrance to setting goals but they reported that it was a barrier to achieving them. Having a disability had an impact on the other components of SR, especially self-evaluation and self-reinforcement.

The participants pointed out that their social network, including family members, was a source of difficulty; the participants felt that there was no trust in their capabilities and it was a source of stress: ‘Not everyone believes in me and my abilities, I mean, in many circumstances I feel that I am alone and they do not understand me’ (D, VI).

The participants emphasised that they felt they were constantly under pressure from their social network: ‘I sometimes feel that I am watched all the time’. The participants linked the negative social attitude to disability with the lack of appropriate available support. They reported that they received poor support and were often not assisted in achieving goals. This was attributed by the participants to the providers of support, who tended to underestimate their abilities and as a result sought to define goals for them: ‘my family and friends support me but I cannot see that their support is sufficient’ (T, HI).

The participants felt that their social network responded to them with sympathy rather than believing in them and their abilities. This had a direct influence on the participants as they were seen as women with disabilities rather than human beings:

‘Yes, I need their help but do not want them to organise my life. I mean, they see my impairment not my abilities and start deciding and sorting things out for me. This is the last thing I want. I want their psychological support not their pity.’ (J, HI)

**Discussion**

Understanding the local cultural contexts in which the women with disabilities in the current sample operate is critical to interpreting these findings (Trimble & Fisher, 2006; Groce & Zola, 1993). The findings indicate that disability is seen from different local cultural perspectives, especially when disability disrupts an individual’s social life (Shiu, 2001) and leads to stress and low self-esteem (Shiu, 2001; Varni et al., 1996). The local cultural context, including religion, was a critical
influence on the extent to which they were able to self-regulate and this observa-
tion reflects findings by Watterson & Giesler (2012). Support can be understood
from two perspectives: first, support was identified by the participants as necessary
(Hasnain et al., 2008), something they sometimes ask for; then the ‘support’ rep-
resented parents who take full responsibility for their daughter’s behaviour and
future.

The findings suggest that the women with disabilities had less opportunity
for SR and experience more family interference than their non-disabled peers
as a result of cultural attitudes to disability, although a few participants claimed
to have more control (Kim-Spoon et al., 2013). The interference experienced by
people with a disability varies according to the nature of the disability (Groce,
1999), age and gender (Hasnain et al., 2008). Using local cultural perspectives to
understand and respond to disability becomes apparent when the person with the
disability is female and where their parents tend to play the role of gatekeepers,
and when their disability requires constant assistance from family members
(Al-Zyoud, 2012; Groce, 1999).

No evidence was found that the young women with disabilities suffered from
high social expectations (Muller & Louw, 2004; Groce, 1999); on the contrary, they
suffered as a consequence of the low expectations within their society and social
networks. Expectations varied according to the type of the disability (Groce, 1999)
and gender. It is worth noting that the socio-economic status of the participants
was not considered and this should be investigated in future research. It can be
concluded that disability in Jordan is still understood in terms of a charitable or
medical model, in which disability is seen in terms of the individual deserving pity
or suffering from a ‘problem’ in need of treating, respectively, rather than focusing
on providing women with disabilities with opportunities to develop and use their
capabilities and function independently (Villach & Llanos, 2007).

The opportunities for women with disabilities to self-regulate were directly
affected by their disability and their gender. These constraints influenced their
self-learning, self-evaluation, self-reinforcement, goal setting, decision making and
performance monitoring and limited their ability to take decisions for themselves
and set their own goals. Although the majority of the participants reported that
they were able to self-regulate, a deep analysis of their responses indicated that they
had only limited control over their own lives and this limitation was attributed to
their gender as female and the role of protection that had to be played by family
members based on local cultural perspectives (Hasnain et al., 2008). It appears that
families often act as gatekeepers for daughters with disabilities and this position
reflects a social view that women with disabilities should be protected by their
families. This protection extends to interference with women with disabilities’ SR and autonomy, raising again the urgent need for a better understanding of traditional beliefs, attitudes and practices towards disability (Groce, 1999).

Investigating factors that affect the SR of young women with disabilities represents a promising means to encourage them to have SR and enhance their participation in social life in order to achieve their independence and take their role in their society. It also provides women with disabilities with the responsibility to self-regulate and decides about their future where it rightfully belongs to the learners.

Limitations and Future Research

Although this study is a rare example of research into the situation of women with disabilities in Arab countries, some limitations should be taken into account. Firstly, there is a need to confirm the current findings in a larger sample. Secondly, data were only collected from young women with disabilities and this study does not represent the voices of the parties that were perceived to interfere with or play a role in regulating the lives of young women with disabilities, especially parents. Thirdly, the snowballing recruitment method used in this research is a potential source of bias where participants are more likely to recommend their friends or acquaintances and should be avoided in future research. Finally, there is an urgent need to explore the SR of women with disabilities in the light of the increasingly rapid flow of information, the social change taking place in Jordan and the waves of Syrian refugees who have entered the country in the last five years and to analyse the influence of socio-cultural factors.

References


The Use of Puppets in Bibliotherapy Classes in Order to Help Shape the Adaptive Behaviour of Pupils with Mild Intellectual Disabilities (Based on a Pedagogical Experiment Applying the Parallel Groups Technique)

DOI: 10.15804/tner.2017.47.1.21

Abstract
The world of the social experience and expectations of children with mild intellectual disabilities is very diverse. Such children do not always know how to cope with social expectations. In such situations they tend to withdraw or, conversely, behave improperly, in this way trying to mark their presence.

The paper presents a pedagogical experiment, during which puppets were used in bibliotherapy classes. The method has already proven effective when working with children with mild intellectual disabilities. The main aim of the project was to develop adaptive behaviours in children with mild intellectual disabilities to include creative actions and the skills of social interaction in their upbringing and school environment and among their peers and to encourage them to seek effective ways to deal with their own difficulties.

Keywords: mild intellectual disability, adaptive behaviour, puppets, bibliotherapy

Introduction

“Intellectual disability (intellectual developmental disorder) is a disorder with onset during the developmental period that includes both intellectual and adaptive functioning deficits in conceptual, social, and practical domains” (Diagnostic and
The Use of Puppets in Bibliotherapy Classes


Puppetry is a very old, traditional art form. With the help of puppets, the person teaching a class can easily focus children's attention on the goal to be achieved in the classroom (Naylor, Keogh, Downing, Maloney, Simon, 2007, pp. 290–292).

The advantages of working with puppets can be multiplied. “Now more than ever, puppetry has a role in building student motivation, providing opportunities to develop a love of language and literature, and so much more. Teachers should be excited by the possibility and the power of puppets” (Peck, 2005, p. 77), writes Helena Korošec (2012, p. 44). She says that “The puppet can be a teacher who gives lessons, guides the children, and their knowledge in a playful way, at the same time influencing mutual communication between the teacher and the children. Furthermore, the puppet is the child's friend that they trust and become very attached to. It helps them overcome fear in certain situations, e.g. at the dentist, and encourages them in moments of insecurity”. Puppets stimulate the learning process, directly to the active learning in many areas (O'Hare, 2005, p. 234). At the same time, they communicate to children the rules and principles of good coexistence with others.

At a time when there are very many different and diverse toys, it could seem that children are not entertained by puppets and that working with such toys will not bring anything valuable to educational work. However, ongoing research into the use of puppets in the teaching process shows their high efficiency. An example of this is the study carried out by Renea Arnold and Nell Colburn (2012, pp. 20–21), who demonstrated that preschool children had a lot of fun when they read together with the puppet. Children said, among other things: “Lessons are a lot more fun”; “Thanks to the puppets I understand the world around me better” (Naylor, Keogh, Downing, Maloney, Simon, 2007, p. 294).
Results of other studies have been presented by Ronit Remer and David Tzuriel (2015, pp. 356–365). They carried out research on a group of preschool children, and their aim was to determine children's level of motivation and commitment to learning and achievements related to language learning.

**Research Methodology**

**General Background and Research Sample**

In the study, the method of pedagogical experiment using the technique of parallel groups was applied, during which puppets were used in the bibliotherapeutic intervention.

The aim of the research was to determine the effectiveness of activities during which puppets were used in the context of the adaptive behaviour of pupils with mild intellectual disabilities.

The aim was achieved by answering the question: “What is the effectiveness of activities where puppets are used, in shaping the adaptive behaviour of children with mild intellectual disability?”

In view of the above, the following research hypothesis was assumed: “Using puppets during bibliotherapeutic activities will positively influence changes to the adaptive behaviour of children with mild intellectual disability”.

The empirical research referred to included the following variables: dependent variable, independent variable and intervening variable (respondents’ age and gender). The consequence of establishing the research problems was determining the dependent variable as one which was considered as the level of adaptive behaviour of students with mild intellectual disabilities.

The results obtained by the students in the experimental and control groups, developed with the help of the Student Behaviour Chart by Barbara Markowska, were considered to be the efficiency indicators of classes conducted with the use of puppets.

The independent variable was a programme of activities in which hand puppets were used. The activities in class were based on rhymed fairy tales by Agnieszka Łaba (2008; 2010; 2013) and their subject matter was presented with the use of puppets. The puppets introduced various topics, including the most significant ones in the children's immediate environment, e.g.: not accepting the state of being different from others, being laughed at, their aversion to working in a group, not respecting generally accepted principles and decreasing positive attitudes to compulsory education.
The criterion for selecting children to be surveyed, both for the experimental and control groups, was being a pupil of grades 1–5 of primary school in the Subcarpathian Region. After analysing school documentation, 96 pupils from grades 1–5 were selected for the study. Two groups were created: the experimental group (27 girls, i.e. 56.25% of the respondents and 21 boys, i.e. 43.75% of the respondents) and the control group (29 girls, i.e. 60.42% of the respondents and 19 boys, i.e. 38.58% of the respondents). Each group consisted of 48 pupils aged 7–13.

Instrument and Procedures

In this study, the method of pedagogical experiment with the technique of parallel groups was used. In both groups initial (pre-test) and final (post-test) measurements were applied. The tool of measurement was the Student Behaviour Chart, by Barbara Markowska, which consists of five categories of behaviour: motivation (12 items), anti-social behaviour (12 items), inhibition (12 items), socialization (12 items) and sexual interests (2 items). For the purposes of the study, the category “sexual interests” was omitted as it was not the subject of research. Observation in the classroom was a supporting technique.

The pupils from both the experimental and control groups at the first stage of the study were tested by the Student Behaviour Chart by Barbara Markowska. Then, within eight months, 24 meetings were conducted (two teaching hours, i.e. 90 minutes per week) for each of the classes in the experimental group, based on the previously prepared curriculum with the use of puppets.

The second stage of the study involved re-examining the two groups with the Student Behaviour Chart by Barbara Markowska.

Data Analysis

The gathered empirical data was subjected to quantitative and qualitative processing with the use of the statistical programme STATISTICA 10. Data analysis and the probability of employing the statistical test was subordinated to accepted objectives and research problems. Regarding the quantitative data, arithmetic means and standard deviations were calculated. In order to specify the typical behaviours of the children with mild intellectual disability, tests of the significance of difference for independent pairs as well as for dependent pairs in the case of studying the differences between the pre-test and post-test results in the group, were also employed.
Research Results

Detailed data concerning the pre-test and post-test behaviour of the children with mild intellectual disability in the experimental and control groups, including arithmetic means and standard deviations and also the value of the test of differences of t-Student for independent pairs between the compared samples, on the basis of their level of statistical significance, are presented in Tables 1 and 2.

Table 1. Comparison of the experimental group with the control group – Pre-test of students’ behaviour

<table>
<thead>
<tr>
<th>Category</th>
<th>Pre-test of students’ behaviour</th>
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<tbody>
<tr>
<td></td>
<td>Experimental Group</td>
<td>Control Group</td>
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<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Motivation</td>
<td>30.89</td>
<td>9.54</td>
</tr>
<tr>
<td>Anti-social behaviour</td>
<td>32.91</td>
<td>12.70</td>
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<tr>
<td>Inhibition</td>
<td>29.37</td>
<td>6.95</td>
</tr>
<tr>
<td>Socialization</td>
<td>34.83</td>
<td>7.89</td>
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</table>

T-test for independent samples. M – arithmetic mean; SD – standard deviation; t° – t-Student (t-test); Marked differences are significant at p < 0.05*; Marked differences are close to statistical significance between (0.1 > p > 0.05) ~ Source: own research

Table 2. Comparison of the experimental group with the control group – Post-test of students’ behaviour

<table>
<thead>
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<th>Category</th>
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<tr>
<td></td>
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<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Motivation</td>
<td>31.02</td>
<td>9.55</td>
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<tr>
<td>Anti-social behaviour</td>
<td>32.87</td>
<td>12.67</td>
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<tr>
<td>Inhibition</td>
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<td>6.96</td>
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<tr>
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T-test for independent samples. M – arithmetic mean; SD – standard deviation; t° – t-Student (t-test); Marked differences are significant at p < 0.05*; Marked differences are close to statistical significance between (0.1 > p > 0.05) ~ Source: own research

The general conclusion of this analysis demonstrates comparable levels of output categories of behaviour of the pupils (cf., Table 1 and 2). The arithmetic means and standard deviations in both groups were more or less at the same levels.
This does not mean, however, that the results obtained here can be generalized and referred to the entire population of pupils from these classes. They provide justification to carry out further analysis in the case of using the experimental procedure to induce changes in pupils’ behaviour.

Tables 3 and 4 summarize the arithmetic means, standard deviations, the value of the test of differences of t-Student for dependent pairs and their levels of confidence (on the basis of their level of statistical significance) for the result of the individual category of pupils’ behaviour obtained by the participants in the experimental and control groups at the first and second stage of the research.

The comparison of assessment of the degree of results variation at the output level (pre-test) in the socialization category of the pupils participating in classes with the use of puppets with that at the final level (post-test) (cf., Table 3), i.e. after the implementation of the programme, leads to the conclusion that this category was at a statistically significant level (p<0.006). The category of motivation was also at a statistically significant level (p <0.012). This means positive verification of the adopted hypothesis. At the level of difference similar to a confidence level (at the level of difference close to the level of statistical significance) in the inhibition category (p~0.083), differences in the arithmetic means between the pre-tests and post-tests favoured the latter. The anti-social category was non-statistically significant (p>0.159) and its arithmetic means are characterized by a significant convergence on the overall results of the compared levels (cf., Table 3).

| Table 3. Comparison of Pre-test of students’ behaviours with Post-test – experimental group |

<table>
<thead>
<tr>
<th>Category</th>
<th>Experimental Group</th>
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<tr>
<td></td>
<td>Pre-test</td>
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<tr>
<td>Socialization</td>
<td>34.83</td>
<td>7.89</td>
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</table>

T-test for dependant samples. M – arithmetic mean; SD – standard deviation; t° – t-Student (t-test); Marked differences are significant at p < 0.05*; Marked differences are close to statistical significance between (0.1 > p > 0.05) ~ Source: own research
### Table 4. Comparison of Pre-test of students’ behaviours with Post-test – control group

<table>
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<tr>
<th>Category</th>
<th>Control Group</th>
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<th>Means Comparison</th>
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<tbody>
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<td></td>
<td>Pre-test</td>
<td>Post-test</td>
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<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Motivation</td>
<td>31.77</td>
<td>8.79</td>
<td>31.83</td>
</tr>
<tr>
<td>Anti-social behaviour</td>
<td>30.12</td>
<td>12.34</td>
<td>30.08</td>
</tr>
<tr>
<td>Inhibition</td>
<td>27.93</td>
<td>7.05</td>
<td>27.89</td>
</tr>
<tr>
<td>Socialization</td>
<td>35.56</td>
<td>6.91</td>
<td>35.58</td>
</tr>
</tbody>
</table>

T-test for dependent samples. M – arithmetic mean; SD – standard deviation; t° – t-Student (t-test); Marked differences are significant at p < 0.05*; Marked differences are close to statistical significance between (0.1 > p > 0.05) ~ Source: own research

In the control group (cf., Table 4), all the categories of behaviour under examination show a lack of statistical significance. The arithmetic mean values are at a favourable level in the case of the final tests. These particular categories show a tendency towards minimum changes at the specific levels, although they lack statistical difference.

Summing up the results obtained which differentiate the levels of input and output related to the behaviour of the pupils in the experimental and control groups, as well as the relationships between the two groups, it is clear that they are comparable. However, at the first stage, the participants in the experimental group showed research higher values of arithmetic means in the following categories: anti-social behaviour and inhibition. The values in the categories: motivation and socialization at the pre-test stage in the experimental group were at a level similar to the level in the control group. In the experimental group, the intensive implementation of the bibliotherapeutic programme, both theoretical and practical, contributed to the positive changes in individual categories included in the general characteristics of the pupils’ behaviour.

It is also an interesting fact that among the students in the control group, who did not participate in the programme with the use of puppets, there had been a positive change in the post-tests, which means that systematic schooling, curiosity connected with the cognitive experience and an increase in school maturity associated with age, contributed to positive changes.
Discussion

A willingness to participate in social contacts and the scope of ability to do this is very different among children with mild intellectual disabilities. The research presented in this publication only confirms this. The study was conducted with a group of insecure and over-sensitive children, who could not cope with failure and disappointment. Among them there were particular individuals with reduced motivation who rebelled against generally prevailing standards and principles. On the basis of the conducted observations, it was concluded that the problem mainly concerned issues of low socialization, reduced motivation, emerging anti-social behaviours and inhibition.

During the classes, an important element constituted learning coexistence and interaction with peers, cultural behaviour and respect for the work of others. The pupils’ socialization, at a statistically significant level, was carried out with the help of hand puppets, which showed various forms of behaviour and their positive and negative consequences. The children listened to what the puppets said. The fact that the activities were carried out in a systematic way made the children wait for them from one week to the next. Following the work plan, clear guidelines of working in a group consistently led to the development of those behaviours that are socially desirable. Children with mild intellectual disabilities are not always interested in the experiences of others. Sometimes their behaviour is cruel to objects, animals and people. Here the inappropriate behaviour was limited by the awakening of social sensitivity.

Another category, the result of which was also at a statistically significant level, was motivation. This category includes those behaviours that define the duties of children towards the duties and tasks which are set down for them. The problem with the awakening of motivation in children with mild intellectual disabilities is not, as it turned out, an easy task. In the examined group of children, it was hard at the beginning to initiate a task and the children approached it very reluctantly. They generally did not understand why it was them who had to perform a certain task, much less what it was needed for. The classes helped to enhance motivation in the examined group of children. Efforts were made in a manner appropriate to the needs of the children in order to sustain the psychophysical state of experiencing, excitement and self-confidence.

In the category of inhibition, which was at a level close to being statistically significant, there was also a positive change – the children became less fearful. They became more self-independent and increased their confidence in the activities undertaken. They were able to control their anger better, and they behaved
differently when they experienced failure. It can be stated that timid children, who are afraid of speaking, develop self-confidence when working with puppets (cf., Lockey, 2007). In view of the above, it is not surprising that all teachers agree that puppets improve communication skills (Naylor, Keogh, Downing, Maloney, Simon, 2007, p. 296; O’Hare J., 2005, pp. 213–218).

It is important that in the remaining category, i.e. anti-social behaviour, even though the result is not statistically significant, some changes in behaviour were observed. One can even risk the statement that the children had become more sensitive to the presence of others in their environment.

The use of puppets in the bibliotherapy classes proved to be effective and the classes themselves were very enjoyable for both the children and the person who conducted them. The teacher prepared stories and arranged for a series of meetings. They were placed in special bags along with carefully chosen puppets (cf., Lockey, 2007). During the classes and reading aloud, each child held a hand puppet and in this way became the character from the story. Each story was read out loud (sometimes twice) and was followed by a discussion. The teacher asked questions related to the story that led the children to the main problem, in which the characters were involved. The pupils also asked their own questions, presenting them in a very vivid way, e.g., a puppet asked another puppet some questions. This was followed by a discussion on the characters and their behaviour. Sometimes the children together with the teacher made their own puppets, which were then used for their own productions.

Such productions facilitate memorizing content whereas standards and principles to be conveyed are more easily absorbed by children. It seems that children establish a dialogue with the puppets, listen to them more willing and even talk to them (cf., Lockey, 2007).

In future, research with the use of puppets while working with children with mild intellectual disability should be extended to include a greater number of participants.

Conclusions

Developing adaptive and mainly social skills is not simple because the very nature of intellectual disability includes a number of dysfunctions and disorders related to the senses, musculoskeletal system and psychological processes. It also affects the functions of intellect, and apathy and passivity appear, as well as a lack of developed higher feelings.
The aim of the research was to implement hand puppets to work with children with mild intellectual disabilities during bibliotherapeutic classes using rhymed fairy tales.

Through targeted activities and properly organised workshops with the use of puppets, as well as taking into account the child’s mental and physical capabilities, children’s adaptive behaviour can be influenced.

Despite some research on the usage of puppets in work with children – it is difficult to find many of those who would use both: rhymed fairy tales and puppets through biblioterapeutic agenda in the group of children with mild intellectual disabilities. In literature, there are books which are based on therapeutic and psycho-educational help of children having different issues. None of them are based on rhymed stories – that is why they were created and reinforced by puppets in the group of children with mild intellectual disabilities.

It should be stressed that rhymed stories are more meaningful to the child and it is more likely that the plot would be more visualized and memorized.

It seems that every change of behaviour requires a certain community, certain conditions and most importantly – time. Changes in behaviour are not always immediately evident. It depends on the general suitability of the individual and possibly the person who carries out the project. Success sometimes means a tendency towards positive change.

References
Preschool Education
Divergent Tasks in the Diagnosis of Wisdom in Older Preschool Children

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Abstract
The author of the article, popularising education for wisdom as a basis for comprehensive development of pupils, looks for methods supporting the development of wisdom from childhood. Stimulation of wisdom in early education can be a challenge to teachers due to a lack of theoretical and practical guidelines. Thus, the author developed and used in studies specific diagnostic tools for analysing the capabilities and skills of older preschool children in using wisdom in their thinking. The article describes the study results concerning the application of divergent tasks stimulating thinking in children in different ranges of intelligence (based on R.J. Sternberg’s concept) and conclusions from the studies conducted based on a randomly selected sample (N = 366), e.g., that used tasks make it possible to differentiate the competences and intellectual capabilities of the children in question.

Keywords: divergent task, preschool education, wisdom diagnosis

Introduction
In pedagogical theory, the concept of emancipatory pedagogy is becoming more and more popular. Within this concept, individuals develop an awareness of themselves, the ability to engage in dialogue and work with others, a reflective approach to their surroundings, and the ability to solve problems by asking questions and looking for ways to solve problems on their own (Czerepaniak-Walczak, 2006).
Such an education in relation to preschool children is popularised by D. Waloszek. Her publications contain references to the assumptions and principles of emancipatory pedagogy relating to the fact that the child becomes independent “…of the unnecessary, paralysing power of adults…” (Waloszek, 2014, p.176, transl. E.P.). She also describes the ways in which teachers can create the conditions for stimulating comprehensive development of children by provoking their activity, curiosity and interest. As a result, children go beyond the boundaries of their intellectual, social and physical capabilities to integrate different areas of activity, improve and expand their abilities, and construct new knowledge.

Acquiring knowledge in an independent and active way is the basic assumption of the concept of constructivism in education. It perceives mental processes as the rational processing of information from the environment, based on previous knowledge, skills and experience. As D. Klus-Stańska emphasises, this is the basis for specific education within which “…thanks to the problem-oriented structure of tasks and activities … instead of listening…” pupils “…try to think and act…” (Klus-Stańska, 2013, p. 36, transl. E.P.). In such situations, learning and development are based on emotions, interpretation, and search for the meaning of events and phenomena, which is very far from the concept of acquiring knowledge provided by others in accordance with adaptation pedagogy.

The bases for education supporting the emancipation of pupils during the learning process and the development of their own competence and capabilities quoted above are in accordance with the concept of the pedagogy of creativity, which is based on open tasks (cf., Szmidt, 2012) and education for wisdom based on activating tasks (cf., Płóciennik, 2016).

When analysing the possibilities for developing wisdom during the course of education, a few basic assumptions should be considered:

- Wisdom as a complex individual characteristic or a cognitive structure can be developed in any person from the earliest years (Meacham, 1990; Pietrasinski, 2001; Sternberg, Jarvin, & Grigorenko, 2009);
- The occurrence of wise thoughts and actions in an individual depends on analytical, practical and creative intelligence and certain personality traits (Sternberg, 2003);
- According to R.J. Sternberg, wisdom guarantees proper application of intelligence and creativity when solving different problems, as it allows for consideration and combination of personal achievements and the general good – as such, it is part of practical intelligence and its application leads to the successful implementation of socially useful ideas (Sternberg & Davidson, 2005, pp.327–340);
Wise thinking is a complex process consisting of different types of thinking: reflective, dialogical and dialectical (Sternberg et al., 2009, pp.106–110).

Wisdom, however, as a complex personality trait or a property of the mind, escapes the simple measurement that prevails when the capabilities and competence of children are evaluated in preschool testing. So far, Polish methodological textbooks and companions for preschool teachers have offered no guidelines on stimulating and developing wisdom in children. This poses a theoretical and organisational problem with the introduction of the concept to pedagogical practice. Thus, the author of this article has undertaken to develop a set of tasks allowing for determination of the capabilities and limitations of older preschool children when carrying out activities requiring them to think in an analytical, creative, reflective, dialogical and dialectical way, and to verify these tasks in practice, through scientific studies.

**Research Methodology**

Education for wisdom is based on different open and activating tasks, thanks to which children have an opportunity to analyse and evaluate the conditions of the situation presented in the task, analyse the information and their experiences, generate ideas for solving the problem, and evaluate the solutions proposed. These tasks should stimulate children’s thinking, both ambiguous and incomplete, and provide them with the conditions for subjective interpretation and a strategy for acting. The use of such tasks allows children to try their hand at things, identify their strong and weak points, understand the principles of purposeful and ordered activities, identify the relationships between the aim of an activity and its result, combine different forms of an activity and the stages of idea implementation, acquire skills in organising the conditions of an activity, and invoke responsibility for task performance.

The studies described herein were conducted on a sample of 366 older preschool children in three different cities. The subjects of the studies were the children's responses in response to the instructions given for the test tasks, and the problems of characters presented in the educational materials – pictures showing children's problems in different situations. These pictures served several purposes: they depicted scenes understandable to the children (e.g. positive and negative behaviour of children interacting with their peers); maintained the children's interest in the content through their ambiguity (e.g., by showing negative behaviour of heroes, which had to be changed in order to avoid danger); encouraged them to
give elaborate answers (e.g., through interpretation of the pictures); to give advice (e.g., in relation to the selection or change of food products), and inspired the children to look for solutions to the problems of the characters in the pictures (e.g., with a ball stuck in a tree). Such tasks support the maintenance of balance when developing and stimulating different skills and capabilities of preschool children, being part of not only analytical but also practical and creative intelligence. Moreover, they take into consideration different ways of solving problems through analysis, critical and creative thinking, and references to practical activities all at the same time.

The pictures and the problems they showed were discussed with the children individually. Face-to-face conversations with the children about the pictures were designed to reveal the children’s independent, divergent and wise thinking when solving tasks. The main difficulty when developing the research problem selected was its novel character, and the subsequent lack of objectivised pedagogical tools for analysing and developing wisdom in thinking. Moreover, tools supporting the development of wisdom are complex and there are many correct responses, which is why their evaluation is multidimensional. However, open tasks are effective when measuring the ability to compare, work out, construct and assess, when giving reasons, identifying causes, generalising, drawing conclusions, creating, analysing and synthetizing; when assessing the level of divergent thinking (fluency, flexibility and originality of thinking), ingenuity, tolerance for ambiguity, and the ability to find remote associations and redefine problems (cf., Karwowski, 2006). This is why open tasks were the basis for the selection of tools applied in the study described.

When selecting and configuring the tools, and when assessing products for the purpose of empirical verification of the tasks described, the suggestions and guidelines of M. Karwowski (2006), J. Brzeziński (2000) and Cz. Nosal (1990) were taken into consideration. Moreover, tasks developing and diagnosing the wisdom of preschool children were verified based on the thesis advanced by R.J. Sternberg that dominant and developed creativity, evaluative cognitive style (the tendency to evaluate and compare) and progressive style (readiness to go beyond rules and tolerance for ambiguity) are predictors of wisdom in thinking and acting (cf., Sternberg, 1996).
### Table 1. Test tasks used with children aged 5–6 years, to develop and analyse wisdom in thinking.

<table>
<thead>
<tr>
<th>Categories of dependent variables</th>
<th>Tasks (indicators of dependent variables)</th>
<th>Proposed scoring (raw scores)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dv 1: ANALYTICAL INTELLIGENCE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The ability to generalise (Dv1a)</td>
<td>Determining the topic of a picture (tasks 2 and 8)</td>
<td>1 point for 1 title</td>
</tr>
<tr>
<td>The ability to connect causes and effects (Dv1b)</td>
<td>Identifying the danger resulting from the behaviour of the characters in the pictures (task 4)</td>
<td>1 point for an idea</td>
</tr>
<tr>
<td>The ability to give reasons (Dv1c)</td>
<td>Justifying an evaluation of the attractiveness of tasks (task 9)</td>
<td>1 point for an idea</td>
</tr>
<tr>
<td>The ability to define characteristics (Zz1d)</td>
<td>Indicating similarities and differences between the child’s own characteristics and behaviour and the characteristics and behaviour of a wise man (task 10)</td>
<td>1 point for an idea</td>
</tr>
<tr>
<td><strong>Dv 2: PRACTICAL INTELLIGENCE WITH WISDOM (REFLECTIVENESS, DIALOGICAL AND DIALECTICAL THINKING)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive courage (Dv2a)</td>
<td>Selection of a difficulty level from three options (task 1)</td>
<td>1 point for the selection of a difficult task</td>
</tr>
<tr>
<td></td>
<td>Willingness to perform additional tasks (task 1)</td>
<td>2 points for expressing willingness</td>
</tr>
<tr>
<td>The ability to give advice to others (Dv2b)</td>
<td>Coming up with advice for the characters in the pictures (tasks 3 and 7); Coming up with advice for the hero of a story (task 5)</td>
<td>1 point for each piece of advice</td>
</tr>
<tr>
<td>Dialogical thinking and empathy (Dv2c)</td>
<td>Considering the difficult situation of the hero of a story, indicating their emotions (task 5)</td>
<td>2 points for references to the emotions of the hero, “assuming the role” – situations and emotions of the hero</td>
</tr>
<tr>
<td>Dialectical thinking (Dv2d)</td>
<td>Synthesis of a thesis and an antithesis (task 7)</td>
<td>4 points for a synthesis</td>
</tr>
<tr>
<td>Self-reflection and the ability to assess oneself (Dv2e)</td>
<td>Expressing one’s own preferences with regard to the tasks proposed (task 9); Assessing oneself in terms of similarity to a wise man (task 10)</td>
<td>1 point for indicating advantages or disadvantages of the solutions to the tasks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 point for each characteristic indicated</td>
</tr>
<tr>
<td>Categories of dependent variables</td>
<td>Tasks (indicators of dependent variables)</td>
<td>Proposed scoring (raw scores)</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------------------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td><strong>Dv 3: CREATIVE INTELLIGENCE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ideational fluency (Dv3a)</td>
<td>Coming up with as many pieces of advice as possible for the problem “How to get the ball out of the tree?” (task 3); Coming up with as many pieces of advice as possible for the hero of a story (task 5); Coming up with as many ideas as possible for a change of behaviour of the characters in the pictures (task 4); Coming up with as many metaphors as possible (task 6); Coming up with as many pieces of advice as possible for the problem “How to reconcile the healthy, disliked food with the unhealthy food you like?” (task 7)</td>
<td>1 point for each idea</td>
</tr>
<tr>
<td>Adaptation flexibility (Dv3b)</td>
<td>Looking for the best ideas and eliminating the worst ones (task 3); Generalising the content of the picture, considering the qualitative diversity of the ideas (task 8)</td>
<td>1 point for each idea</td>
</tr>
<tr>
<td>Originality (Dv3c)</td>
<td>Providing unique ideas in each group (in each sentence)</td>
<td>1 point for a unique idea in a given group</td>
</tr>
<tr>
<td>The ability to make transformations (Dv3d)</td>
<td>Suggesting a change of negative behaviour to positive behaviour (task 4); Suggesting a change of an unhealthy or disliked product (task 7)</td>
<td>1 point for each idea</td>
</tr>
<tr>
<td>The ability to use metaphors (Dv3e)</td>
<td>Using a metaphor with justification (task 6)</td>
<td>1 point for each idea</td>
</tr>
<tr>
<td>The ability to refine (elaboration) (Dv3f)</td>
<td>Justifying the evaluation of the usefulness of the child’s own idea (tasks 3 and 6)</td>
<td>2 points for each justification with elaboration</td>
</tr>
</tbody>
</table>

Source: Own work.


Research Results

The methodological principles (canons) provided by the literature demand objectivity, reliability of the study description, sufficient justification and verification of hypotheses and assumptions, and accuracy of the descriptions made and judgments formed. This also applies to the research and diagnostic work of teachers, particularly when they employ techniques of testing pupils’ knowledge, skills and thinking (cf., Niemierko, 2005; Palka 2006).

The accuracy of tasks used in a test is confirmed when the test measures the indicators assumed and when the test results are correlated to external criteria. One of the four ways\(^1\) of justifying the accuracy of tests used in social studies is their theoretical (basic) accuracy. This consists in demonstrating to what extent an individual has a given characteristic or property, revealed in accordance with the study assumptions, using a given test. This tool is considered accurate when its results allow for discussion of the intensity of a phenomenon the researcher is interested in. On the other hand, the reliability of a research tool determines its measurement accuracy and stability under different conditions\(^2\). Analysis of reliability mostly concerns the extent of the repeatability of the measurement of the same characteristic, while the application of reliability analysis in studies facilitates their increased quality. The criteria for analysis of the test tasks used in the presented study were whether they were accurate and reliable (given also that they were being applied for the first time in preschool education).

When describing the results of these studies, it must be stated that the difficulty and novelty levels of the tasks performed were the same for all children. The studies were carried out between March and June of 2016, in three cities referred to herein as P, Ł, and W. Thus, it can be said that the same research tool and the same didactic measures were used three times, and that certain intervals between studies using the same test were maintained. Considering also the fact that the group of children from Ł achieved slightly higher results (50.5 on average) than the group of children from W, where the last studies were conducted (49.77 on

\(^1\) The remaining three criteria are: diagnostic, prognostic and content accuracy (Brzeziński 2000, p.17; Kubielski 2006, p.157).

\(^2\) There are four methods for evaluating (estimating) the reliability of tests: estimation of reliability (e.g., two studies with the use of the same test, one by one); estimation of consistency (two studies with the use of parallel test forms or calculation of the correlation between test halves); estimation of stability (two studies with the use of the same tests conducted at a certain interval), and estimation of their consensus (with reference to two competent judges assessing test answers) (e.g., Brzeziński 2005).
average), it can be said that the study dates (i.e., the process of maturation and development of children over four months) were not a factor impacting on the results.

An analysis of raw scores in the medium range and of the standard deviation has indicated that the tasks and their scoring in all groups of children produced distributions close to normal, and also in the case of groups diverse in quantitative terms and results suggesting larger or smaller individual differences in the groups³.

**Figure 1.** An analysis of study results from the perspective of normal distribution

To verify the reliability of the measurement scale, an additional method for scaling the intra-content conformity of Cronbach’s Alpha was applied. Analysis of the study results with the use of this statistical method indicated that all the groups achieved satisfactory measurement conformity in different tasks. As such, it can be stated that the tasks proposed are reliable and adjusted to the capabilities of children from different environments and in the three different areas in which the studies were conducted.

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³ With average results: (P; Ł; W) 49.55; 50.5; 49.72 and standard deviation: (P; Ł; W) 19.6; 21.75; 20.55.
Table 2. Results of the reliability analysis of the set of test tasks.

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Total position correlation</th>
<th>R2</th>
<th>α after the removal of the position</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L</td>
<td>P</td>
<td>W</td>
<td>L</td>
</tr>
<tr>
<td>Task 1 in total</td>
<td>.21</td>
<td>.29</td>
<td>.31</td>
<td>.07</td>
</tr>
<tr>
<td>Task 2 in total</td>
<td>.24</td>
<td>.09</td>
<td>.18</td>
<td>.09</td>
</tr>
<tr>
<td>Task 3 in total</td>
<td>.53</td>
<td>.46</td>
<td>.54</td>
<td>.31</td>
</tr>
<tr>
<td>Task 4 in total</td>
<td>.64</td>
<td>.45</td>
<td>.71</td>
<td>.57</td>
</tr>
<tr>
<td>Task 5 in total</td>
<td>.63</td>
<td>.33</td>
<td>.46</td>
<td>.44</td>
</tr>
<tr>
<td>Task 6 in total</td>
<td>.36</td>
<td>.46</td>
<td>.41</td>
<td>.18</td>
</tr>
<tr>
<td>Task 7 in total</td>
<td>.30</td>
<td>.47</td>
<td>.50</td>
<td>.14</td>
</tr>
<tr>
<td>Task 8 in total</td>
<td>.43</td>
<td>.10</td>
<td>.51</td>
<td>.23</td>
</tr>
<tr>
<td>Task 9 in total</td>
<td>.45</td>
<td>.45</td>
<td>.36</td>
<td>.29</td>
</tr>
<tr>
<td>Task 10 in total</td>
<td>.59</td>
<td>.33</td>
<td>.54</td>
<td>.40</td>
</tr>
</tbody>
</table>

Source: Own work.

Some of the older preschool children successfully complete tasks in the assessment and evaluation of the behaviour of characters presented in educational situations, and that they are able to: give advice on improving or changing the behaviour of the characters presented while referring to universal standards and values; transform ideas and determine the usefulness of their own ideas; exercise self-reflection and come up with metaphors and syntheses based on distant notions. Examples of the children’s ideas about the individual tasks are presented in Table 3.

Table 3. Children’s wisdom in thinking – examples of children’s responses

<table>
<thead>
<tr>
<th>Example task</th>
<th>Responses of children taking part in the studies</th>
</tr>
</thead>
</table>
| Assessment of the behaviour of others, with justification | (The behaviour is bad because…) …their clothes get dirty because they are kneeling.  
(The behaviour is bad because…) …they’re playing in the street.  
(The behaviour is good because…) …they cooperate together.  
(They’re playing correctly because…) …they’re sharing building blocks. |
<table>
<thead>
<tr>
<th>Example task</th>
<th>Responses of children taking part in the studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advice on the problem of “How to get the ball out of the tree?”</td>
<td>Stand on tiptoes and reach with your hand. Make a ladder, climb a rope. Wait until it falls down. Ask this man to bring a ladder.</td>
</tr>
<tr>
<td>Assessment of the usefulness of the child’s own ideas in solving a problem</td>
<td>The best advice: Ask a tall child because hardly any adult wants to lift the child up and the stick might be too short. Ask a man (passing by) because he is tall, and the children could fall down. The worst advice: Give a child a piggyback because the child could step on somebody’s face. Ask a man (passing by) because he is either going to work or in a hurry.</td>
</tr>
<tr>
<td>Advice on changing negative behaviour to positive behaviour (behaviour transformation)</td>
<td>A character is holding a coloured pencil in their mouth: <em>Hold two things in one hand – take the pencil with this hand or put the pencil here.</em> A character has a rope around their neck while playing “Horse and carts”: <em>Use a toy (as a horse) or make the horses hold the rope (shows: with their hands) and do not put it around their necks.</em> A character is playing in the kitchen: <em>Play using a toy cooker.</em> Toys are scattered around the kitchen floor: <em>Put these (dishes from the floor) here (on the table)</em></td>
</tr>
<tr>
<td>Coming up with a solution to the problem: “<em>What to do when you can choose between unhealthy but tasty doughnuts and a healthy but disliked apple?”</em></td>
<td>If she likes bananas, I’d give her a banana (instead of an apple and a doughnut). So that she eats a half of the doughnut and the whole apple, as she likes doughnuts she could eat one but then the whole apple. She can eat an apple with a doughnut because it’s healthy. Eat yoghurt – it’s healthy and sweet.</td>
</tr>
<tr>
<td>Coming up with metaphors: “<em>A wise man is like... because...</em>”</td>
<td>…computer because he’s almost never wrong …high-speed Internet because he thinks fast …a good lion because… he only fights with enemies …a wizard because he knows and can do everything</td>
</tr>
<tr>
<td>Self-reflection: “<em>In what ways am I similar to a wise man and in what ways am I different from him?”</em></td>
<td>I’m similar to a wise man because… I tell someone, a friend, no to do this. I don’t climb trees, I don’t ride my bike up steep hills, I don’t cross the street when the light is red. I’m not similar to a wise man because… I sometimes get bored and I don’t tidy up after myself. I shout at my Mum and I tell her I’ll move out.</td>
</tr>
</tbody>
</table>

Source: Own work.
Conclusions

After using diverse statistical analyses to analyse the reliability and accuracy of the tools in stimulating and diagnosing the children's wisdom in thinking (in accordance with the WICS concept by R.J. Sternberg) in the studies, it turned out that:

- With the use of prepared sets of open tasks activating thinking, wisdom and wisdom predictors in preschool children can be diagnosed – such tasks make it possible to differentiate the competences and intellectual capabilities of the children in question;
- Divergent tasks used in studies are appropriate for preschool children – most of these tasks were performed by children taking part in the studies, with greater differences only appearing in the case of tasks in metaphorical thinking and idea transformation;
- The studies indicated that even such difficult tasks as creating metaphors and transforming ideas and solutions can be used in preschool education, as some children are indeed able to perform them. This is proved by the examples provided above;
- The studies conducted can undergo further statistical and qualitative analyses as the basic condition has been confirmed: normal distribution close to the representative distribution, developed based on raw scores and the measurement cohesion of the tasks employed;
- It will be possible to treat the conclusions from the studies conducted based on a randomly selected sample (N = 366) as justified, taking into consideration other logical and methodological principles.

According to the guidelines of the psychologists and pedagogues popularising the concept of wisdom development, wisdom is shaped under adequate conditions and when the subject takes a conscious and active part in different educational and social situations. Simple and intuitive knowledge is also related to the child's own development, so its use, stimulation and further development should become standard in the educational process.

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4 Studies analysing the creativity of individuals usually do not achieve such distribution and have to be transformed into so-called sten scores (cf., Szmidt 2003, p.53).
References


The Effect of Using Electronic Mind Mapping on Achievement and Attitudes in an Introduction to Educational Psychology Course

Abstract

The study aimed to investigate the effects of electronic mind mapping on achievement and attitudes in an educational psychology course. This study used a quasi-experimental research design with pre-test and post-test control groups. The study sample consisted of 65 students, 34 students in the control group and 31 in the experimental group. The experimental group was taught using electronic mind mapping, while the control group was given traditional classroom instruction. To achieve the study objective, an achievement test and electronic mind mapping attitude scale were used. The results of the study showed a statistically significant difference between the two groups in achievement test scores and attitudes, in favor of the experimental group attributed to using electronic mind mapping.

Keywords: electronic mind mapping, achievement, attitudes

Introduction

Among many different methods that may be used in the constructivist approach, one of the most interesting and influential aids is mind mapping, which was developed by Tony Buzan in the late 1960s. Mind maps are representational tool constructs representing an individual’s ideas, concepts, and information about a certain topic that he/she has in mind, using graphs, keywords, images and
Ahmad M. Mahasneh

diagrams in a two-dimensional environment to illustrate relationships between them (Balim, Everkli & Aydin, 2007; Everkli, Inel & Balim, 2010)

Biktimirov and Nilson (2006) defined mind mapping as “visual, non-linear representations of ideas and their relationships.” Despite comprising a network of connected and related concepts, mind mapping can equally encompass the connection of any idea with another or others. The creation of a mind map requires free-form, spontaneous thinking to fulfill the aim of finding creative associations between ideas. Mind maps are, therefore, essentially association maps. The modern formalized mind mapping techniques are commonly attributed to Tony Buzan, whose technique incorporated the use of lines of differing thickness, colors, diagrams and pictures, as a method of knowledge memorization and recollection. Mind mapping is generally used in the association of ideas, although it is also used to aid memory retention despite the possibly marginal advantages (Farrand, Hussain & Hennessy, 2002). Thus, although creating an association of ideas is the main use of mind mapping, it is generally accepted that remembering a diagram is easier than remembering a description.

This concept is, however, disputed by others who hold the opinion that the format in which knowledge or information is presented is secondary to the learning process (Pressley et al., 1998). In support of the mind map technique, Buzan & Buzan (2000) and Weideman & Kritzinger (2003) claim that the brain is directed along a learning pathway by showing relationships and concepts together through keywords. Trevino (2005) supports the technique which Buzan expounded as using the brain totally. This claim is accepted by Margulies (1991), who agrees that the mind mapping method as a learning technique stimulates and integrates functions of the left and right brain hemisphere processes at the same time, while Practor (2002) points out an additional student aid because it is also an excellent note-taking technique. However, Boley (2008) states that mind maps are relatively less known and used as an alternative creative technique to concept maps. Warwick and Kershner (2006) challenge this statement, noting frequent instances of interchangeability in the use of both mind maps and concept maps and saying that in recent years the emphasis has moved from concept maps to mind maps, which are two dimensional visual tools whereby a central idea or concept is visually linked to associated ideas or concepts illustrated graphically. Mueller, Johnston, Bligh and Wilkinson (2002) and Streible (2003) define mind maps as a central idea with associated thoughts and concepts presented as linkages which, by using this technique, illustrate visually the relationships between complex ideas and processes.

Zhao (2003) gives a comprehensive definition of mind maps as visual tools for developing complex conceptual structures displayed in a format that helps indi-
individuals use critical thinking and creativity to absorb new information, described by Rostron (2002) as a topic, idea, or concept displayed in a visual representation technique using keywords, shapes, and images. This is a particularly effective technique since the brain naturally uses its merging and correlation function to remember and associate information or ideas. Mind maps are a practical learning aid for young children as well as adults – only basic materials such as a large sheet of paper and a few colored pencils being required to produce them by hand. Following the fairly recent acknowledgement of the importance of visual presentation of knowledge, appropriate software for learning and teaching techniques has been developed, at the forefront of which there is Mind Manager Software, launched by Mindjet Software, aiding thinking and organization of information in a visual, nonlinear way to develop ideas and jot down notes of any relevant tangential thoughts associated with the initial key article (Edsman, 2008).

The current study

Thinking skills are essential in all aspects of life and they are constantly required in the preparation of teaching techniques and diversification of teaching strategies that encourage and motivate students to think, and consequently should be at the top of the educational goals in teaching students thinking techniques. There have been few studies in the Arab world and Jordan in particular, in the field of electronic mind mapping as a way of learning and retaining knowledge at the meta-cognitive level. Therefore, the current study is designed to answer the following specific questions:

Question One: Is there any effect of the electronic mind mapping method on student achievement scores in the Introduction to Educational Psychology course?

Question Two: Is there any effect of the electronic mind mapping method on student attitudes toward the Introduction to Educational Psychology course?

Methodology

Participants

Participants in the current study were 65 (20 male, 45 female, mean age 20 years) students of the Faculty of Educational Science at the Hashemite University in Jor-
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dan, registered for an Introduction to Educational Psychology course in the first semester of the academic year 2016/2017. The participants were randomly assigned to two study groups (34 in the control group and 31 in the experimental group).

**Instruments**

**Achievement test**

The dependent variable in the current study is the student achievement test before and after the experiment, which comprised 30 multiple-choice items about a unit of learning theory. The highest score was 30 and the lowest was 0. The difficulty coefficients ranged from 0.55 to 0.83 and their discrimination coefficient values ranged from 0.25 to 0.70. The Cronbach alpha for the total achievement test was 0.83.

**Electronic mind mapping attitude scale**

The electronic mind mapping attitude scale was developed by the researcher. It consisted of 17 items (e.g., Using electronic mind mapping in class has increased my achievement, I love using electronic mind mapping), rated on a 5-point scale from strongly agree (5) to strongly disagree (1). The Cronbach alpha for the total electronic mind mapping attitude scale was 0.85.

**Electronic mind mapping class plan**

The third unit of learning theory in the introduction to educational psychology course was prepared based on the electronic mind mapping model and implemented in the experimental group while the control group was taught the same content using traditional methods. The researcher asked the students to create mind maps by using a computer program for the learning theory and to submit them to the researcher after a topic teaching session and gave advice to the students regarding the mind mapping that they had created. The current study was conducted over a period of four weeks. The class met for 45 minute sessions three times a week.

**Data collocation and analysis**

The participants were chosen and divided into two groups by random selection, the control group being taught the theory of learning subjects with the use of
traditional methods, while the experimental group was taught the subjects of the theory of learning using the electronic mind mapping method. Both the control and experimental groups were given the achievement test and mapping attitudes scale before and after the experiment. Analysis of the study questions used means, standard deviation, independent sample t-test, and ANCOVA.

**Results**

Based on the data obtained by the achievement test, the students’ mean and standard deviation for pre-test scores for the control and experimental groups are presented in Table 1.

**Table 1. Means and standard deviation for the results of achievement test pre treatment**

<table>
<thead>
<tr>
<th>Achievement Test</th>
<th>Group</th>
<th>N</th>
<th>Means</th>
<th>S.D</th>
<th>df</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>34</td>
<td>11.96</td>
<td>6.07</td>
<td>63</td>
<td>0.504</td>
<td>0.61</td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>31</td>
<td>12.64</td>
<td>4.74</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As seen in Table 1, the mean score for the control group pretest was 11.96 and standard deviation was 6.07, while the mean score of the experimental group was 12.64 and standard deviation 4.74. Independent sample t-test results showed that there were no significant differences between the control and experimental groups (t=0.504, P=>0.05) in the achievement test score.

**Study question one:** Is there any effect of electronic mind mapping methods on student achievement score in the Introduction to Educational Psychology course? Means and standard deviations of the student achievement scores on the post-test were calculated and they are presented in Table 2.

**Table 2. Means and standard deviation for the results of achievement test after treatment**

<table>
<thead>
<tr>
<th>Achievement test</th>
<th>Group</th>
<th>N</th>
<th>Means</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>34</td>
<td>15.93</td>
<td>5.35</td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>31</td>
<td>20.76</td>
<td>4.85</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 shows that there are differences between the control group and the experimental group in the student achievement scores. To determine the signifi-
cance of the differences, ANCOVA was conducted, and the values are presented in Table 3.

Table 3. ANCOVA determining the significance of the differences between the control group and experimental group in achievement scores

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of squares</th>
<th>df</th>
<th>Means square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achieve 1</td>
<td>730.181</td>
<td>1</td>
<td>730.181</td>
<td>49.869</td>
<td>0.00</td>
<td>.44</td>
</tr>
<tr>
<td>Method</td>
<td>313.059</td>
<td>1</td>
<td>313.059</td>
<td>21.381</td>
<td>0.00</td>
<td>.25</td>
</tr>
<tr>
<td>Error</td>
<td>907.808</td>
<td>62</td>
<td>14.642</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected total</td>
<td>2016.154</td>
<td>64</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(*Statistical Significance Level of 0.05)

Table 3 shows that there are statistically significant differences in the achievement post-test between the control and experimental groups due to the electronic mind mapping method.

Study question two: Is there any effect of the electronic mind mapping method on student attitudes toward the Introduction to Educational Psychology course?

Means and standard deviations of the student attitudes toward the Introduction to Educational Psychology course scores on the post-test were calculated and the values are presented in Table 4.

Table 4. Means and standard deviation for the results of attitudes toward the Introduction to Educational Psychology course after treatment

<table>
<thead>
<tr>
<th>Attitudes</th>
<th>Group</th>
<th>N</th>
<th>Pretest</th>
<th>posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Means</td>
<td>S.D</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>34</td>
<td>24.90</td>
<td>6.39</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>31</td>
<td>27.17</td>
<td>5.21</td>
</tr>
</tbody>
</table>

Table 4 shows that there are differences between the control group and the experimental group in the student attitudes toward the Introduction to Educational Psychology course. To determine the significance of the differences, ANCOVA was conducted, whose results are presented in Table 5.
Table 5. ANCOVA determining the significance of the differences between the control group and experimental group in the students' attitudes toward the Introduction to Educational Psychology course

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of squares</th>
<th>df</th>
<th>Means square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitudes</td>
<td>835.473</td>
<td>1</td>
<td>835.473</td>
<td>4.813</td>
<td>0.00</td>
<td>0.07</td>
</tr>
<tr>
<td>Method</td>
<td>15575.572</td>
<td>1</td>
<td>15575.572</td>
<td>89.726</td>
<td>0.00</td>
<td>0.59</td>
</tr>
<tr>
<td>Error</td>
<td>10762.581</td>
<td>62</td>
<td>173.590</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>27173.63</td>
<td>64</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(*Statistical Significance Level of 0.05)

Table 5 shows that there are statistically significant differences in the attitudes toward the Introduction to Educational Psychology course achievement post-test between the control and experimental groups due to the electronic mind mapping method.

Discussion

The study aimed to investigate the effects of electronic mind mapping on student achievement and attitudes to the Introduction to Educational Psychology course. The results showed that there is a statistically significant difference between the two groups in achievement test scores and attitudes in favor of the experimental group.

The mind mapping technique is based on the constructivism concept, which focused on how humans make meaning in relation to the interaction between their experiences and their ideas; mind mapping makes the student become involved in concepts, information and events through discussion, asking questions and obtaining information. Mind maps are student aids in expanding critical and lateral thinking skills, assimilating new information, developing their conceptual schemas and finding solutions through practice.

The experimental group prepared mind maps concerning the unit Learning Theory illustrated means of illustrating and capturing the mental constructions used by the students, and their understanding.

The preparation of mind maps with regard to the learning theory subjects is expected to facilitate and enhance student learning by enabling their correlation of diverse subjects and concepts. One of the various teaching techniques in which the students are actively involved under teacher guidance is the use of constructive
learning in practicing the mind mapping technique, which is thought to be more effective than traditional methods in developing student skills and success in knowledge acquisition and retention.

Although traditionally drawn on white paper using colored pens or pencils, computer technology is used today to create electronic mind maps, which are easy and practical to make, revise, review, and save, as well as producing attractive presentations.

Reporting on the mean achievement scores of students using the mind map technique in science classes in a constructivist learning environment, Dhindsa and Makrimi-Kasim (2007) noted significantly higher scores than those obtained by students who were taught in the traditional manner. Also, Buzan and Buzan (2003) reported that students’ achievement in science was improved by using a mind map technique.

Compared to most traditional methods that emphasize “knowledge transmission from expert teacher to novice students”, the mind map teaching technique, which involves students’ active participation in the learning process, is therefore more student-centered and supports the hypothesis that the mind map technique can improve students’ ability to enhance their knowledge-structure organization, and consequently improve their learning outcomes.

However, the valuable result of the mind map teaching technique used in a constructivist learning environment, particularly the students’ organization of knowledge, is not yet clearly understood.

Students taught environmental contents with the use of traditional methods often experience difficulty in comprehending some of the concepts and their correlation with related information studied in previous courses. This conclusion is fully supported by the evidence of results from the academic achievement test results, which show that the experimental group students obtained higher grades than those of the control group.

The results of the present study are confirmed by research undertaken by others in the field including Abi-El-Mona & Abd-Ei-Khalick (2008); Amma (2005); Harkirat, Makarimi & Anderson (2011), in which the academic achievement of the students taught with the use of constructive learning techniques based on preparing mind maps is higher than that of the traditionally taught students.

In light of the presented study results, the following relevant suggestions and recommendations are made:

1. Student teachers should be given pre-service training courses in the use of the electronic mind mapping technique; this would be beneficial to both teachers and students.
2. The present study sample consisted of university students, but similar studies are recommended to assess achievement results of younger pupils taught mind mapping using the hand drawing method, as well as students in other grades being taught to use the electronic mind mapping technique.

References


Appendix 1

Figure 1. Example of electronic mind maps created by students