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Erratum: In the article by Seung-Hwan Ham, Sung-Ho G. Ahn, Yun-Kyung Cha, Mi-Kyung Ju, Sunah Kim, Hara Ku, Sun-Kyung Lee, Young Serk Park, entitled "Principal Instructional Leadership and Teaching for Learner Autonomy: A Multilevel Analysis of the Case of South Korea" published in "The New Educational Review" Vol. 33, No. 3, we did not include the following information "This work was supported by a National Research Foundation of Korea grant funded by the Korean government (NRF-2011-330-B00159)".



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## Editor's Preface

The fourth number of *The New Educational Review* in 2013 is the thirty four issue of our journal since the start of its foundation in 2003. In this issue there are mainly papers from: Belgium, Czech Republic, Iran, Poland, Serbia, Slovak Republic, Slovenia, Spain, Taiwan, and Turkey, because our journal is open for presentation of scientific papers from all over the world.

In the present issue the Editor's Board have proposed the following subject sessions: Social Pedagogy, Didactics, Pedeutology, Special Pedagogy, and Sociology.

The subject session "Social Pedagogy" consists of nine articles. Hikmet Yazici in his study sought to examine the relationships among academic staffs' gender, age and anxiety sensitivity with a sample of practicing academic staff. In their paper Stanislav Michek, Milan Pol and Martin Chvál focus on peer review used by schools as a potential means of support for mutual learning and the development of staff professionalism. In the article by Medera Halmatov there are the results of the investigation into future family concept in pictures drawn by students studying in preschool teaching. The article by Sabrina Lešnik, Michaela Brumen and Milena Ivanus Grmek deals with different attitudes of parents toward learning foreign languages and whether there is a difference in their opinions depending on their level of education. In the presented case study by Karmen Pižorn and Mateja Dagarin Fojkar, parents are involved in the planning and implementing of lowering the foreign language learning starting age from 9 to 6. The paper by Luz Ortega, Rosa Cordón-Pedregosa, and Antonio Sianes details a method for determining the collaboration factors in activities of Global Citizenship Education at university through the prioritization of experts' preferences of collaboration. In their study, Mahtab Pouratashi, Hamid Movahed Mohammadi, Chang Zhu, Ahmad Rezvanfar, and Seyyed Mahmoud Hosseini examined the influences of agricultural students' self-efficacy beliefs and test anxiety on their achievement motivation and academic performance. Ewa Ogrodzka-Mazur compares the results of studies conducted in 2005/06 and 2012/13 on teachers working in kindergartens, primary, lower- and

upper-secondary schools, as the issues of the implementation of intercultural education in the Polish-Czech borderland. The BPAQ and Cyber-Bullying Tolerance questionnaires were used in the research conducted by Katarína Hollá and Viera Kurincová on a sample of 788 elementary school pupils of the 8<sup>th</sup> and 9<sup>th</sup> grades. The study shows an increase in verbal aggression, hostility and anger in the pupils.

In the subject session “Didactics” we publish eight articles. František Tůma, and Michaela Píšová present the results of analysis of PhD dissertations defended abroad and in the Czech Republic in the years 2006–2012 in the field of foreign language didactics. The paper by Dušanka Ž. Obadović, Ivana Rančić, Stanko Cvjetičanin and Mirjana Segedinac describes research carried out to analyse a relation between implementation of simple experiments in teaching sciences and pupils’ positive attitude towards learning physics. In their article, Del Pilar Quicios García, Luisa Sevillano García and Isabel Ortega Sánchez describe some of the results obtained in the framework of the research project that focuses on the academic use of the mobile phones by Spanish students in 2012. The contribution by Saša Jazbec presents theoretical starting points for viewing reading from the perspective of scientific disciplines and these are supported by empirical data on the subjective concepts of reading literary texts among future teachers of foreign languages. The learning styles and their initial diagnostics in the process of the student’s learning are described in the article by Zdeňka Krišová and Miroslav Pokorný. The paper by Kana Marie Havigerová, Kateřina Juklová, Jiří Haviger deals with the possibility of using a screening method for the assessment of intellectual giftedness at preschool age by two groups of persons – nursery teachers and parents. Beata Dyrda characterizes results of triangulated qualitative and quantitative research concerning institutional and individual support for gifted students’ development in Polish schools. The article by Kateřina Kostoláyová describes a new form of e-learning – adaptive e-learning.

In the subject session “Pedutology” we publish seven articles. The aim of the study presented by Olga Šušoliaková, Jindra Šmejkalová, Markéta Paprštejnová, Lenka Hodačová, Eva Čermáková is to analyse the quality of life of primary school teachers and firemen-rescuers. The basic notional category and the leading motif of the study presented by Alina Szczyrek-Boruta is social experience of candidates for teachers, grounded on the social psychology development in the context of the reality experienced by the individual, the meaning applied to experiences, and in the perspective of intercultural education. The study by Francisco Raso-Sánchez describes the use of Information and Communication Technologies in education, with a particular emphasis on rural schools, covering topics that range from the insight of teachers on the necessary adaptation of their work methods, to the actual

use of ICT in the classroom. The purpose of the article by Rafał Piwowarski is to identify potential links between information about teachers and the academic achievement of schools. Kate Tzu-Ching Chen and Sabina Chia-Li Chen present the results of their study conducted to investigate vocational high school EFL teachers' professional knowledge and teaching efficacy from teachers' perspective. The paper by Vladimíra Petrášková describes a quantitative study focusing on testing pre-service mathematics teachers' financial literacy at the start of their studies. Lenka Rovňanová presents partial results of the research identifying demands on the performance of professional competences in the school practice in teachers with various length of practice.

The subject session "Special Pedagogy" consists of the article by Dimec D. Skribe and K. Vlahinja in which the authors try to find out the perceptions of special education teachers about their own practice of science assessments and their actual practices.

In the subject session "Sociology" Katarzyna Juszczyk-Frelkiewicz presents selected aspects of broader sociological empirical research into the issues of family and the phenomenon of cohabitation conducted among the students of the University of Constantine the Philosopher in the Republic of Slovakia and of the University of Silesia in Katowice, Poland.

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 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 requirements placed on our website: [www.educationalrev.us.edu.pl](http://www.educationalrev.us.edu.pl) – Guide for Authors.





2021 New  
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Review

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**Social  
Pedagogy**



## **Relationships between Anxiety Sensitivity of Academics and Some Variables such as Gender, Age and Personality**

### **Abstract**

Anxiety sensitivity (AS) has been defined as the fear of symptoms of anxiety. AS is connected with psychological and demographic variables. The author of this study sought to examine the relationships among academic staffs' gender, age and AS with a sample of 355 practicing academic staff (*female=133, male=222*). Results showed that female academic staff have greater AS than their male colleagues. Results also revealed statistically significant relationships between age, moving away from social activities and AS. Implications for research and practice are discussed.

**Keywords:** *anxiety sensitivity, gender, age, personality.*

### **Introduction**

Anxiety sensitivity (AS) is about physical and emotional symptoms of anxiety considered to have harmful consequences (Reiss, Peterson, Gursky, & McNally, 1986). There are two basic approaches to AS occurrence. One of them is the trait model of AS (Reiss & Haverkamp, 1996), the other is the model which emphasizes learning processes (Schmidt, Lerew, & Joiner, 2000). The trait model emphasizes that AS may grow in time and may be observed in individuals at high or low levels. This approach shows that some condition-oriented learning processes are also effective in the development of AS. Learning based approach shows that AS is caused by stressful life events which cannot be controlled or predicted by the individual.

AS is attributed to Reiss' (1991) expectancy model of fear. Reiss' expectancy model shows that there are three fundamental fears defined as sensitivity. These are the fear of injury, the fear of anxiety, and the fear of negative evaluation. This model is defined as anxiety fear-sensitivity (Reiss, 1991). AS reinforces the fear and anxiety reactions and functions significantly in the etiology and maintenance of anxiety disorders (Taylor & Cox, 1998). There is an interesting theoretical differentiation between fear and AS. AS is defined as an excessive fear that arises from beliefs and symptoms which will be experienced by the individual (Mantar, Yemez, & Alkin, 2010). Accordingly, AS is considered as an inhibitory factor against fear and other anxiety disorders (Reiss, Peterson, Gursky, & McNally, 1986).

There is a relation between personality traits and psychopathology. The question of what kind of personality traits has vulnerability to psychopathology has been the focus of systematic research. In this context personality traits have an important function for comorbidity in psychopathology. Personality traits may be the reason for vulnerability or the results arising from a disorder. Examination of personality traits matters in terms of revealing etiology (Watson, Gamez, & Simms, 2005).

Personality traits are related to AS. It has been examined what kind of personality traits has an effect on AS. These types of studies are vital for preventing the potential risk factors regarding personalities that may cause AS. In the previous research, the relation between AS and Eysenck's personality model (Zvolensky et al., 2003) and five-factor personality traits (Naragon-Gainey, 2010) was examined and significant relations were determined in some dimensions. The study aims to examine the relationship between AS and type A personality trait.

Type A is one of the personality typologies researched in the psychology field. Individuals having this type of personality are success-oriented, aggressive, impatient with time-delay, competitive and hasty (Strickland, 2001, p.652). No reason is needed for the observation of these traits (Friedman & Rosenman, 1974). Type A involves the behaviors of emotion and activity. This type of personality is defined as continual efforts in a short time and developing reactions to other individuals or events (Jamal, 2005). When compared with other personality types, Type A people show their aggression and hostile behaviors more often (O'Connor, 2002). These individuals may show aggression in different ways in their workplace (Baron, Neuman, & Geddes, 1999). Because the workplace also involves competition, the rate of maladaptive behaviors is higher (Masters, Lacaille, & Shearer, 2003). Type A individuals consider type B, which comprises calmer people, as frustration source because type B individuals are calmer and not hasty. Unlike Type A individuals do not perceive themselves under pressure even if they work really

hard. Type B differs from Type A in three dimensions; they have a lower level of competitiveness, they do not beat the clock as Type A do and they do not show overreaction when facing obstacles (Burger, 1993).

Gender is another variable that AS is related to (Keogh & Birkby, 1999). Some studies have shown that there are differences between the AS points of males and females and these are caused by gender perception regarding social processes. Other studies have indicated that the AS points of males and females differ only in certain dimensions (e.g., physical concerns) not in all dimensions (Zvolensky, McNeil, Porter, & Stewart, 2001). Longitudinal studies prove that AS is considerably related to genetic factors (Zavos, Gregory, & Eley, 2012). There is a higher risk of developing AS among women due to their innate tendencies. (Jang, Stein, Taylor, & Livesley, 1998). The responses which have genetic bases and rely on physical, cognitive and social concerns among women are evaluated as an interaction of genetics and environment (Taylor, Jang, Stewart, & Stein, 2008).

There are some studies which focus on the relationship between AS and age. However, there are no comprehensive findings regarding observation levels of AS between adults and children. Like in adults, some scales have been developed in order to examine AS in children and adolescents. (e.g., Childhood AS Index CASI; Silverman, Fleisig, Rabian, & Peterson, 1991). Childhood is a risky period in terms of the development of AS and other problems related to that (Mattis & Ollendick, 1997). Individual differences based on innate tendencies, learning experiences and parent reinforcements have an influence on developing AS in childhood (Watt & Stewart, 2000).

The study aims to examine the relationships between type A personality traits and anxiety sensitivity of academic staff who have success orientation and work in a competitive atmosphere. Other purposes of the study are to examine whether or not AS differs depending on gender and age variables.

## **Method**

### **Participants**

The sample consisted of 355 academic staff (female=133, male=222) from seven universities in Turkey. The academic staff were of the mean age of 33.11 years (SD=7.83) and an average of 9.33 years of teaching experience (SD=7.51). Most of the respondents (i.e., 40.8%) were married. The level of income was assessed with a self-report screen, in which 71.5% of the sample reported low, 19.1% medium, 6.8% high and 2.0% very high.

### **Instruments**

**Personal Information Form:** this form, developed by researchers, includes variables such as age, gender, marital status, degree, income level, academic title and conflict in the workplace. **AS Index-Revised (ASI-R):** the presence of AS symptoms was assessed by the ASI-R (Şafak Çakmak, 2006), a self-report questionnaire. For each of the 36 items, numerical values from 1 to 5 were assigned to indicate the severity of AS. The four-factor solution accounted for 47.63% of the total variance. The ASI-R demonstrated excellent internal consistency ( $\alpha = 0.93$ ). Each subscale of the ASI-R also showed adequate internal consistency (Cronbach's alpha for Factors I-IV = 0.88, 0.82, 0.79, and 0.80, respectively).

**Type-A Personality Inventory:** the Likert-type scale developed by Batıgün and Şahin (2006), taking into account the relevant literature, consists of 25 items. For each of the 25 items, numerical values from 1 to 5 were assigned to indicate the intensity of an individual's Type-A behaviors. In the validity analysis of the scale, four factors were found (Importance attributed to work, Moving away from social activities, Importance attributed to speed and Importance attributed to timing) explaining 44.3% of the total variance. The reliability coefficient based on half of the test technique was calculated as 0.83. Cronbach's alpha reliability coefficients for the sub-factors of the scale ranged from 0.79 to 0.48. Cronbach's alpha reliability coefficient for the whole scale was .86.

### **Procedure**

Academic staff were given the opportunity to complete the questionnaire either in the office or at home. Supervisors were informed of the nature of the study and instruments in order to help the staff with any problems. The supervisor did not give information about the specific nature of the research, but informed the staff that the study was exploring issues of individuals' perceptions about themselves. The researchers applied the assessment tools in certain programs in order to exceed time limitation by determining the availability of the academic staff. Due to being in group format, getting enough contact with each individual was an issue in the face to face assessment. Data was collected by means of applying it to the academic staff working in the same program simultaneously.

### **Statistical Analysis**

The Statistical Package for the Social Sciences (SPSS 15.0) program was used for statistical analysis. Student's t test was used for the analysis of groups, correlation coefficient and multiple regression were used to associate the personality type, and age with AS.

## Results

As shown in Table 1, the women showed a tendency to score higher than the men on global anxiety ( $t_{353}=2.43, p=.016, d=0.13$ ) and fear of respiratory symptoms scores ( $t_{353}=2.86, p=.004, d=0.15$ ).

**Table 1.** AS differences depending on gender

Variable	Male		Female		<i>t</i>	<i>df</i>	<i>p</i>	Cohen'd
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
FRS	2.14	.86	2.41	.84	2.86	353	.004	0.15
FCS	1.86	.71	1.99	.71	1.68	353	ns	0.09
FCD	1.75	.65	1.88	.68	1.78	353	ns	0.10
FPOAS	2.39	.74	2.53	.77	1.74	353	ns	0.09
Total	2.04	.66	2.21	.64	2.43	353	.016	0.13

FRS=Fear of respiratory symptoms, FCS=Fear of cardiovascular symptoms, FCD=Fear of lack of cognitive control, FPOAS=Fear of publicly observable anxiety symptoms

The relationships between type A behavior, age and, AS are presented in Table 2. The importance attributed to work, moving away from social activities, and the importance attributed to speed were positively associated with AS, whereas age was negatively related to AS.

**Table 2.** The relationship between AS, type A personality and age

Variable	1	2	3	4	5	6	Mean	SD
1. AS	–	.25**	.85**	.14*	.07	-.11*	2.10	.65
2. IAW		–	.24**	.54**	.39**	-.03	2.81	.58
3. MASA			–	.08	.04	-.07	1.92	.78
4. IAS				–	.43**	.14*	3.32	.65
5. IAT					–	.02	3.60	.79
6. Age						–	33.10	7.83

AS= AS, IAW= Importance Attributed to Work, MASA= Moving Away from Social Activities, IAS= Importance Attributed to Speed, IAT=Importance Attributed to Timing

Linear multiple regression analysis was conducted to determine how type A personality and age explain AS selected as dependent variables (Brace, Kemp, & Snelgar, 2003, p.212). The Durbin-Watson test and auto-correlation was evaluated in the analysis and the resulting value (1.86) was found within the margin of the

expected values (1.5–2.5). Multiple regression analysis was conducted using the Enter method showed that the established model was meaningful ( $F_{5,349}=183.08$ ,  $p < .001$ ).

**Table 3.** Regression model summary in which independent variables predict dependent variables

Model	R	R <sup>2</sup>	$\Delta R^2$	SEE	Variation Statistic				
					$\Delta R^2$	$\Delta F$	$df_1$	$df_2$	p
1	.85	.72	.72	.35	.72	183.08	5	349	.001

SEE=Std.Error of the Estimate.

As seen in Table 4, one personality factor (moving away from social activities,  $\beta = .83$ ,  $p < .05$ ) and age ( $\beta = -2.27$ ,  $p < .05$ ) significantly predicted AS (cf., Table 4).

**Table 4.** Regression Model Summary explained by independent variables

Model		UC		SC	t	P
		B	SE	edilmiş katsayılar		
				$\beta$		
Model 1 1 1	Constant	.66	.14		4.74	.001
	IAW	.01	.04	.01	.28	.77
	MASA	.70	.03	.83	28.64	.001
	IAS	.07	.04	.07	1.84	.066
	IAT	.01	.03	.01	.27	.79
	Age	-.05	.01	-.07	-2.27	.024

UC = Unstandardized Coefficients. SC= Standard Coefficients

## Discussion

One of the purposes of the study was to determine whether or not AS differs depending on gender. The total anxiety points of the women were considerably higher than those of the men in the study. The points of the women were also dramatically higher than those of the men according to fear subscales regarding the respiration, which is a dimension of AS. No significant difference among the genders in other dimensions was determined. Females have a higher level of anxiety than males according to some previous studies (e.g Keogh, 2004; Peterson



& Reiss, 1992). Studies reveal that AS is observed in the dimension of physical concerns among females when compared to males (Stewart, Taylor, & Baker, 1997). The AS profile is strongly related to self-report measures of pain in females (Keogh, Barlow, Mounce, & Bond, 2006). Consequently, a subjective part of responses based on personal expressions may be remarkable.

In a study carried out considering the subscales, while the points of females on physical concerns were lower than those of males, their global AS was higher (Keogh & Birkby, 1999). Some variables may have an effect in more widespread observation of AS in females. In a meta-analytical study, it was reported that having other anxiety disorders is one of the significant reasons for the observation of higher AS in females (Olatunji and Wolitzky-Taylor, 2009).

While it is generally accepted that there are gender-based differences in AS, some studies, although limited in numbers (i.e., Silverman, Fleisig, Rabian, & Peterson, 1991; Silverman, Goedhart, Barrett, & Turner, 2003), emphasize that there are no significant differences between the genders. In a study similar to those, no significant differences in terms of the points of general AS and fear of physical symptoms between the genders were determined (Zvolensky, McNeil, Porter, & Stewart, 2001). The studies have revealed that the relationship between AS and gender can be explained by interactions based on individual differences (Lawyer, Karg, Murphy, & Dudley McGlynn, 2002).

In this study, the relationships between AS and gender were examined. The revealed result shows that there is a negative relationship between age and AS. Namely, the older the person is, the lower their AS is. The relationship between age and AS has been put forward in studies in two different ways. Some studies show that the structures related to AS and associated variables have similar characteristics between the young and adults (Olatunji & Wolitzky-Taylor, 2009.) Nevertheless, some study findings reveal that AS differentiates within the developmental period (Bravo & Silverman, 2001).

Another aim of this study was to examine at which level the type A personality traits predict AS. The revealed result shows that only moving away from social activities among the type A personality traits significantly explains AS. The importance attributed to work, speed and timing does not significantly explain the anxiety level. This result shows that the individuals having AS have trouble in establishing close social contacts (Lilienfeld & Penna, 2001). In a study carried out on university lecturers, it was determined that the social support points decreased based on the increase in the type A personality points (Jamal & Baba, 2001). In another study conducted on a similar group, it was determined that negative emotionality situations were common between male and female lecturers

(Wright, Newman, Meyer, & May, 1993). Also, in a study conducted to examine the relationship between personality traits and aggressive behaviors, it was determined that type A behavior caused aggressive behaviors only in provocative conditions (Bettencourt, Talley, Valentire, & Benjamin, 2006).

In previous studies, AS was generally examined by associating two different personality structures. These are five-factor personality and Eysenck's personality models. Cox et al. (1999) determined that AS was correlated with the Five-Factor Personality model. Within this scope, it was determined that AS shows a positive correlation with neuroticism and a negative correlation with extraversion. In some other studies, a strong correlation was determined between AS and one of the five-factor model structure negative emotionality. In different studies, some correlations were found between AS and other dimensions of the five-factor personality structure (Naragon-Gainey, 2010).

In the study conducted in six different countries on 2785 people, AS was associated with Eysenck's personality dimensions and it was determined that it showed a significant correlation with neuroticism. Neuroticism is a personality dimension expressing negative emotions of different nature. Significant correlations were determined between AS and extraversion and social desirability dimensions. The sub-dimensions of AS showed a negative correlation with psychoticism dimensions (Zvolensky et al., 2003).

The results of these studies showed that AS has a significant correlation with the neuroticism dimension representing negative emotionality. Negative emotionality is also correlated with psychiatric symptoms and some personality traits. Anxiety, anger and such negative emotionality conditions are among the basic characteristics of type A personality structure. No study findings examining the correlation between AS and type A personality have been cited in the literature. Therefore, the discussion concerning the results of this study is limited. Both findings related to other personality traits and the findings revealed in this study show that the correlations between personality traits and AS should be examined with comprehensive and longitudinal studies.

In summary, in this study, the total AS points of the females was found higher than those of the males. A negatively significant correlation was determined between age and AS. Of type A personality traits, only the dimension of moving away from social activities significantly predicts AS. This situation shows that there is a significant correlation between some demographic variables and the AS of personality structures.

This study has some limitations. The fact that the study group is not extensive and the responses are based on self-reports is one of the limitations. The fact that

the studies examining correlations between personality traits, especially the type A personality structure, and AS are insufficient restricts the comprehensive discussion of the findings. Further studies should be carried out by taking more variables into account and in a longitudinal pattern. Furthermore, type A personality traits should also be taken into consideration in the process of prevention and treatment of AS.

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## Peer Review in School Self-evaluation: Cultivating Skills in Data Use

### Abstract

This paper is focused on peer review used by schools as a potential means of support for mutual learning and the development of staff professionalism. It is based on empirical material obtained from *The Road to Quality Improvement*<sup>1</sup>, a Czech national project designed to support self-evaluation in schools. Data from 32 schools were collected by questionnaire surveys, interviews, focus groups and document analysis. Main findings are as follows: (1) a prerequisite for successful peer review is previous experience of evaluation activities and work with data; (2) peer review develops participants' sensitivity in terms of the need for the development of evaluation skills; (3) evaluation activities and work with data develop participants' professionalism and their potential to contribute to school development.

*Keywords: peer review, work with data, evaluation activities, professionalization, school development*

### 1. Introduction

The changing requirements for schools and their work accentuate new or, in some instances, repeated questions of quality and effectiveness of the work of schools, their development and their multilateral accountability. The combination of outer pressure on schools and support of schools' efforts to improve their work

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<sup>1</sup> Cf. <http://www.nuov.cz/ae?!chan=1&lred=1>

from the inside (Davidson & Lisi, 2012; Fullan, 2001; Leithwood, 2001) seems to be an efficient strategy to ascertain the quality of learning and other aspects of school work. These processes should be backed by professional decision-making based on suitable use of relevant data.

It is data generation in schools in particular that some of the currently promoted processes in schools are used for, usually within self-evaluation. Peer review is identified as one of them (cf. Gutknecht-Gmeiner, 2008). In this article we will study peer review processes, presenting them as a specific way of work with data in schools and drawing attention to their application in the context of Czech education.

## **2. Peer review: context, definition and specific adaptation**

Peer review is often defined as a professional model of evaluation in which members of a profession are invited to evaluate the performance of other members of the same profession (Goldstein, 2004; Verdung, 2009). It may be either evaluation of the work of individuals or groups or of whole organizations and institutions or their parts. Peer review is an internally structured process of sensitive work with data, consisting of a succession of logical steps (cf. Guide, 2004). In the framework of peer review, the requirement of complementarity of internal and external evaluation (Nevo, 2001) is fulfilled remarkably well: “external” evaluators usually start with self-evaluation reports by those who are to be evaluated (cf. Gutknecht-Gmeiner, 2007; Vanhoof et al., 2013).

In the project *Road to Quality Improvement*, the starting point for peer review was the methodological manual for European peer review (Gutknecht-Gmeiner, 2007), which was later adapted for the needs of the project under Czech conditions (Kekule, 2012). The process of peer review consisted of four stages: (1) Schools were familiarized with the details of the planned procedure. They agreed on a time schedule, conditions of the visit and the choice of quality areas to be evaluated. The evaluators obtained self-evaluation reports and other documents to study (annual report of the school, school educational programme) from schools. (2) A visit to the evaluated school followed. Data were collected with the use of prepared methods. (3) After the visit to the evaluated school, evaluators wrote a preliminary version of their report. The report was commented on by the evaluated school and given its final shape by the evaluators. (4) The evaluated school was supposed to transform the results and recommendations of the evaluation report into specific activities for improvement, i.e. to plan and perform them.



Throughout the process, including the visit to the evaluated school, a facilitator was at both teams' disposal. He/she was present during the process, moderated the evaluation visit and assisted in the elaboration of the evaluation report.

### 3. Methodology

The *aim* of our research was to study the development of skills and professionalism of those involved in peer review. By means of several methods, the participating staff members were confronted with collegial evaluation, and this was observed. We assumed that voluntarily participating schools would have positive experience of self-evaluation and look at collegial evaluation as an opportunity to further develop their school.

There were three *samples* that were subordinate to one another and differed in their size and the depth of research methods applied.

1. In June 2009 we addressed all basic and secondary schools in the Czech Republic by means of a questionnaire. The questionnaire was answered by **531 schools**. Due to the low return rate (approx.8%), it was at this early stage that the inclination of the sample towards schools with a more positive opinion on the importance of self-evaluation was formed. Interest in peer review was expressed by 21% of the respondents.
2. The schools that expressed interest in peer review were invited to an initial informational meeting. Six meetings were organized, some of which took place in June and others in November 2010, attended by a total of 207 representatives of 46 schools. **In the end, 32 schools participated in peer review** (26 primary schools, 2 middle schools, 4 secondary technical and vocational schools). Altogether there were 28 events attended by 128 representatives of the participating schools. Of the participants, 53% were school leaders (head teacher, deputy head), 17% were teachers coordinating more activities at the school (guidance counsellors, school educational programme coordinators, ICT coordinators) and the remaining 30% were other teachers. Evaluation reports from the performed peer reviews were subject to content analysis. We asked the participants to fill in anonymous surveys. All five facilitators submitted written reports on performed peer reviews. When all the events were finished a focus group was held with the facilitators.
3. Of the sample of schools participating in peer reviews in 2011, we chose **4 technical and vocational schools in which more profound research**



was carried out using participatory observation and interviews with the participants.

In sum, we used a variety of methods:

1. *Questionnaire surveys.* At the end of every peer review evaluation visit, which lasted one and a half days, both the evaluators and the participants from the evaluated school obtained questionnaire surveys. Part one of the survey consisted of 4 questions focusing on school autonomy, feedback during self-evaluation from various stakeholders and continuation with peer reviews after the project *Road to Quality Improvement*. Part two of the survey was focused on peer review evaluation: fulfillment of expectations related to peer review, usability of experience/knowledge of peer review for further practice, and organizational backing. Between October 2010 and May 2011, the survey was answered by a total of 181 respondents (85% of the participants). Of these, 23 % were head teachers, 27% were deputy heads and 47% were teachers (3% did not specify their positions).
2. *Content analysis of peer review evaluation reports.* Within one month after the evaluation visit the evaluating school provided the evaluated school with an evaluation report. The aim of the analysis of these 28 documents was to understand which quality areas were focused on by the schools, which criteria and questions were chosen by the evaluating teams for evaluation, which evaluation methods were used, what was appreciated and what was recommended for further development in the evaluated school.
3. *Content analysis of facilitators' reports.* While the evaluators provided the evaluated schools with their reports, the peer review facilitators submitted theirs to us. They provided information on how the event was proceeding, its benefits, barriers and implementing difficulties, their own support to schools during peer reviews and their needs as experts who assist schools in evaluation activities.
4. *Focus group with peer review facilitators.* To get a more profound insight into the information received from the content analysis, a focus group was held in September 2011. Its participants were the 5 facilitators and 4 project leaders who carried out a random check of the peer reviews being performed.
5. *Participatory observation.* Between February and April 2011, four peer reviews were performed in the vocational schools which became subject to participatory observation after a previous arrangement with their leaders. The aim of our observation was to describe the course of the peer review, assess the competences of the peer review evaluators, check the conditions for the evaluators, and record the immediate impressions of the participants.

6. *Semi-structured interviews.* One month after the peer review was performed, semi-structured interviews were conducted with the representatives of the 4 technical and vocational schools involved (school heads, their deputies, and teachers). The aim of the interviews was to learn about the peer review competences of those involved and the benefit of the peer review for the school, to assess the conditions for peer review and describe what the school has learned from the peer review.

## **4. Research results**

We can formulate the following theses in regard to the development of skills and professionalism of peer review participants:

### ***1. A prerequisite for successful peer review is previous experience of evaluation activities and work with data***

This thesis is grounded in the findings obtained from the surveys, the focus group and facilitators' reports. In the *surveys*, the respondents talked about their experience of school self-evaluation. A question specified that one cycle of self-evaluation comprised activities from setting priorities through realization and evaluation to the proposal of measures for improvement. A fifth of the respondents had experienced three or more cycles of self-evaluation, almost a half had gone through two cycles, and a quarter of them had undergone at least one such cycle. A mere 4% of the respondents had not had any experience of at least one completed cycle of self-evaluation in their schools.

Even if the schools involved in peer review were experienced in evaluation activities, the *focus group* revealed that it was not an easy task for those participating: they asked the facilitators many questions, which indicated their limited skills to evaluate. The schools involved in the peer review activities faced the difficult role of those who have to offer feedback to partner schools. To acquaint the evaluated schools with the results of evaluation not only required **skills of planning, collection and interpretation of data**, but mainly of **communication**. The participants in the focus group commented their uncertainties as follows:

*It's necessary to have more visits before the peer review starts. The short training programme is at the expense of quality, then it's just superficial. They plugged away at it.*

*For self-evaluation and school networking, insufficiently trained teams can be risky even if the prerequisite of voluntary pairing is fulfilled.*

Half of the *facilitators' reports* stated that the peer reviews had gone on faultlessly (as for the organization of peer review, the course of collecting information, the evaluation itself, and more). The other half of the peer reviews were performed with minor problems, the facilitators said. Problems occurred in (a) peer review planning and (b) the way in which the evaluation was carried out.

*Sometimes schools didn't have anything to talk about and it was just superficial. If the teachers went to see lessons, there were things to talk about. If there were just presentations about their school, they got lost.*

## **2. Peer review significantly develops participants' sensitivity in terms of the need for the development of evaluation skills**

This thesis is based on the results of interviews with the participants, the evaluators' reports, and the focus group. During *interviews* after the peer reviews, the participants often **evaluated positively the skill of working with methods of data collection**, both their own and the evaluators'. Specifically for the evaluators they mentioned: (a) their ability to get acquainted beforehand with the model of school management they would discuss during the visit; (b) that they were ready to collect information by means of a suitable structure of questions; (c) that they did not preach during the evaluation but adhered to opinions of unbiased, independent persons, and identified what was good and what should be reconsidered in the evaluated schools. The respondents sometimes evaluated positively and specifically their own skills in evaluating the school.

*... we managed to work out the final report so that it was really not aimed at anyone who would suffer some harm by it.*

On the other hand, the respondents often perceived certain **deficiencies in the work with methods of data collection**, again both on their own part and that of the evaluators. These deficiencies consisted in: (a) asking suitable questions during interviews; (b) work with questionnaires — aggregated assessment of the results; (c) ability to communicate the results of the evaluation to the evaluated schools. A head teacher member of a team of evaluators said:

*It's difficult that you keep rationally to the scheme, don't digress, have all the points you want to come to in that scheme, so that the interview is*

*not too restrictive, so that your partner has got scope for expression and, at the same time, it doesn't get too protracted, leading to a kind of interview which simply gets too far from the original subject.*

Next, the evaluation teams stated in their *reports* that their main means of **obtaining data for evaluation** were school visits; interviews with school leaders, teachers and sometimes also with students; classroom observations; document analysis. Once the collection of data was complete the evaluators held a brief consultation over the received data, aiming at immediate feedback. After writing a report, data were analyzed in greater depth with the facilitator's assistance, with special regard to the wording of the proposed measures for improvement.

During the *focus group*, the participants said that — despite the training for self-evaluation never being considered completed or sufficient, and although the facilitators identified a variety of deficiencies and doubts which the people at the schools expressed or indicated — they had already known a lot about self-evaluation, at least in the participating schools. What is rather lacking, however, is further improvement of specific skills which are not easy to learn.

*People do know something now, but they need supervision. You can't stop if you have basic training in self-evaluation, you've got to continue somehow.*

### **3. Evaluation activities and work with data develop participants' professionalism and their potential to contribute positively to school development**

This thesis is based on the findings obtained from the facilitators' reports and interviews with the participants after the peer reviews. In their *reports*, the facilitators explicitly pointed out the following **characteristics of the benefits of peer reviews for participating schools**: (a) exchange of experience and inspiration; gaining of specific recommendations; receiving of feedback from schools of the same or similar specialization; (d) encouragement, appraisal, words of support for further work of the school; (e) development of evaluating skills; (f) agreement about further cooperation of the school. The representatives of the evaluated schools usually realized the importance and significance of self-evaluation. The evaluators acknowledged improvement in their ability to evaluate using specific methods, i.e. to offer descriptive feedback to colleagues at an equal level, try asking questions, conduct an interview, create and evaluate questionnaires, and carry out relevant observations in classes of colleagues previously unknown to them.

During the *interviews* after the peer reviews, the participants often identified the **benefits for themselves, individually, but also, institutionally, for the school**. At the level of the individual, the benefits included learning how the same activity is done elsewhere; attaining personal contacts usable for prospective cooperation (e.g. opportunities for consultation on certain problems, participation in competitions and events); learning about personal strong points which the evaluated persons do not realize, considering them obvious. The benefit for the school consisted of items such as: confirmation of the strong points and drawbacks of the work of school leaders and the staff; recognition of what is not obvious in other schools, but positive for the work of the school; gaining a partner school for future cooperation.

*After this activity we sat down and talked about what it was good for. It was simply great. I couldn't find any negatives, just positive points. We entered into it saying it would be the critical view of a friend who would want to show us something, to show us a mirror. I think this is exactly what happened.*

## **5. Discussion and conclusion**

Peer review proved to be a relatively efficacious means of work with data in the schools. Peer review mainly indicated its potential in the following areas: (a) participants' development in work with data; received feedback about an agreed area of quality from a team of evaluators from another school; (b) exchange of experience in specific areas of school operation, inspiration from what works well in another school; (c) practicing methods of data collection for evaluation (interviewing, observation, analysis of documents); (d) acquisition of a cooperative partner school; development of social relations among participants.

Peer review was successful if the following main prerequisites were met: (a) peer review was planned in a proper way (a suitable partner school was chosen, intensive communication between school representatives took place before the visit of the evaluators so that schools could agree on the areas for evaluation); (b) the participants had previous experience of self-evaluation in their schools; (c) the participants applied organizational skills, especially during the evaluation visit (managing a tight schedule, etc.); (d) the members of the evaluation teams were experienced in data collection methods (interview, classroom observation, document analysis); (e) the participants used communication competences (they

could acquire information, negative or positive, and communicate their findings properly).

Also, the facilitators who led the evaluation process proved to be very helpful. If one or more of the above prerequisites were not met, usually the following problems occurred: (a) evaluation was superficial; (b) the time demands of the visit were underestimated; (c) data collection methods, especially the interview, were not used in an appropriate way. There is a permanent threat of pseudo-evaluation over peer review efforts if these are not carried out with sufficient thoroughness (cf. Stufflebeam & Shinkfield, 2007; Pol et al., 2012).

This confirms some of the theoretical knowledge about the potential of peer review. The participants saw in peer review a combination of outer pressure on the school and, simultaneously, support for the school so that it could improve its work from within (Fullan, 2001; Leithwood, 2001; Dvořak, 2012). As in the project on peer consulting (Vanhoof et al, 2013), they appreciated that similar schools could meet and have an opportunity to learn from each other. The findings in regard to the characteristics of the evaluators confirmed the assumptions of the peer review manual (Gutknecht-Gmeiner, 2007), requiring from the team of evaluators that they should have knowledge and experience: (a) in the field of teaching and learning; (b) in the field of detecting and development of quality; (c) in the evaluated areas of quality.

On the other hand, the focus group and facilitators showed that especially concerning problems with communication, no matter how rare, when schools could not manage to offer or accept evaluation in a constructive manner, it is not enough to act according to the above-mentioned method of evaluation. It is necessary to apply the method even with people with limited evaluating and communicational skills and ethical awareness. As it is not easy to take criticism that is expressed inappropriately, a barrier is often created that impedes any further collaboration. Such an experience is then rather harmful for the idea of evaluation. Evaluation was safe for both schools if they worked only on what was mutually arranged by the evaluators and the evaluated beforehand and there was no hidden demand in the air or any other withheld requirement.

With their proactiveness, the level of development in the evaluation processes and focus on the development of quality in education, the schools involved in peer reviews differ from other schools in the Czech Republic in showing willingness to be evaluated by another school.

Peer review is often a promising strategy of school development. Offering significant potential for the development of skills and professionalism of people in schools, peer review can cultivate skills in work with data and improve the quality

of school work. The use of peer review indicated here requires employment of the principles of dialogical and participative evaluation as a process in which all the participants play important roles. External support to peer review is also important.

For the time being, however, peer review actions in the Czech milieu are related to projects creating space for its specific application. Such actions do not remain a commonplace part of school life when projects are finished. This was also apparent in the case described here.

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## **The Investigation of Future Family Concept in Pictures Drawn by Students Studying in Preschool Teaching**

### **Abstract**

The study comprised 200 teaching faculty students. It was expected from the students to depict a moment from the future family lives that they expect to have. After the pictures had been drawn, a half-structured group interview was performed with the students about their pictures. The content analysis of the pictures was inspected by 1 pediatric development expert, 1 psychologist and 1 psychological consultant in 5 different sub-contexts and reviewed against the answers given by the students. According to the findings of the study, while female students drew pictures depicting them spending time with their partners and children, male students tended to draw pictures in which they are spending time more individually (e.g., watching TV, soccer matches, etc.). Another finding of the study is that every student wants a family life except 2. Nearly everybody wants a child, but there can be differences concerning the number of children they want. One of the most important results of the study is that, while there are traditional attitudes about families, there can also be differences in modern attitudes.

*Keywords: family, family life, domestic roles, pictures*

### **Introduction**

Family is a social structure which the individual enjoys being a part of, feels safe in every possible way, and learns about life and living together with others. The basic needs that life brings are compensated by family. The first and most long-term

interaction is experienced in family. The basic behaviors and habits about life that create personality are gained via this interaction (Kayhan ve Yazıcıoğlu 2007).

According to Özgüven, family is a legal, social and economic institution that is created by two people of different sex interaction, choice of partners and marriage and constituted by individuals that are bonded with marriage and blood bonds, who interact with each other via various roles (Özgüven 2000).

Healthy and strong family surroundings include the areas in which the parents and children spend time together (play, talk or work together). These areas are efficient areas in which the parental structures are used to learn every kind of social and cognitive skill (Meadows 2010).

Concepts like marital relations, marital satisfaction, marital happiness and marital accord have been the subject of many studies. Many scientists of many different branches of science are interested in the subject. In the frame of different areas of expertise, many studies on these concepts are being done. Marital quality is defined as the subjective evaluation of the married couples' relations. It is thought that high marital quality is related to good harmony, enough communication, high satisfaction in marital relations and degree of happiness (Spainer 1979).

Fowers and Olson found four types of premarital couples, which they termed vitalized, harmonious, traditional and conflicted. Vitalized couples were found to have high overall premarital relationship satisfaction and expressed a very high level of comfort with their ability to discuss feelings and resolve problems together. Harmonious couples were found to be of an average degree of satisfaction and it was noted that this loss of satisfaction may be caused by unrealistic views of subjects like marriage and children. While the traditional couples are both the most unsatisfied group and the group that thinks about divorce the least, the conflicted couples are found to be tense and had a tendency to divorce (Fowers 1996).

Family is the most important unit of society. Nowadays, we can see that in our country and other countries, there is a crisis in the institution of family. How will families be in ten or fifteen years? Is the contemporary youth ready to be mothers, fathers and partners?

### **Types of Families**

*Traditional Family:* Traditional extended family is generally a result of traditional or rural societies (Liywak 1965). Some common features seen in traditional family types are:

Relations are not based on equality. The most important feature of an extended family is the difference of status inside the family. The elderly have a higher status

than the younger and so do the men as compared to the women and the adults vs. the children. The people with the lowest status are those that join the family later, like, e.g., a bride. The division of labor is made according to status.

The women do all the work in-house and the men work on farms or in workplaces. The daughters help the mother and the sons help the father. The husband-wife relations have a distance in themselves. Nobody is called by name. No emotional or fervid behaviors are permitted. The wife both respects and fears the husband (MEB 2011).

*Elementary family:* The elementary family is the type of family in which neither of the partners lives with their families and the family is created elsewhere (Erol 1992). According to Kandiyoti (1984), the elementary family is a family in which the mother, the father and the unmarried children live together. Elementary family is created by partners that choose each other freely and is isolated mostly from kinship relations. The most widespread form of family is the elementary family today.

*Extended family:* The extended family is, as defined by Budak (2000), “a family structure especially seen in traditional societies in which a few generations, a high number of people that are related via blood or marriage live together under one roof or in houses close to each other”. As a slightly narrowed version of this definition, Marshall (1999) defines the extended family structure as a family system in which more than one generation live in one residence together.

*The transitive family:* The family structure orientated towards the elementary family from the extended family can be called the transitive family. This family type can be seen in societies that are experiencing a fast transition from agricultural manufacturing to industrial manufacturing, a rapid increase in population, rapid development of the concepts of societal structure and lifestyle (Özgüven 2000).

*Broken family:* Defined as “the type of family in which one or both of the parents are not present for reasons like death, divorce or separation” by Adak (2005), Özcan (1994), Thornton & Fricke (1987).

In this study, family psychological situation, family size: one child, multi-children, roles of individuals in family, hierarchy in relations of partners, emotional relations, relations between partners and between children and parents, locations and those that do not expect marriage are categorized and the drawings are analyzed. At the same time, the composition of the drawings, the number of individuals in families, their hierarchical positions in the drawings, poses and the activities of individuals are inspected.

## **Method**

### **Sampling**

This study was done with randomly selected 105 female and 95 male, 200 in total, college students who are studying the Ağrı İbrahim Çeçen Üniversitesi Preschool Teaching Sciences.

### **Study Model**

Wenger's "Psychological Drawing Tests": Wenger (2003) provides many drawing technique sets proven in drawing applications. He provides the means to obtain information about the general intellectual characteristics of an individual, the private and emotional characteristics as well as other aspects of their lives like their family, sexual, social and interpersonal relations. This study, being the result of Wenger's 30 years of studies, includes drawing tests like "A Human Drawing", "Imaginary Animal", "Angry Animal", "Happy Animal", "Sad Animal" "Family Drawing" (with 3 different applications) and "Beautiful Drawing". The drawings are evaluated with respect to the use of the page, colors, drawing characteristics, the movement of the figures, interfigure relations, the video footage during the drawings and the expression of the drawings (Wenger 2003).

### **Data Gathering**

In this study, with respect to the L.A. Wenger's "Family's Dynamic Drawing" approach, the instruction "Draw your future family. Every member of the family should have an activity" was given. The drawings were made by providing students with colored pencils and A4 sheets of paper. Approximately 40 minutes were given to the students to draw the pictures. The drawings were analyzed with respect to the drawing analysis by L.A. Wenger (2003).

For the purpose of evaluating the drawings made by the students, family drawing evaluation questions were created, taking the opinions of experts in guidance and psychological consultancy. The created questions were shown to 1 pediatric development expert and 2 faculty members from the Guidance and Psychological Consultancy Department and with the use of their opinions, the drawings were analyzed. The findings about the student-drawn family drawings were evaluated and interpreted in 5 categories. The following questions were posed to evaluate concepts like marriage, children and family;

Questions asked:

1. Do you consider marriage?
2. What is the ideal age for marriage?

3. Would you marry someone of a different ethnic origin?
4. Is the social status of the person you will be marrying important for you?
5. Can there be marriage without love?
6. Is money important in marriage?
7. Are children important in marriage?
8. Is career important in marriage?
9. How can the problems in marriage be ranked?
  - a. House
  - b. Job
  - c. Salary
  - d. Country's economic situation
  - e. Country's political situation
  - f. Insecurity
  - g. The loss of freedom
10. Would you consider marriage without engagement?
11. Which mistakes of your parents would you not make in your marriage?
  - a. We would spend more time together
  - b. We would not live with mothers- or fathers-in-law
  - c. We would not argue in front of the kids
  - d. We would not use violence
12. Why do people get married?
  - a. To live with the people they love
  - b. To avoid being alone
  - c. To break free from the control of parents
  - d. To be free economically
13. What is the ideal number of children in family?
14. Does the sex of children matter in family?
15. Which sex would you like your children to be?

### Findings

According to the answers to the questions about family, marriage and children: 99% of the students considered marriage, 9% said you can get married without love, 62% thought the social status of their partners was important (58% of whom are females), 76% considered money and career important, 12% said they would consider marriage without engagement (all male), 99% considered children important in family. Also, in answer to the question of ranking the problems of marriage 77% said salary and 2% say insecurity; in answer to the question which

mistakes of parents should not be repeated, 46% stated they would not live with parents-in-law and 9% stated they would not use violence and lastly in answer to the question of why people get married, 81% stated they would live with the people they loved and 1% stated they would get married to avoid being alone. About the questions related to the children’s gender, the answer “The gender of the children is important” received 87% of the answers (81% male students) and when asked “Which sex would you like your children to be” while the number of children varied, it was important that the students always wanted a male child in their future families.

*Parent-Children Relationship in the Drawings.* It is interesting that in their drawings, some of our preschool teacher candidates depict families with many children. The situation in which the children are with their parents, the depiction of holding hands with them is a sign of strong emotional connection in the family. In these kinds of pictures, it can be seen that the composition is created around the children (Drawings 2, 4).

As well as families with multiple children, there are drawings of elementary families with one or two children, which are generally drawn by the male students. If there are two children in the drawings, one is male and the other is female whereas if there is only one child, it is male; this reflects the traditional point of view applied by the Turkish society towards gender. With different views, the residency ratio of children can be seen in Table 1.

**Table 1.**

Number of Children in Family	No Children	One Child	Two Children	Multiple Children
Percentage of drawings	1%	28%	48%	23%

One common concept in some drawings is that family members are drawn separately. As an example, every member of the family is in a different location. “Father” is watching TV 47%, “mother” is working in the kitchen 31% (ironing 2%, watching TV 9%, etc.), children are in their rooms – one studying while the other is sleeping or if there is only one kid, the child is playing on his own. When the pictures are analyzed, it can be said that the communication between the family members is lacking.

*Location in drawings.* The details of locations in the drawings are worth attention. As an example, the details of a household: the location of rooms, fireplaces, portraits, the carpet designs, furniture, color coordination, aquarium,

and vases. In these kinds of drawings we can see that even where there is no family, how important the comfort and household decoration are to the test-takers (Drawings 2,7,8).

Of the drawings drawn, 12% show a traditional family with the grandfather, grandmother, relatives and the children of the relatives. In the drawings that depict the traditional Turkish family, we can catch a glimpse of what we are used to. The adults are eating at the table, the children are playing in their rooms. We can accept the warm relations, emotional connections and hospitality in these pictures in combination with the smiles on the faces of individuals as signs of warm family relations (Drawing 3).

**Hierarchy in Family and the Distribution of Roles.** In the drawings by the male students, we can see the “father” as the patriarch of the family. In the drawings of the females, we can see that “father” is equal to the others. Then what are the “fathers” doing in the drawings of the females? They are playing with the kids (48%), setting the table (11%), spending time with their families (18%).

Generally, the “mother” in the drawings (in male pictures) is in the kitchen (washing dishes 39%, preparing fruit plates 5%, setting the table 15%, cooking 11%, etc.). Only in 1 drawing is the “mother” reading a book in the study room (a female drawing).

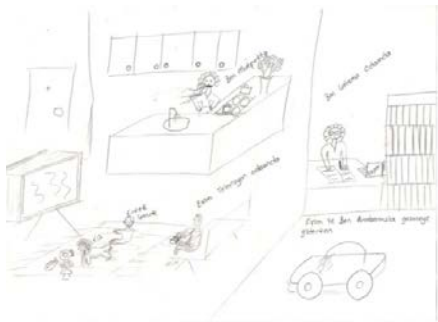
The children in the pictures are generally playing, some are studying (7%) and some are watching television (9%). In 4% of the drawings, there are also the grandparents.

**Families Drawn in Different Locations.** In a drawing drawn by a female student, the family lives in America, “mother” is a teacher in a Turkish-American school. The teacher is teaching Arabic to the children. She has a son. The “father” in the drawing is an imam, praying in a mosque.

In another drawing drawn by a male student, the “father” has a shovel, working on the farm and the “mother” is at home, talking to the child in the cradle. The drawing, showing that he can earn more by being both a farmer and a civil servant and so he can provide for his children in the big city more satisfactorily, is a good example of the transitive family type.

Those who do not consider marriage. 2 of the drawings are made by male students who do not consider marriage. In one of them there is a villa by a lake, a luxury car and a man looking at the lake, while in the other, there is a man sitting on a couch in a relaxing position, resting his feet in water. Also a musical instrument on the wall and a clipboard is of interest (Drawing 5).





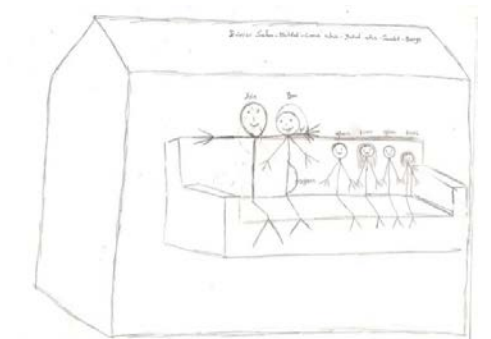
**Drawing 1: Female Student**



**Drawing 2: Female Student**



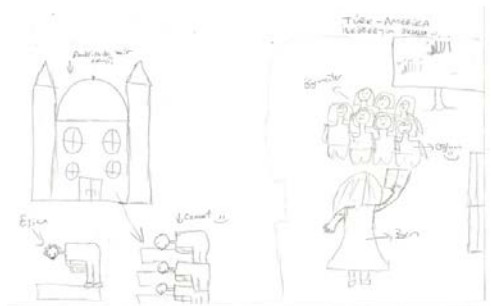
**Drawing 3: Male Student**



**Drawing 4: Female Student**



**Drawing 5: Male Student**



**Drawing 6: Female Student**



**Drawing 7: Female Student**



**Drawing 8: Male Student**





Drawing 9: Male Student



Drawing 10: Female Student

## **Results and Discussion**

The married couples that interact with each other can come to the same conclusion about subjects that relate to marriage and family and can solve their problems in a positive way is defined as a harmonious marriage. The harmony of marriage also defines the marital happiness and satisfaction as a result of the harmonious relationship of the couple. It is for the reason that in marital harmony it is important that each of the partners has a capacity to continue a good relationship (Kışlak, Çabukça 2002).

According to the findings of the research, most of our preschool teacher candidates (99%) expect a happy and harmonious marriage. But we can think that the students who answered that “Marriage without engagement is a possibility” are more inclined towards the “modern” or “European” family model instead of the “traditional Turkish family” model.

It is worth noting that the majority of the candidates that care about money and status in marriage are women (58%). At the same time, the answer given by the female students that “marriage can be considered as an option against loneliness” can show that women are concerned about money, status and loneliness in marriage. Also, the answer of “salary” given by 77% to the question of “How can the problems in marriage be ranked?” supports this statement.

We can see that the “elementary family” is chosen against the traditional Turkish “extended family” type, as seen in the answer of “we would not live with our parents-in-law” to the question of “Which mistakes of your parents would you not make in your marriage?” (46%).

The answer of the male students, “the gender of the children is important” and the general answer to the question of “Which sex would you like your children to

be?” which is while the number of children varies, a male child is always standard, are assumed to be caused by our society’s cultural structure and we can think that there is special importance of male children.

In most of the drawings by the preschool teacher candidates, most women see the household work as their responsibility; it comes to attention that they see themselves doing work like cooking, setting the table, ironing and caring for their children. This situation means that women think that household responsibility is theirs only, like their mothers’, and this means that they will continue the traditional model.

The location comes to attention in the drawings by the female students. When the harmony of the house decoration is inspected (furniture, carpet designs, color coordination, vases, clipboards), we can assume that they have more detailed and vivid imagination about marriage before marriage.

If we are to inspect the drawings of the students in a job-related fashion, we can see that the children of the teacher candidates do various activities and the mother-father-child relations are good; e.g., it can be seen that the students are trying to spend more quality time with their kids, setting the table together, watching TV together or playing together. Also, we can see that one female student sees herself as an Arabic teacher in America and her partner as an imam in a mosque, which is an indicator that she wants to serve her society as a religious instructor rather than a preschool teacher.

As a result, our preschool teacher candidates have a positive opinion about marriage. While there are some differences in role expectations from partners, we can still say that the traditional family model is preferred.

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## Attitudes of Parents Toward Learning Foreign Languages – a Slovene Case Study

### Abstract

The article deals with different attitudes parents have toward learning foreign languages in primary school. The main goal of the research was to determine the attitudes of parents towards learning foreign languages and whether there is a difference in their opinions depending on their level of education. The research was conducted on a group of parents of ninth-grade pupils attending Slovene primary schools (N = 200). Based on the results of our study, we found that the attitudes of parents towards learning foreign languages are fairly positive. A detailed analysis of the results, however, shows that there are differences in the attitudes of parents depending on the level of their education. Higher educated parents are more inclined to support learning foreign languages than parents with a lower level of education.

**Keywords:** *foreign language, parents' attitudes, primary school, parents' education*

### Introduction

Language policy in the European Union is based on the principle of multilingualism with modern European guidelines that try to ensure a multilingual population (e.g. *Guide for the Development of Language Education Policies in Europe: From Linguistic Diversity to Plurilingual Education*). In addition to their mother tongue, every European should master two foreign languages. This knowledge of foreign languages has become a necessity, value and advantage because of the

mobility and integration of businesses into the common European space and the internationalization of businesses.

The fundamental principles of education are fairness and equality, and all children with equal capabilities should have the same opportunities to succeed, regardless of their initial status in society (Rawls, 1999). Numerous studies confirm that there is a connection between children's academic achievements and the different factors that influence these achievements, namely the child's intelligence (Bouchard & McGue, 1981), personality (McGue, 2001), mental health (Krueger, 1999), motivation (Butler, Marsh, Sheppard & Sheppard, 1985), psychopathology (Roeser, Eccles, & Sameroff, 1998) and family environment (Hedges & Nowell, 1999). The child's abilities have an effect on their school achievements. The child's family, as a social group, whose members usually have a close and positive relationship also has an effect on school achievements (Mendecka, 2006). In the European tradition, family is defined as a community of people. This community makes up the most important form of social interaction, which is fundamental for every society (Swiątkiewicz, 2005). The impact of the family environment on the child's success or failure at school is by no means negligible. There are various factors of the family environment that also have an important effect on the child's achievements, such as their socio-economic status (White, 1982), the mental health of the parents (Sameroff, Seifer, Baldwin & Baldwin, 1993), parental involvement and support (DuBois, Eitel & Felner, 1994) and stressful events in their life, such as violence, divorce or the loss of a job by one or both parents (Gutman, Sameroff & Eccles, 2002). Numerous studies (Parks and Bauer, 2002; Yeung, Linver and Brooks-Gunn, 2002) have shown that the child's academic performance is closely related to the socio-economic status of their family and family environment. These studies confirm that children who have parents with a higher level of education achieve better results at school. On the other hand, some studies (Tizard, Blatchford, Burke, Farquhar and Plewis, 1988, Wells, 1987) have proven that the attitudes of parents regarding their child's schooling and support for their child's education have a more important effect on the child's success at school than, for example, the socio-economic status of the family. The relationship and aspiration of parents also have a significant effect on the child's academic achievements and school performance (Fan & Chen, 2001). Gutman, Samerhoff and Cole (2003) found that children who come from a discouraging environment, despite their high intellectual ability, do not achieve higher learning results. Two important aspects of ensuring better educational performance are parental involvement and quality cooperation between home and school (Hill, 2001; Hornby, 2000; Olsen and Fuller, 2008). Parental involvement in and support for the child's literacy have a positive effect on the child's success (Fan & Chen, 2001), and

also have a more critical impact on the child's academic achievement than other family variables, such as the number of family members, parental level of education and the social class of the family (Flour and Buchanan, 2004). Some longitudinal studies have also ensured that parental support and help at the home level have a positive influence on children and improve their cognitive performance, especially in the early years of education (Harris and Goodale, 2007).

In the 2013/2014 school year, around 40 primary schools in Slovenia are beginning to teach the first foreign language in the first grade (6-year-olds). Up to now the students have begun learning a first foreign language at the age of nine. The remaining schools are planning to join within three years. Therefore, the basic purpose of the survey is to explore parents' attitudes towards learning foreign languages at the primary school level. Various studies (Ho, 2002; Pižorn, Vogrinc, 2010) have found that participatory action research that involves both schools and parents is the best way to ensure a maximum chance of success at the system level. In this study we focused on the attitudes of parents toward (pre)primary language learning, the number and selection of foreign languages in primary schools and the importance of foreign languages.

Within the frame of our research questions, we were also interested in determining the impact of parents' education level on their attitudes toward foreign language learning in primary school.

## **Methodology**

In our investigation we used the descriptive and causal – non-experimental method of empirical research. The study comprised 200 parents of ninth-grade students who attend primary schools in four statistical regions in Slovenia: the Central Slovenia region, Gorizia region, Podravska and Pomurje region. The data was collected with the use of a survey questionnaire, consisting of closed-type questions; one open-type question was also used. The questionnaire included 24 attitudes toward learning foreign languages. An increasing grading scale was used to evaluate the attitudes. An introductory survey was included to provide information about the research sample (such as gender, age, education).

We used a questionnaire to ensure the following characteristics: validity, objectivity, reliability ( $\alpha = 0.760$ ).

The results are presented in tables. We used basic descriptive statistics and statistical inference to identify the differences in the attitudes of parents. To determine differences in their education level we used the Kruskal-Wallis test.

## Results and interpretation

The results are presented in three sections: Section 1 shows the attitudes of parents toward foreign language learning at the (pre)primary level. Section 2 shows the attitudes of parents toward the number and selection of foreign languages in primary school. Section 3 shows the attitudes of parents toward the importance of foreign languages.

### **1. The attitudes of parents toward foreign language learning at the (pre)primary level**

The survey revealed that 49% of the parents believe that children should start primary foreign language learning in the first three years of primary school, between the ages of six and eight. 29.5% of the parents believe that pre-school would be the optimum time to start learning a foreign language. Another 29.5% of the parents believe that it is best to start learning a foreign language in the fourth grade of primary school, at the age of nine.

The obtained results confirm the survey Eurobarometer 54 (European Commission, 2001), where 55% of the surveyed parents believed that it was necessary to start learning a first and second foreign language from the age of six onwards. 39% of the parents from this survey felt that foreign language learning should start before the age of six, of which 17% agreed that two foreign languages can be taught before the age of six.

**Table 1.** Results of the Kruskal-Wallis (K-W) test of the differences in parents' attitudes toward primary foreign language learning, depending on their education

Attitudes of parents	Level of Education	Result of K-W test		
		$\chi^2$	P	
Children should begin preprimary foreign language learning already in kindergarten.	Lower	89.69	10.098	0.006
	Middle	92.51		
	Higher	117.88		
Children should begin preprimary foreign language learning in the first educational period of primary school.	Lower	95.11	3.278	0.194
	Middle	95.75		
	Higher	110.02		
Children should begin primary foreign language learning in the fourth grade of primary school.	Lower	99.01	1.047	0.593
	Middle	105.44		
	Higher	96.16		

There was a statistically significant difference (Table 1) between the parents' attitude toward the aspect that children should start learning a foreign language already in kindergarten ( $P = 0.006$ ). The higher educated parents, as shown in the average ranking, have a stronger wish that their children start learning a foreign language in kindergarten, while the parents with lower levels of education ranked it the least important. The results are in accordance with our expectations that higher educated parents also have higher goals for their children (Parks and Bauer, 2002; Yeung, Linver and Brooks-Gunn, 2002). Kroeger (2005), in his study, reported that parents with a lower education level do not support their children in learning foreign languages.

## **2. The attitudes of parents toward the number and selection of foreign languages**

Most parents would like their children to learn two foreign languages at primary school (63%), some parents (37.5%) also think that school should offer children a third foreign language as an elective. Quite a big number of parents (77.5%) think that the first compulsory foreign language should be English, fewer than half of the parents (49%) believe that the second compulsory foreign language should be German. 42.5% of the parents agree that the second foreign language should be the language of the nearest neighboring country. Even in Eurobarometer 54 (European Commission 2001), 77% of the parents thought that children should learn English as one of the first two foreign languages. French (33%) and German (28%) occupied the second position.

We have proved that there are statistically significant differences in four aspects of the attitude toward the number and selection of foreign languages (Table 2); the second aspect showed a tendency. There is a statistically significant difference ( $P = 0.001$ ) in the parents' attitude toward the number of compulsory foreign languages in primary school. The parents with higher levels of education mostly agreed that students should learn two compulsory foreign languages at school, and the parents with lower levels of education agreed the least. In the second aspect of this attitude we did not prove a statistically significant difference, but we must note the existence of a tendency ( $P = 0.069$ ). The parents with higher levels of education mostly agreed with the aspect that schools should offer a third foreign language as an elective to students learning two compulsory foreign languages. It is interesting that the parents with lower levels of education agreed the least with this aspect. There is also a statistically significant difference concerning the opinion that schools should offer students a second foreign language as an elective only. The parents with higher levels of education agreed the least with this aspect, while



the parents with a high school education agreed the most ( $P = 0.000$ ), which is extremely interesting. Perhaps such results are attributed to the fact that the parents' attitudes are significantly influenced by their own knowledge or lack of knowledge of foreign languages (Bartram, 2006).

**Table 2.** The results of the Kruskal-Wallis (K-W) test of differences in parents' attitude toward the number and selection of foreign languages, depending on their education

Parents' attitude toward the number and selection of foreign languages	Level of Education		Result of K-W test	
			$\chi^2$	P
Pupils should learn two compulsory foreign languages atn primary school.	Lower	85.59	15.006	0.001
	Middle	92.44		
	Higher	121.17		
When students learn two compulsory foreign languages, schools should offer a third foreign language as an elective.	Lower	94.11	5.383	0.068
	Middle	93.74		
	Higher	113.04		
Schools should offer a second foreign language only as an elective.	Lower	110.26	17.203	0.000
	Middle	113.74		
	Higher	78.09		
The first compulsory foreign language should be English.	Lower	86.16	10.025	0.007
	Middle	96.57		
	Higher	116.11		
The second compulsory foreign language should be German.	Lower	80.33	12.061	0.002
	Middle	100.92		
	Higher	115.82		
The second compulsory foreign language should be the language of the nearest neighboring country.	Lower	112.39	3.653	0.161
	Middle	98.53		
	Higher	93.40		

The results also show that there is a statistically significant difference between the parents with different levels of education concerning the opinion that the first compulsory foreign language should be English ( $P = 0.007$ ). The higher educated parents agree with this statement more than the parents with lower levels of education, who agree with it the least. There is also a statistically significant difference ( $P = 0.002$ ) in the opinion that the second compulsory foreign language should

be German. The higher educated parents agree with this statement more than the parents with lower levels of education. It can be concluded that the education level of the parents has a significant effect on their attitudes toward the number and selection of foreign languages.

Research shows that many parents with lower levels of education are convinced that pupils do not need to learn foreign languages (Watzke, 2003), therefore it would be good to establish two compulsory foreign languages in primary schools at the state level. This would give the children of families with lower educated parents the opportunity to learn two foreign languages.

### 3. The parents' attitudes toward the importance of foreign languages

The majority of the parents surveyed (76%) believe that it is good to learn at least two foreign languages, and that this will increase employment prospects in Slovenia (69.5%). Many parents also believe that knowledge of at least two foreign languages increases employment opportunities abroad (93.5%). Much fewer parents (38%) agree with the statement that for professional and personal life it is completely sufficient to master only one foreign language (e.g. English). The results of some studies (Edwards, 1985) have revealed the impact that economic factors have on the use and choice of a foreign language, and that the state should take these into account when developing linguistic and educational policies (Wodak, Menz, 1990).

**Table 3.** The results of the Kruskal-Wallis (K-W) test of the attitudes of parents toward the importance of foreign languages, depending on their education

Attitudes of parents	Level of Education		Result of K-W test	
			$\chi^2$	P
If you want to be successful in life it is good to know two foreign languages.	Lower	95.94	6.067	0.048
	Middle	92.12		
	Higher	113.41		
Knowledge of at least two foreign languages increases employment prospects in Slovenia.	Lower	95.59	3.124	0.210
	Middle	95.45		
	Higher	109.98		
Knowledge of at least two foreign languages increases employment opportunities abroad.	Lower	95.07	2.342	0.310
	Middle	97.66		
	Higher	107.92		
For the professional and personal life it is completely sufficient to master only one foreign language (e.g. English).	Lower	109.33	7.975	0.019
	Middle	107.9		
	Higher	85.33		

There is a statistically significant difference in the parents' attitudes (Table 3) toward the number of compulsory foreign languages at primary school ( $P = 0.048$ ). The parents with higher levels of education agree the most that students should learn two compulsory foreign languages at primary school. There is also a statistically significant difference in the last aspect of this attitude ( $P = 0.019$ ). The parents with higher levels of education agree the least that for the professional and personal life it is completely sufficient to master only one foreign language (e.g. English), while the parents with lower levels of education agree with it the most. The results are obvious, because parents with higher levels of education are more aware of the importance of education and the value of knowledge in general.

## **Discussion**

Based on our study it could be concluded that it is necessary to convince the non-professional public about the desirability of learning a foreign language at the (pre)primary level.

Concerning the question of when to start learning a foreign language, most parents believe that it is best to begin in the first educational period of primary school (from the first to fourth grades). The parents with higher levels of education believe that children should start learning a foreign language already in kindergarten. According to Eurydice (2005) most European countries begin teaching a foreign language in the first grade of primary school, at the age of 6.

The parents with higher levels of education also believe that children should be taught two compulsory foreign languages at primary school and that school should offer students a third foreign language as an elective. Most parents want their children to learn English at school, as for the second foreign language, they feel that German would be the most appropriate (employment in neighboring countries). According to some sources (Bourdieu, 1991), individual attitudes toward foreign languages is strongly influenced by the special status of a language and its prestige. Consequently, it has been shown that the pragmatic value of a language is characterized by the economic benefit of learning foreign language skills (e.g. entry into the EU, international business).

Most educated parents are of the opinion that for a successful life it is necessary to master at least two foreign languages, and that it is not enough to master one foreign language, even if it is a world language. It can be concluded that parents with higher levels of education emphasize the importance of foreign languages more than those with secondary or lower education. Although Rakovec (2009), for instance, notes

that only a few parents actually decide to take the responsibility for teaching foreign language skills to their children. We must certainly also consider the fact that many parents do not feel confident enough about their ability to speak foreign languages to be able to take on such a responsibility. But the author has observed considerable resistance even in the parents who have had many years of foreign language education and consider their language skills as good. Our fundamental conclusion is that with the increasing levels of parent education there is growing support for learning foreign languages. An important aspect is the way in which parents think about their children's education. The attitudes of parents and their expectations have an effect on their children's behavior and school performance. Some studies (Hill, 2001) have confirmed that the children of parents who have higher educational aspirations for their children have better academic achievement and go on to complete higher levels of education. The most pronounced impact on the education of children, therefore, is the cultural cultivation of the parents, in which their relations, attitudes and aspirations play a key role in learning foreign languages (Fan & Chen, 2001). This means that children from the upper classes are privileged; they are brought up in such a way that they will be automatically led to higher levels of educational achievement. Therefore, it is important that at the state level all children in primary schools should learn two compulsory foreign languages. These state schools, with their school climate and appropriate organization, can help to bridge the gap.

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## **Parents and Educational Change – the Need for Reculturing Parents In Lowering the Starting Age of Foreign Language Learning**

### **Abstract**

Many countries across the world have been lowering the starting age of foreign language learning (FLL) to an earlier age. While the roles of learners and teachers have mostly been studied from a variety of perspectives, learners' parents have often been examined for their opinions of FLL, but not as real partners who need the same amount of 'reculturing' as other involved stakeholders.

In the presented case study, parents were involved in the planning and implementing of lowering the FLL starting age from age 9 to age 6. The results of the questionnaire and the teachers' interviews show that 'recultured' parents' attitudes to lowering the starting age can differ greatly from those of 'non-recultured' parents if the most important variables for the successful implementation of an educational change have been fulfilled. The 'recultured' parents' model can be of great help to decision makers and other stakeholders involved in teaching foreign languages.

**Keywords:** *young learners, foreign language learning, parent and teacher attitudes.*

### **Introduction**

In the last two decades, many countries across the world have lowered the national compulsory starting age for foreign/second language learning to the start of compulsory schooling. As argued by Johnstone (2009: 33), this can be identified as "a truly global phenomenon and possibly the world's biggest policy

development in education". While issues related to the teacher and the learner have come under close scrutiny and their role in successful foreign language learning (FLL) is undisputed, out-of-school factors in FLL have not been a major concern of policymakers (Lindgren & Muñoz 2013). The presented paper argues that parents' 'reculturing' is of vital importance for such a change to be successful.

## **The role of parents in educational change**

The role of parents in education in general has been widely researched. Parent participation has been observed as a critical variable in determining the child's success at school. Many studies have shown that parents' perceptions have a stronger influence on children's perceptions than children's own perceptions of their achievements or even grades. Furthermore, research shows that parental behaviour and parental orientations have a clear impact on children's behaviour. A large body of research suggests that the way parents raise their children may be more important than the parents' occupation, income or education level (e.g., Snow, Barnes, Chandler, Goodman & Hemphill 1991; Lindgren & Muñoz 2013).

The relationships between parents' attitudes and language learning have been frequently examined. However, parents' influence on their children's FLL is not directly observable, but it is manifold, and therefore of key importance when an educational change, such as lowering the starting age of FLL, takes place. Desforges and Abouchaar (2003: 91) point out that it is the home involvement of parents with their children that matters than any other factor, because it is within this environment that the child builds a positive social and learning self-concept and develops his/her high educational aspirations. More specifically, Young (1994: 85, as cited in Lindgren & Muñoz 2013) observes different ways in which parents can affect their children's FLL in a positive way, from encouraging participation in foreign language (FL) exchange programmes and helping their children with homework, to making the target language country the destination for a family holiday and thus providing opportunities for their children to interact in the foreign language environment. Another variable that has been the focus of parental involvement research is related to the FL proficiency level of the parents. Hewitt (2009) observed several factors that influenced children's listening and writing skills in the FL. The results show that the most significant factors influencing children's language skills are parents' perceived knowledge of English, parents' perceived help with English and the perceived number of times the father and mother helped the child. This study (Hewitt *ibid.*) also highlighted the effects of children's perception of parents' involvement



and proficiency levels on children's FL (English) listening and writing. It is possible that parents who use the foreign language professionally are also more inclined to use it at home when watching TV/films, listening to music or using the internet, or with international visitors and contacts. In such contexts, the use of the foreign language is a natural component of children's everyday life, and something the children would also be inclined to do. Another comprehensive longitudinal study, ELLiE (Enever 2011), provides more evidence of the importance of the parents' role in FLL, demonstrating that parents' use of the FL at work is a significant predictor of children's achievement in listening and reading skills, while their educational level only contributes to the understanding of reading results.

Educational changes have commonly been introduced top-down, whereby the underlying documents and the rationale for the change and its outcome are usually prepared centrally. It is, however, of paramount importance that the educational change is understood and supported by the most important stakeholders. We have been able to follow some less successful attempts to lower the age of FLL, in which the low level of success has been attributed to the lack of teachers with an appropriate level of foreign language proficiency, the lack of teacher training in early FLL methodology, the lack of material resources, discontinuity between the primary and secondary school levels, etc. (Driscoll & Frost 1999; Garton, Copland, & Burns 2011). However, parents have received very little attention in this process.

To a certain extent, it is interesting that the role of parents in lowering the starting age of FL has not been the subject of broad research, as the fact is that if an educational change is to be successful and effective, it must rest on the basic principles of sustainability and partnership, or, in Hargreaves and Shirley's words: "What ultimately bears the weight of sustainable educational change is not an overarching set of government policies and interventions, but people working together as partners around shared and compelling purposes" (Hargreaves & Shirley 2009: 23). Fullan (2011: 70) points out that many educational changes have concentrated on paper changes without considering what the stakeholders actually did and how they interpreted the change. The fact is that parents' actions and their interpretation of lowering the starting age of FL learning has not been the subject of research.

Educational changes may have different forms and may affect larger or smaller areas of education systems. Whatever their scale, they necessarily involve various stakeholders. It is usually teachers and learners who get most attention, while parents are likely to be considered at the initiation stage, when "hot public debates" are likely to fill national media, but seem to be "forgotten" when the educational change starts to be implemented. As Wedell (2009) rightly points out, it is not just a matter of teachers changing their beliefs and practices, or new materials

and equipment being provided; there are other stakeholders at the local level who also need to be taken into account. If this is true, why is it that in most countries decision makers are prepared to hand out questionnaires to parents, asking for their attitudes towards early FLL, yet fail to monitor what happens later in the actual implementation phase?

## **Method and sample**

The case study included parents of pupils from 45 schools (N=1,966), whose children were participating in the two-year project *Implementing Foreign Languages and Intercultural Awareness in the First Triad of the Slovene Primary School (2008–2010)*<sup>1</sup>. At the end of the project, a questionnaire (Q1) of 19 closed questions and 1 open question was administered to the parents to investigate their attitudes to FLL, and especially to lowering the starting age of FLL. Data was also gathered using research journals kept by the project leaders, a motivation questionnaire for children, a language progress test, lesson observation and teachers' portfolios. Parallel to this case study, an evaluation study was designed within the project of developing *The White Paper on Education*. It investigated the attitudes of teachers, head teachers and parents to various school issues – the number of lessons per week, the choice of optional subjects, FLL, the languages of migrant students, etc. (Marjanovič Umek et al. 2012) – by means of a questionnaire (Q2), which was administered to 4,138 parents of primary school pupils (age 6–14). For the purpose of comparison, only the parents with children in the first triad (age 6–9) were taken into account in the presented study (38.4%; N=1,560).

## **Model rationale**

According to Wedell (2009), the process of planning and implementing educational change needs to be viewed as a medium to a long-term process whose success, in terms of real changes to the outcomes of student learning, may demand significant changes from participants' practices and beliefs. While ultimately people's beliefs strongly influence their behaviour, people often find it difficult to talk about their beliefs to others without reference to actual practices. Any systems developed to support the many people involved in a change process, therefore, need to be able to provide participants with opportunities to experience new behaviours in action. Only when people have experienced these new behaviours, and hope-

fully seen some evidence that persuades them that they do in fact result in better outcomes, will they seriously question their pre-existing beliefs. Belief change is therefore usually a result of noticing visible positive effects of change.

The educational context of the case study can be described as a small country where foreign languages are very important for the country's economy, tourism and research, but are also perceived as a threat to the survival of the mother tongue. Tensions between the protectors of the mother tongue and more innovative approaches to FLL, such as CLIL, have been present for a number of years (Lipavic Oštir & Jazbec 2009). Therefore, an educational change, such as more FLL instruction in the compulsory curriculum and earlier commencement of FLL, is potentially an issue of heated debate. Furthermore, the case study developers were aware that many parents may be worried about lowering the FLL starting age, as their own FLL experience could differ vastly from the principles and good teaching practice of foreign language learning. Most of the parents started learning a foreign language when they were about 10 or even older, and the teaching approach was predominantly grammar-oriented. Many of them may still feel uneasy about their experience of learning grammar rules and memorising short texts, and of not actually understanding much of what was going on during the lessons or, even worse, being told off for each grammar mistake. We therefore believed that the parents involved in the case study would need a certain degree of 'reculturing' for this large-scale educational change to have any hope of leading to visible differences in actual learning (cf. Wedell 2009).

The process of 'reculturing' involves developing confidence in new practices, which demands an ongoing investment in making the educational change seem worthwhile and relevant to the stakeholders. The 'reculturing' model was based on working with all of the stakeholders involved in the educational change simultaneously. First, foreign language experts from the local and international contexts worked closely with the teacher trainers and in-service practising teachers to plan and implement FLL to 6-year-old children in 45 schools across the country. The FL teachers had been thoroughly trained in teaching FLs to young learners, had participated in regular national and regional meetings to discuss open issues, and had been provided with an interactive platform with a number of teaching resources (visual, audio and video). In addition, two resource books were published during the project. The young learners were regularly observed, and their motivation and FLL progress were investigated.

Before joining the project scheme, each school had to obtain parents' permission. Most of the schools organised a teacher-parent meeting at which the FLL teachers explained the rationale for lowering the starting age in detail, including the inter-

national and national experience of FLL for young learners, the main principles of foreign language teaching (FLT) to young learners, snapshots from classroom practice, links to various FLL resource websites, etc. At some point during the school year, the parents were able to participate in one or more FL lessons and experience the actual learning process. Furthermore, a number of reader-friendly articles on teaching and learning FLs at a very young age were published in various national newspapers and magazines, most of which were intended for parents and the general public.

At the end of the project, a questionnaire (Q1) was distributed among the parents whose children had participated in the project and the results were presented at the teachers and principals' regional meetings across the country and later published in a free e-book.

## Findings

The parents' attitudes to introducing FLL in Year 1 (age 6) was measured by two questionnaires (Q1 and Q2), with one group representing the parents involved in the case study (the 'recultured' parents) and the other involving parents who were not part of the case study (the 'non-recultured' parents).

**Table 1.** The 'recultured' parents' attitudes to the age when their children should start learning a foreign language as a compulsory subject (Q1)

	Class	1	2	3	4	5-9	Total
	Age	6	7	8	9	10-14	
First Triad Parents	Number	1082	157	250	276	52	1966
	%	55.0	8.0	12.7	14.0	2.6	100%

**Table 2.** The 'non-recultured' parents' attitudes to the age when their children should start learning a foreign language as a compulsory subject (Q2)

	Class	1	2	3	4	5-9	Total
	Age	6	7	8	9	10-14	
First Triad Parents	Number	327	149	314	481	289	1560
	%	21.0%	9.6%	20.1%	30.8%	18.5	100%

Tables 1 and 2 show that there is a significant difference between the two groups regarding the parents' attitudes towards when their children should start compul-

sory FLL. While 55% of the 'recultured' parents believe that their children should start FLL in Year 1, only 21% of the 'non-recultured' parents share this opinion.

When the parents participating in the case study were asked to express their attitude towards whether FLL at the beginning of schooling should be integrated into other school subjects, 60% agreed with this statement, with 13.2% being undecided and 27.4% disagreeing.

Furthermore, 74.2% (N=1,422) of the parents agree that their children should be able to use one more foreign language in addition to English, while 12.1% (N=232) were undecided and 13.7% (N=263) disagreed (Q1). When the same question was asked to the 'non-recultured' group of parents (Q2), only 40.2% (N= 632) agreed with the statement. Of the parents who were part of the 'reculturing' study, 94.3% (N=1,821) believed that they encouraged their child with regard to FLL and 84% (N=1,616) stated that they would like to learn another FL themselves.

The last question in Q1 was an open question inviting parents to express their opinions, suggestions and attitudes with regard to FLL in the first triad of primary school. Responses were received from 185 parents (9.4%), 98.7% of whom gave positive feedback. The parents focused on two issues: the teaching approach and the factors that influence FLL. They supported the following features of the teaching approach:

- learning by playing;
- absence of testing;
- gradual implementation of FLL in existing instruction;
- teachers' adequate consideration of children's interests;
- a variety of activities that help children to develop an ear for languages;
- learning through music, nursery rhymes, songs, cartoons and stories;
- learning vocabulary before grammar;
- FLL as a 'language bath', whereby the teacher only uses the FL;
- learning about English-speaking countries, their lifestyle and customs;
- FLL integrated in other school subjects;
- learning useful language elements, not just, e.g., tenses;
- learning to use simple computer programmes for FLL.

The factors that the participating parents perceived as influencing and enabling the appropriate FLL of young learners are as follows:

- teaching methods and approaches should fit the age of the learners;
- well-qualified teachers;
- ensuring unbroken continuity of FLL from kindergarten onwards;
- FLL as a compulsory, cost-free subject;
- a wider selection of foreign languages.

Parents who were reluctant to lower the starting age of FLL expressed the following fears:

- children would be overburdened;
- children should learn their mother tongue thoroughly first.

## **Discussion and conclusion**

Wedell (2009: 41–42) provides a number of variables that need to be considered when implementing a large-scale educational change. In the following discussion, we will try to evaluate whether some of the factors concerning parents participating in the case study have been considered, and, if so, to what extent.

The first variable relates to the behaviour and attitudes of a very wide range of individuals. Although parents, unlike learners and teachers, are not actually the major stakeholders in lowering the FLL starting age, they may have a strong influence on FLL. Within the present case study, parents have been given serious consideration and their attitudes have been measured and taken into account.

The second variable refers to the fact that there should be as many people as possible who understand the rationale and the main aims of the change. The ‘recultured’ parents, who participated in the case study and therefore had an opportunity to become thoroughly informed about the theoretical and practical background of the educational change, have a much more positive attitude towards lowering the FLL starting age than the parents who did not participate in the case study. It also seems that the ‘recultured’ parents understood the importance of multilingualism in the global world, as two thirds of them agree with the formula  $M+2$ .

The next variable emphasises the importance of awareness-raising and communication between the various levels of the change process. In lowering the starting age of FLL, it is important to make parents aware of the principles of FLT for young learners, i.e., which approaches, methods and techniques are appropriate for young learners. Communication between FL teachers and parents was frequent, well-supported and open, as confirmed by the parents’ suggestions in the open question in Q1.

The next aspect to consider is that people do not respond to change in a purely rational way, but rather with their emotions. The participating parents were able to express their fears and unresolved issues at the parents’ meetings and through communication with FL teachers. Furthermore, the introduction of new practices requires support over time, and the ‘recultured’ parents not only received a great

deal of support from FL teachers, but also from the special resource materials developed within the period of the case study.

The teaching approach developed by the case study expert team and the in-service teachers was based on widely accepted principles of FLT for young learners, such as the multi-sensory approach, CLIL, TPR, etc. In the current educational setting, CLIL is not appreciated because of its potential 'danger' to mother tongue proficiency, and is not practised at schools due to the constitutional requirement that instruction must take place in Slovene (except in the case of the two recognised ethnic minorities). Therefore, it is interesting and promising to note that the 'recultured' parents do not seem to feel threatened by the CLIL approach, as 60% of them believe that FLL in the first three years of primary school should be integrated into other school subjects.

Another variable refers to new practices, which need to be in harmony with the available teaching and learning materials, and, most importantly, with national high-stakes assessment. The participating parents were able to experience different kinds of teaching materials. Most of the FL teachers in the case study used or adapted materials from other school subjects or created their own special materials and real materials. The exclusive use of FLL textbooks was not favoured.

We know that when people are expected to change their existing visible behaviours and, eventually, the less visible assumptions/beliefs on which these behaviours are based, they may find this threatening, because it may affect other familiar aspects of their lives. As with all educational changes, lowering of the starting age of FLL will succeed only if all of the stakeholders, including parents, are willing to play an active role in helping it happen.

The successful implementation of educational changes is an ongoing process and should not become merely an example of 'symbolic triumphalist action' (Wedell 2009: 18). This means that the change should be seen as a national issue rather than a governmental issue, (Cox & Lemaitre 1999). Unfortunately, this was not the case with the current case study, in spite of its promising results manifested by a new socio-culturally appropriate implementation model of lowering the FLL starting age. A change in government put a stop to the implementation process and, once again, politicians showed that they are not able to put educational investment beyond their own need for political survival (cf. Fullan 2007). However, despite the government's formal termination of the implementation process, an informal network of highly qualified FL teachers, FL experts and advisors, as well as nearly 2,000 recultured parents, have continued their collaborative work using newly created materials and are disseminating their newly acquired knowledge and skills to new cohorts of learners and their parents.



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## **University and Non-government Organisations: Indispensable Partners in Global Citizenship Education in Spain**

### **Abstract**

Global Citizenship Education at university has been developed in Spain with the continued support of the Official Development Assistance and collaboration of Non-Government Organizations. In recent years, this assistance is suffering a drastic decrease in funding. Due to this situation, Spanish nonprofits and the University must enhance their collaboration in order to make a better use of the resources available. This article details a method for determining the collaboration factors in activities of Global Citizenship Education at university through the prioritization of experts' preferences of collaboration. For this, it uses a quantitative technique called the Analytical Hierarchy Process on a sample of Global Citizenship Education professionals all over Spain. The results provide criteria that may help to establish a most suitable and collaborative action plan for Global Citizenship Education in the university space in the new changing reality.

**Keywords:** *Global Citizenship Education, NGO, University.*

### **Introduction**

Global Citizenship Education (GCE) in Spain has developed with a different rhythm to the evolution experimented in Europe and North America, while on the international arena this education, grouped under the general term of International Education (Kandel, 1955; Sylvester, 2002; Sylvester, 2005), existed prior to the twentieth century, in Spain this education began in the 1940s and 1950s. All these

kinds of education (education for world citizenship, education for international understanding, global education, etc.) emphasize understanding among peoples and cultures, and learning about international relations and global problems (global poverty, environmental issues, etc.).

The GCE in Spain has been strongly supported by the Official Development Assistance (ODA). In the Spanish University it has been developed in partnership with NGO, grouped in four basic dimensions which establish, in the National Strategy of Development Education (Ortega, 2008), awareness raising, training, research and social mobilization (Boni, 2005).

In recent years, Spanish ODA has experienced drastic cuts in funding (OCDE, 2012). This reality can undermine the activities of GCE developed in the University. To overcome this situation, it is of the highest priority to build synergies among NGOs and the University, in order to be more efficient. In this sense, it is necessary to find the factors that favor and enhance collaboration between these two actors in GCE activities.

The GCE activities normally depend on the priorities established by the development NGOs or the University. Each activity is conditioned by the immediate environment where it is developed, and this election is frequently done in haste without having time for global reflection. As the literature on collaboration between nonprofits and University is scarce (e.g. Siemens, 2012; Weerts and Sandmann, 2008; Nishide, 2002; Macduff & Netting, 2000), the presented study aims to overcome this, finding some of the priorities that he actors (expert professionals all over Spain) take into account when they do GCE activities in collaboration. With this intention, this paper shows an accurate methodology to contribute systematically to the analysis of these priorities through a method called the Analytical Hierarchy Process (AHP), based on the opinion of experts.

The remainder of the paper is structured as follows. The following section explores the definition of Global Citizenship Education in Spain, showing the specific areas or dimensions of the educational process covered in this paper. The third section synthesizes the main characteristics of the methodological elements that have been employed in the AHP. The results of the study are displayed in the fourth section, and the main conclusions are presented in the final section.

## **Global Citizenship Education in the Spanish University**

GCE has four basic dimensions, but in the University, three of them are developed to a greater extent due to their being linked to the mission of the University. Awareness-raising refers to activities that last for a short time and that aim to arouse interest and increase social involvement in the promotion of sustainable human development, through knowledge and emotive elements (Celorio and López de Munain, 2007). These are usually informal activities, like short courses, fairs, congresses, conferences, exhibitions, etc. Training for development refers to an educational process that promotes global citizenship aimed at a clearly-identified target public, for whom specific educational methodologies are applied to develop cognition, procedure and attitude skills (Ortega, 2008). These are usually activities carried out in formal educational contexts, like Master's degree courses, post-graduate courses, specific subjects, career training, etc. Finally, the themes and practices of GCE must be founded on research and development. This activity uses social research techniques with a special emphasis on those favoring action-oriented research (Ortega, 2008).

The activities belonging to each dimension have general factors to take into account in a collaboration process between NGO and University; some of these factors are the "contents" of these activities, "time" to be developed and "levels of participation" (Rico, 2012; González et al., 2012). Some authors have pointed out that actors must take more responsibility according to their strengths, which are generated by their different expertise and knowledge (Camino and Heidrich, 2003; Macduff and Netting, 2000). For this reason the experts, based on their experience, were asked by the pertinent protagonist (NGO or University) of each factor at the different stages of the GCE activities (cf., Table 1). Thus, general factors ("contents", "time" and "levels of participation") were detailed in specific factors, taking into account the role of the actors.

### **Methodology Framework: The Analytical Hierarchy Process (AHP)**

#### **Method**

The Analytical Hierarchy Process was created by Saaty (1977; 1988) as a structured but flexible technique for making decisions in a multi-criteria context. AHP models a decision-making problem using a framework that assumes a unidirectional hierarchical relationship among decision levels. The top element in the

hierarchy is the decision model goal. The subsequent levels model the criteria and sub-criteria.

The first step is to establish the hierarchical structure. Then the relative importance or weighting of each criterion or sub-criterion ( $w_i$ ) is obtained through pair-wise comparisons between each criterion and sub-criterion. Thus, in order to determine the weighting to be assigned to each criterion and sub-criterion proposed, respondents must make two kinds of comparisons: first, pairing comparisons between the sub-criteria in each generic criterion (three sets of pair-wise comparisons in the present case) and, secondly, pairing comparisons among criteria. In order to measure these comparisons, Saaty proposed the use of a 1–9 scale (Saaty, 1997; 1988)

In this case, the AHP was applied to the three dimensions of GCE, so three different hierarchical structures and analyses were generated, one for each dimension (Table 1). As can be seen, general factors (“contents”, “times” and “factors”) shape clusters of specific factors which relate to the lead actor.

**Table 1.** Hierarchical structure for each GCE dimension

Goal	CRITERIA (General Factors)	SUB-CRITERIA (Specific Factors)
Collaboration criteria in awareness-raising	<i>Contents</i> ( $w_{cont}$ )	( $w_1$ ) Most contents form part of NGO knowledge and work
		( $w_2$ ) Most contents form part of the graduate or post-graduate curriculum
		( $w_3$ ) Most contents have been identified as interesting by the University community
	<i>Actors' participation in follow-up</i> ( $w_{part}$ )	( $w_4$ ) NGOs must offer ways to continue the process after the Awareness-raising activity
		( $w_5$ ) University must offer ways to continue the process after the Awareness-raising activity
		( $w_6$ ) University community must offer ways to continue the process after the Awareness-raising activity
	<i>Time</i> ( $w_{tim}$ )	( $w_7$ ) Timetables and timing established by the NGO
		( $w_8$ ) Time afforded by the academic calendar as determined by the University
		( $w_9$ ) Time according to the students' time availability

Goal	CRITERIA (General Factors)	SUB-CRITERIA (Specific Factors)
Collaboration criteria in training for development	<i>Contents</i> ( $w_{cont}$ )	( $w_1$ ) Most contents form part of NGO knowledge and work.
		( $w_2$ ) Most contents form part of the graduate or post-graduate curriculum
		( $w_3$ ) Most contents are transmitted using motivational, activating and participatory methodologies
	<i>Actors' participation during the activity</i> ( $w_{part}$ )	( $w_4$ ) The NGO staff stimulates group dynamics, and trains and accompanies educational activity
		( $w_5$ ) Teachers stimulate group dynamics, and train and accompany educational activity
		( $w_6$ ) Students get actively involved in the development and implementation of the educational activity
	<i>Time</i> ( $w_{tim}$ )	( $w_7$ ) Timetables and timing established by the NGO
		( $w_8$ ) Time according to the academic calendar determined by the University
		( $w_9$ ) The training activity offered is inserted in the students' class time
Collaboration criteria in research and development	<i>Themes</i> ( $w_{them}$ )	( $w_1$ ) Most themes are part of the work areas and interest of the NGO
		( $w_2$ ) Most themes are consistent with University lines of research
		( $w_3$ ) Most themes are in the interest of citizens from the North and/or South
	<i>Actors' participation during the activity</i> ( $w_{part}$ )	( $w_4$ ) The NGO leads the research team.
		( $w_5$ ) The University leads the research team.
		( $w_6$ ) The citizens of the North and/or South contribute to the process with knowledge and reflection.
	<i>Time</i> ( $w_{tim}$ )	( $w_7$ ) In time for NGOs to make use of results.
		( $w_8$ ) In time for the University to make use of results.
		( $w_9$ ) In time for the results to be released among citizens of the North and South.

Elaborated by the authors based on Rico (2012) and Gonzalez et al. (2012).

The data obtained in the survey were treated with special software called “Expert Choice“, specifically designed for collaborative decision-making through AHP. This program assigned weights to the general factors (criterion) and the specific ones (sub-criterion).

### **Sample of Experts**

The selected sample equally represented the two actors involved in GCE in the university space: NGOs and University itself. It consisted of 21 and 24 experts for each of the three different analyses conducted, which means 66 surveys in total. Experts came from different Spanish regions and were fair representation of the NGO sector and the University. 92.4% of the respondents were professionals with over five years' experience in GCE in the University.

## **Results and discussion: prioritizing collaboration criteria in Global Citizenship Education**

The results are shown below for each GCE dimension. They show the importance of all the factors selected in order to define a GCE activity in collaboration between NGO and University. This can be seen in the results (cf., Tables 2, 3 and 4); because none of them received a value of total utility less than 1%.

### **Awareness-raising**

Among the three general factors defined for awareness-raising activities, the cluster most valued by the experts was that which deals with the “actors’ participation in follow-up”, which represented 45.3% of the total utility derived from all the criteria. The next most valued clusters were those dealing with the definition of “contents” at 32.5%, and the definition of “time” at 22.2% (Table 2). As can be observed in awareness-raising activities, the experts emphasized the importance of defining the actors’ participation during follow-up, under the impression that the fulfilling of this factor creates conditions for carrying out the other criteria.

The experts stressed that although these activities were of short duration, the University must give continuity to the process once launched (Table 2). So, regarding the weights for the sub-criteria (Normalized Local Weights), the idea most highly valued was that “the University must offer ways to continue the process after the Awareness-raising activity” (19.6% of total utility). At this point, the experts stressed the responsibility held by the “University support structures” (associations, foundations, etc.) in this respect. It is important for the University to recognize its role in this point because this is probably part of the complementary strength (Camino and Heidrich, 2003).

**Table 2.** Results of collaboration criteria in awareness-raising

	Global Weights	Local Weights	Normalized Local Weights
<i>Contents</i>	→ $w_{cont} = 32.5\%$ →	$w_1 = 37.3\%$	$w_1^* = 14.0\%$
		$w_2 = 31.9\%$	$w_2^* = 12.0\%$
		$w_3 = 30.9\%$	$w_3^* = 11.6\%$
<i>Actors' participation (follow-up)</i>	→ $w_{part} = 45.3\%$ →	$w_4 = 26.1\%$	$w_4^* = 10.9\%$
		$w_5 = 46.6\%$	$w_5^* = 19.6\%$
		$w_6 = 27.3\%$	$w_6^* = 11.5\%$
<i>Time</i>	→ $w_{tim} = 22.2\%$ →	$w_7 = 16.8\%$	$w_7^* = 3.4\%$
		$w_8 = 46.9\%$	$w_8^* = 9.6\%$
		$w_9 = 36.4\%$	$w_9^* = 7.4\%$

Source: Elaborated by the authors.

Other elements that the experts identified as being important refer to the content of these activities that “must be part of NGO knowledge and work” (14.0% of total utility) and “must form part of the graduate or postgraduate curriculum” (12.0% of total utility). Thus, both actors must have previous common knowledge for optimum results, which suggests that it would be recommendable to promote collaborative work between the NGO and the University, which are already working along the same lines individually.

**Training for development**

Of the three cluster factors selected for training for development activities, the collaboration in defining “the actors’ participation during the activity” was the cluster with the highest value, representing 50.9% of the total utility derived from all the criteria, followed by the cluster that deals with the definition of “contents” at 34.2%, and definition of “time” at 14.9%. The value obtained in “actors’ participation during the activity” was high because the experts thought that the actors must define, above all, their participation in GCE activities, because doing so guarantees their collaboration in defining the “contents” and “time”. The final results are shown in Table 3.

In these kinds of activities, the experts noted that the collaboration factors must serve to secure students’ participation (Table 3). So, among the sub-criteria (Normalized Local Weights), the respondents assigned the highest value to “students getting actively involved in the development and implementation of the educational activity” (26.1% of the total social utility). These activities should also promote “contents transmission using motivational, active and participatory



methodologies” (17.5% of the total social utility). Another issue identified as an important criterion by the experts is related to the University curricula, because the statement “most contents must form part of the graduate or postgraduate curriculum” was also highly evaluated (13.8% of the total social utility).

**Table 3.** Results of collaboration criteria in training for development

	Global Weights	Local Weights	Normalized Local Weights
<i>Contents</i>	→ $w_{\text{cont}} = 34.2\%$ →	$w_1 = 16.1\%$	$w_1^* = 6.0\%$
		$w_2 = 36.9\%$	$w_2^* = 13.8\%$
		$w_3 = 47.0\%$	$w_3^* = 17.5\%$
<i>Actors' participation (during activity)</i>	→ $w_{\text{part}} = 50.9\%$ →	$w_4 = 14.8\%$	$w_4^* = 6.9\%$
		$w_5 = 29.0\%$	$w_5^* = 13.5\%$
		$w_6 = 56.2\%$	$w_6^* = 26.1\%$
<i>Time</i>	→ $w_{\text{tim}} = 14.9\%$ →	$w_7 = 13.0\%$	$w_7^* = 2.1\%$
		$w_8 = 47.4\%$	$w_8^* = 7.7\%$
		$w_9 = 39.6\%$	$w_9^* = 6.4\%$

Source: Elaborated by the authors.

Expert utility derived from the three most important concepts (involvement of students, 26.1%; participatory methodologies, 17.5%; contents part of the curriculum, 13.8%) represents over half the total utility. The first two results are consistent with one of the main GCE interests since, according to the Spanish Cooperation Strategy on Development Education, “Training for development must be a participative process, where the students are active and responsible subjects” (Ortega, 2008, pp.20). However, in the third one, the experts stressed academic parameters and, therefore, the role of the University. This last result notes the need for the nonprofit sector to recognize the expertise and knowledge of the University in these kinds of activities, as asserted by Macduff and Netting (2000).

### Research and development

Among the cluster of factors selected for research and development, the two most valued by the experts were those that deal with defining “themes” (45.4% of total utility) and the definition of “actors’ participation during the activity” (44.4% of total utility). The “time” factor in this case was almost not taken into account by comparison (10.2% of total utility). In contrast to previous results, collaboration in “defining the actors’ participation during the activity” in this dimension was not the main criterion assigned by the experts. Thus, they chose collaboration in

defining research content first because they thought that a broad consensus in contents must be reached first in this dimension (Table 4).

**Table 4.** Results of collaboration criteria in research and development

	Global Weights	Local Weights	Normalized Local Weights
<i>Themes</i>	→ $w_{cont} = 45.4%$ →	}	$w_1 = 31.7%$ $w_1^* = 14.3%$
			$w_2 = 23.6%$ $w_2^* = 10.7%$
			$w_3 = 44.7%$ $w_3^* = 20.2%$
<i>Actors' participation (during activity)</i>	→ $w_{part} = 44.4%$ →	}	$w_4 = 26.4%$ $w_4^* = 12.3%$
			$w_5 = 42.3%$ $w_5^* = 19.7%$
			$w_6 = 31.3%$ $w_6^* = 14.6%$
<i>Time</i>	→ $w_{tim} = 10.2%$ →	}	$w_7 = 27.2%$ $w_7^* = 2.2%$
			$w_8 = 17.6%$ $w_8^* = 1.4%$
			$w_9 = 55.3%$ $w_9^* = 4.5%$

Source: Elaborated by the authors.

In these kinds of activities, the experts assigned the highest value to the fact that research activity takes citizenship into account. So, among the sub-criteria (Normalized Local Weights), the respondents assigned the highest value to the following statements: “most themes must be of interest for citizens of the North and the South” (20.2% of total utility) and “citizens of the North and the South must contribute with knowledge and reflection to the whole process” (14.6%). These results are fully consistent with the literature in GCE that holds that Research and development must be achieved mainly through Research into Participative Action (Ortega, 2008; Celorio and López de Munain, 2007). Another issue highly rated by the experts was the significant role played by the University in these activities, so the statement “the University must lead the research team” was highly valued (19.7%). Here there is a clear division of roles according to the previous experience of the actors (Macduff and Netting, 2000). Although the University has a leading role in research activity, according to experts the nonprofit sector must be consulted. In this sense, the experts also assigned a high score to the claim “themes must be part of NGO work areas and interest” (14.3%).

## **Conclusions**

This article has presented a way in which to use expert criteria to obtain the key elements that enhance collaboration between NGO and University in GCE activities in Spain.

These findings point to the need to view GCE activities as part of a larger process, consisting of previous stages leading to enhance stakeholders' participation, as well as institutional recognition and, later, the last stages to ensure the continuity of the process. NGO and University must previously design all these stages, not only the pedagogical or methodological aspects of the activity in question.

Another important finding is the importance of encouraging partnerships between the University and NGOs working in the same line. In this sense, e.g., NGOs that work with professional affiliations like "Veterinarians Without Borders" or "Doctors Without Borders" would find it logical and positive to collaborate with veterinary and medical schools, respectively.

All of these criteria shared by NGOs and University experts play a central role in defining a plan to implement Global Citizenship Education dimensions in the University, a plan that allows for collaboration "based on the differences" between institutions and that makes good use of the resources and abilities of the different stakeholders involved.

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## **Effects of Agricultural Students' Self-Efficacy Beliefs and Test Anxiety on their Achievement Motivation and Academic Performance**

### **Abstract**

In this study, the influences of agricultural students' self-efficacy beliefs and test anxiety on their achievement motivation and academic performance were examined. A sample of 466 students from Iranian Colleges of agriculture participated in this study. A questionnaire was used for data collection. Data were analyzed descriptively and inferentially using SPSS/win and AMOS graphic. The findings revealed that self-efficacy beliefs had more effect on motivation to approach success and academic performance than test anxiety. In contrast, test anxiety had more effect on motivation to avoid failure than self-efficacy beliefs. In addition, motivation to approach success had more effect on academic performance than motivation to avoid failure.

**Keywords:** *achievement motivation, academic performance, self-efficacy beliefs, test anxiety, agricultural students*

### **Introduction**

Global population growth, one of the agricultural sector challenges (Connors et al., 2004), makes the worth of agriculture doubled. As agriculture is based on advanced science and technologies, request for qualified work-forces is growing in this sector (Okutsu et al., 2004). Thus, a main focus of agricultural development policy-makers must be directed toward providing advanced human resources. Trained and skilled work-forces have a significant position in labor productivity

as a main component of agricultural development (Hunt, 2000). Formal education plays an influential role in the development of work-forces and development of economy (Krueger & Lindahl, 2001). Agricultural education is a fundamental element for preparing adept work-forces in agriculture. In an achievement-oriented society, student academic performance is one of the most important pieces of information used by employers in decision making as a signal of individuals' capability (Barkley & Forst, 2004). Exams have always been used as one of the main bases for assessing the student's capability and as a method of selection for employment (Nie et al., 2011). Previous studies in the field of education found different factors affecting students' academic performance including achievement motivation (Collins et al., 2004), self-efficacy (Bandura, 1986; cited in Walker et al., 2006), and test anxiety (Burns, 2004; Trifoni & Shahini, 2011) separately. In the presented study, the influences of self-efficacy beliefs and test anxiety on academic performance, taking into account the mediating role of achievement motivation, are modeled. There are three specific objectives in this study: (1) validating the research scales for data collection of agricultural students, (2) identifying agricultural students' self-efficacy beliefs, test anxiety, achievement motivation, and academic performance (3) determining students' achievement motivation and academic performance by self-efficacy beliefs and test anxiety.

## **Theoretical background**

**Achievement motivation:** In the 1950s and 1960s, achievement motivation was a noticeable topic in motivation research. To define achievement motivation, it is worth explaining the meaning of "achievement" and "motivation" separately. Achievement refers to the importance of fulfillment with effort involved (Mandel & Marcus, 1988). Motivation refers to the process by which goal-directed activity is begun and sustained (Pintrich & Schunk, 2002). Achievement motivation is seen as a personality attribute that differentiates individuals based on their aspiration to do things well (Wigfield & Eccles, 2002). One's perception of probability for achievement results from two types of motives including achieving success and/or to avoiding failure (Atkinson & Feather, 1966). When an individual predicts success of an achievement-related activity, he/she has a sense of pride, as opposed to the prediction of failure, which is related to the consequent feeling of shame (Atkinson, 1966).

**Self-efficacy:** One self-belief construct influencing academic performance is self-efficacy, or the belief that one is capable of successfully carrying out a specific task

(Bandura, 1986; as cited in Walker et al., 2006). Self-efficacy is a multidimensional construct that varies in accordance with the field of demands. In academic settings, according to Schunk (1991), self-efficacy refers to “individuals’ convictions that they can successfully perform given academic tasks at designated levels”. It affects the effort students make to learn and the time they will persist in difficult assignments (Bandura, 1993). There is evidence that self-efficacious students work harder, persist longer in difficult assignments, and have fewer adverse emotional reactions when they face difficulties than those with less self-efficacy beliefs, who doubt their capabilities (Bandura, 1997).

**Test anxiety:** Anxiety is a phenomenon that people often face in their life. Anxiety can be described as an emotional component of human beings that shows itself in a form of worry and restlessness (Olatoye, 2009). Researchers have provided a classification of this phenomenon into different sub-categories, such as test anxiety, which is “a feeling of uneasy suspense” (Rachman, 2004) during evaluation. In other words, test anxiety is an unpleasant feeling of worry experienced where the individual feels he/she is being evaluated (Dusek, 1980). In a competitive society, examinations at all levels of education, including higher education, have been considered as powerful tools for decision making (Rizwan & Nasir, 2010). Therefore, exams can become a main source of stress, particularly when exam scores serve as a significant factor in future opportunities and career pathways (Peleg & Klingman, 2002). According to Sarason (1975), highly anxious individuals have a tendency to perceive evaluative situations as unpleasant to self-esteem. Eysenck and Calvo (1992) and Mulvenon (2005) also found that test anxiety could lead to lower exam scores.

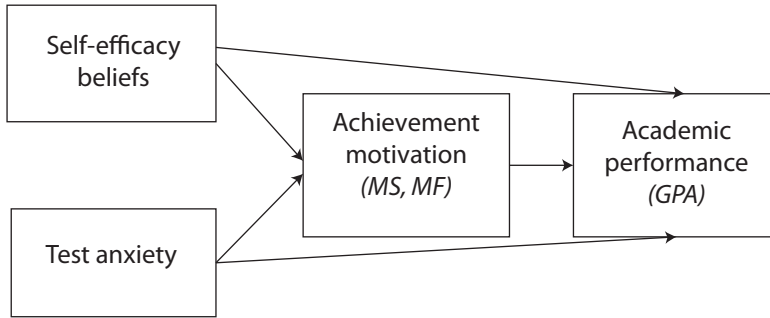
## **Research framework**

The self-efficacy theory assumes that students who consider themselves as able are more likely to be motivated, while those who consider themselves as unable will not be motivated (Seitfert, 2004). Previous research reported a positive correlation between self-efficacy beliefs with achievement motivation (Bong & Skaalvik, 2003; Zhang, 2006) and academic performance (Bong, 2001).

Test anxiety has a negative effect on students’ attitudes toward courses (Hall Brown et al., 2005). Hancock (2001) reported that students with a high anxiety level performed poorly and were less motivated to learn. A main source of anxiety stimulation is a lack of self-efficacy to turn it off (Bandura, 1988). Task significance would be threatening for those who do not perceive themselves as being capable

of carrying out excellently in the task (Nie et al., 2011). Consequently, test anxiety can lead to lower test scores (Hong & Karstenson, 2002). According to the aforementioned literature review, we draw the theoretical framework as shown in Figure 1:

**Figure 1.** Theoretical framework of the research



## **Research questions and hypotheses**

The following questions and hypotheses were developed to guide this study: Q: Can a structural model of the relationships among self-efficacy beliefs, test anxiety, achievement motivation, and academic performance fit across the sample? We predict that self-efficacy beliefs and test anxiety influence achievement motivation and academic performance. Therefore, (Ha) There is a positive relationship between students' self-efficacy beliefs and their motivation to approach success. (Hb) There is a negative relationship between students' self-efficacy beliefs and their motivation to avoid failure. (Hc) There is a negative relationship between students' test anxiety and their motivation to approach success. (Hd) There is a positive relationship between students' test anxiety and their motivation to avoid failure. (He) There is a positive relationship between students' self-efficacy beliefs and their academic performance. (Hf) There is a negative relationship between students' test anxiety and their academic performance. (Hg) There is a positive relationship between students' motivation to approach success and their academic performance. (Hh) There is a negative relationship between students' motivation to avoid failure and their academic performance.



## **Methodology of Research**

**Population and sample:** The statistical population of this study included Bachelor students in the colleges of agriculture at selected universities of Iran (N= 11834). A sample of 466 students (by applying Cochran's formula) was selected, using the proportional random sampling method. The profile of the agricultural students participating in this study showed that 45.9% were male and 54.1% were female, their ages ranged between 18 and 28 (Mean= 21.36), and the most frequency related to the group of 20–22 years old (43.2%). About a third of the respondents (38.2%) lived with their family and the others (61.8%) in a dormitory, and 81.8% of the respondents were from cities.

**Instrument:** The instrument used to collect data was a questionnaire. Students' self-efficacy beliefs (SEBs) scale was derived from items including the motivation part of "the Motivation Strategies for Learning Questionnaire" (MSLQ) (Pintrich et al., 1991). Test anxiety (TA) scale was taken from items comprising the motivation part of the MSLQ (Ibid). "Compared with other students in my field of study, my learning and study skills are strong" and "I feel my heart beating fast when I take an exam," are examples of the SEBs and TA scales, respectively. Achievement motive scale (Gjesme & Nygard, 1970; as cited in Fu, 2011) was applied to measure the students' achievement motivation according to their own judgment. The scale consists of two subscales-motivation to approach success (MS) and motivation to avoid failure (MF)- each subscale with 15 items. "I will be attracted by difficult tasks" and "I dislike working in an unfamiliar environment even if nobody knows," are examples of the MS and MF subscales, respectively. In addition, students' grade point averages at the completion of the whole passed semesters were used to measure their academic performance.

Reliability and face validity of the instrument were checked through the opinions of professors and application of Cronbach's alpha, which estimates the degree of interconnectedness and variance amongst a set of items. Netemeyer et al. (2003) suggested Cronbach's alpha  $>.7$  as an acceptable level. Reliability for the scale of motivation to approach success was .96 and for motivation to avoid failure was .94, which met this criterion. The coefficient for the scales of self-efficacy beliefs and test anxiety were 0.90 and .84, respectively. As the scales of self-efficacy beliefs, test anxiety, and achievement motivation had previously not been tested for the agricultural students, confirmatory factor analysis (CFA) was used to validate the scales (Hernandez, 2010), using a maximum likelihood method of estimation (Table 1). In general, the findings revealed that the scales were reliable and valid measures for applying in data collection of agricultural students.

**Table 1.** Results of confirmatory factor analysis for the scales used in the study

Scale	Item	SE	C.R.	
Self-efficacy beliefs	X1	.834		
	X2	.592	3.188**	
	X3	.784	6.021***	
	X4	.473	2.085*	
	X5	.512	2.151*	
	X6	.535	2.954**	
	X7	.775	5.604***	
	X8	.721	4.994***	
Test anxiety	X1	.841		
	X2	.464	2.985**	
	X3	.544	3.246**	
	X4	.463	2.812**	
	X5	.562	3.355**	
Achievement motivation	X1	.549		
	X3	.330	2.171*	
	X5	.328	2.073*	
	X7	.484	3.177**	
	X9	.470	2.862**	
	X11	.561	4.012***	
	X13	.476	2.901**	
	Motivation to approach success	X15	.585	4.609***
	X17	.511	3.402**	
	X19	.339	2.185*	
	X21	.532	3.550***	
	X23	.442	2.650**	
	X25	.498	3.267**	
X27	.604	5.626***		
X29	.514	3.406**		
Motivation to avoid failure	X2	.654		
	X4	.889	6.869***	
	X6	.521	3.448***	
	X8	.722	4.719***	
	X10	.683	4.272***	
	X12	.409	2.887**	
	X14	.362	2.635**	

Scale		Item	SE	C.R.
Achievement motivation	Motivation to avoid failure	X16	.354	2.089*
		X18	.654	3.975***
		X20	.452	2.945**
		X22	.549	3.561***
		X24	.731	4.746***
		X26	.571	3.877***
		X28	.541	3.451***
		X30	.382	2.805**

Note: SE.= *Standardized Estimate*, C.R. = *Critical Ratio*; \*:  $p < .05$  ; \*\*:  $p < .01$ ; \*\*\*:  $p < .001$ ; ns: Non significant

**Data analysis:** Using SPSS/Windows, Excel, and AMOS Graphic, data were analyzed descriptively and inferentially. The descriptive statistics included frequencies, percentages, means, and standard deviations; while inferential statistics included comparative tests, correlation coefficients, and path analysis. The male and female students' self-efficacy beliefs, test anxiety, achievement motivation, and academic performance were compared, using Students-t test. Using ANOVA, the students' with different years of study were compared with respect to self-efficacy beliefs and test anxiety. Pearson correlation analysis was used to test the relationship between the students' age and their self-efficacy beliefs and test anxiety. Also, path analysis was used to establish the effects of the students' self-efficacy beliefs and test anxiety on achievement motivation and academic performance.

## Results

### Students' self-efficacy beliefs, test anxiety, achievement motivation, and academic performance

The self-efficacy beliefs (SEBs) mean score of the agricultural students was 21.95 out of the maximum possible score of 40, and the test anxiety (TA) mean score of the students was 15.88 out of the maximum possible score of 25. The students' motivation to approach success (MS) was 57.88 (out of 75), with means more than the middle of the scale spectrum. The students' motivation to avoid failure (MF) was 37.97 (out of 75), with means less than the middle of scale spectrum. In addition, the students' academic performance was 15.93 (out of 20).

**Correlation analysis**

Pearson correlation analysis was used to examine the relationship between self-efficacy beliefs, test anxiety, achievement motivation, and academic performance. Self-efficacy beliefs were positively related to motivation to approach success and academic performance ( $p < .01$ ) and negatively related to motivation to avoid failure ( $p < .05$ ). In contrast, test anxiety was negatively related to motivation to approach success ( $p < .01$ ) and academic performance ( $p < .05$ ) and positively related to motivation to avoid failure ( $p < .01$ ). The correlation between motivation to approach success and academic performance was positive ( $p < .01$ ), while the correlation between motivation to avoid failure and academic performance was negative ( $p < .01$ ). Motivation to approach success and motivation to avoid failure were negatively and significantly related ( $p < .01$ ). The detailed results are presented in Table 2.

**Table 2.** Results of correlation analysis

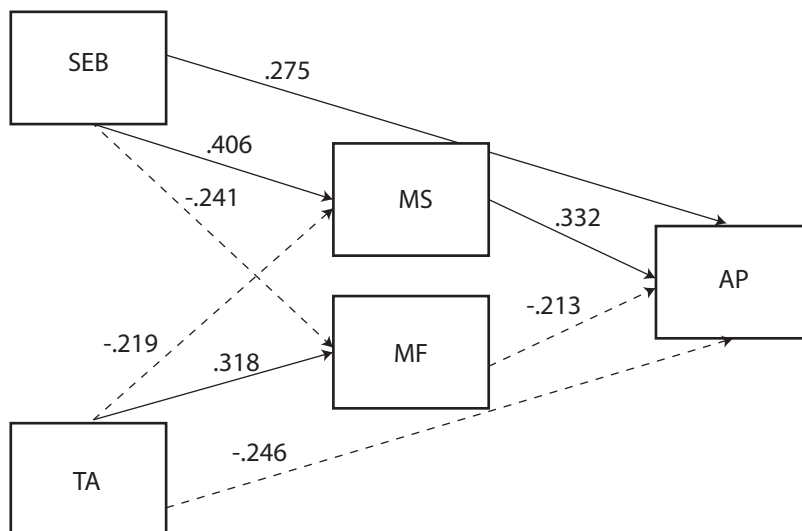
		X1	X2	X3	X4	X5
Self-efficacy beliefs	X1	1				
Test anxiety	X2	-.410**	1			
Motivation to approach success	X3	.487**	-.171**	1		
Motivation to avoid failure	X4	-.112*	.323**	-.624**	1	
Academic performance	X5	.346**	-.106*	.412**	-.135**	1

\*  $p < 0.05$ ; \*\*  $p < 0.01$

**Modeling students’ academic performance by self-efficacy beliefs, test anxiety and achievement motivation**

In order to estimate the effect of the size of self-efficacy beliefs and test anxiety on the students’ achievement motivation and academic performance, path analysis was conducted. Figure 2 shows the path model and numbers on the arrows are standardized coefficients. In this Figure, solid lines represent positive effects and dashed lines represent negative effects. Table 3 displays the standardized total effects, direct and indirect effects of the research model. The sum of the direct and indirect effects reflects a total effect on a given variable.

Figure 2. Path diagram



Note: SEB= *Self-efficacy beliefs*, TA= *Test anxiety*, MS= *Motivation to approach success*, MF= *Motivation to avoid failure*, AP= *Academic performance*

Self-efficacy beliefs had positive effects on motivation to approach success and academic performance, while test anxiety had a positive effect on motivation to avoid failure and a negative effect on academic performance. According to the standardized coefficients, self-efficacy beliefs had a greater effect on motivation to approach success ( $\beta=.406$ ) and academic performance ( $\beta=.460$ ) than test anxiety. In contrast, test anxiety had a greater effect on motivation to avoid failure ( $\beta=.318$ ) than self-efficacy beliefs. In addition, motivation to approach success had a greater effect on academic performance than motivation to avoid failure ( $\beta=.332$ ).

Table 3. Direct, indirect, and total effects of the research model

Outcome	Determinant	Standardized estimates		
		Direct	Indirect	Total
Academic performance	Self-efficacy beliefs	.275	.185	.460
	Test anxiety	-.246	-.101	-.347
	Motivation to approach success	.332	-	.332
	Motivation to avoid failure	-.213	-	-.213

Outcome	Determinant	Standardized estimates		
		Direct	Indirect	Total
Motivation to approach success	Self-efficacy beliefs	.406	-	.406
	Test anxiety	-.219	-	-.219
Motivation to avoid failure	Self-efficacy beliefs	-.241	-	-.241
	Test anxiety	.318	-	.318

## **Discussion and conclusions**

Achievement motivation is a prominent issue for psychologists and individuals in the educational context, resulting in a higher quality of learning and performance. If students are motivated in a positive way, they probably are more apt to take initiative to make positive choices, and thereby engage in a cycle of hard work and success. In this study, two psychological characteristics, namely self-efficacy beliefs and test anxiety, were studied and their effects on achievement motivation and academic performance of students were investigated. The findings about the students' test anxiety, as a negative psychological construct, revealed that the respondents obtained a mean value that was close to the mid-point of the scale, implying that the students perceived examination to a certain extent as an uncertain condition in letting them present their accurate knowledge or skills.

We found that the correlation between motivation to approach success and academic performance was positive, while the correlation between motivation to avoid failure and academic performance was negative. Correlation analysis indicated that self-efficacy beliefs were positively related to motivation to approach success and academic performance. Bong and Skaalvik (2003) reported a positive correlation between self-efficacy beliefs and achievement motivation. In practice, self-efficacy beliefs influence motivation and the expectations of certain outcomes. For example, a student who is confident in his/her academic abilities predicts to perform better on an exam than a student who is not confident. Test anxiety was negatively related to motivation to approach success and academic performance. As Hancock (2001) stated, test-anxious students show a low motivation in highly evaluative and competitive classrooms, while in classrooms with less evaluative environment have a higher motivation to learn. Therefore, since test anxiety has many adverse effects on the accurate evaluation of students' academic performance, it is imperative that professors pay attention to new alternatives for evaluating students. Exams formats should be relatively more flexible in structure than structured and rigid. It is recom-

mended that students be fully informed by professors about the exam format and the type of rating system, which Alcalá (2002) also cited in his study. The findings revealed that self-efficacy beliefs and test anxiety were negatively correlated. This is what happened in previous studies (Bandalos et al., 1995; Bonaccio & Reeve, 2010), which showed that academic self-efficacy was negatively associated with test anxiety in learning context. To explain the finding we infer that the students who have higher self-efficacy beliefs are more likely to be motivated and have fewer adverse feelings when they encounter difficulties. They develop good study habits, adopt a deep learning strategy in their learning to help their understanding of the material, and make an effort to relax periodically during tests. Therefore, their test anxiety will be decreased and they will get better grades compared to the students who doubt their capabilities. Consequently, this cycle will repeat and the successful students will get higher self-efficacy beliefs, higher achievement motivation, less test anxiety, and finally, higher grades in exams. Accordingly, we recommend that agricultural colleges pay attention to both these factors. Students should be trained about handling stress situations in academic life. Study counselors at agricultural colleges can provide useful information about methods to control test anxiety. Positive thinking, use of humor, and making an effort to relax periodically during exams are some strategies which students can use for coping with test anxiety. Therefore, it is imperative that each university possesses a specialized consultation center to offer students useful information about increasing self-efficacy beliefs and handling test anxiety.

There are some limitations that need to be considered and addressed in future research. This study was limited as it was based on self-reported data. It is possible that students forgot their grade point average (GPA) or reported it incorrectly. This study focused on the effects of self-efficacy beliefs and test anxiety on achievement motivation and academic performance. As self-efficacy beliefs can be changed through experience and vary depending upon the context and specificity of assignments (Saracalolu & Dincer, 2009), it is important to investigate educational factors influencing students' self-efficacy beliefs. Furthermore, in order to effectively manage test anxiety, educational factors influencing test anxiety should be studied.

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## **Intercultural Education in Schools of the Polish-Czech Borderland: Experiences – Problems – Prospects**

### **Abstract**

What is explored in the presented text, in reference to the results of authorial studies conducted in 2005/06 and 2012/13 on teachers working in kindergartens, primary, lower- and upper-secondary schools, are the issues of the implementation of intercultural education in the Polish-Czech borderland. This is done in reference to the levels of the work of school and the teacher, outlined by Jerzy Nikitorowicz, within three major tasks of intercultural education. The empirical data based on questionnaire surveys, observation and document analysis allowed for characterizing contemporary chances and barriers of education towards interculturalism in the environment of both urban and rural school.

**Keywords:** *multi- and intercultural education, Polish-Czech borderland, borderland school, European Union*

### **Introduction**

The historical development and the current state of education in the territory of Cieszyn Silesia have been extensively discussed in expert literature. For twenty four years, regular studies in this field have been carried out also by the Department of General Pedagogy of the University of Silesia at the Faculty of Ethnology and Education in Cieszyn. The Department started its activity by undertaking cooperation with Polish educational environments in the Czech part of the Southern borderland (in Zaolzie) and by conducting the first diagnostic group studies among learners attending primary schools with Polish as the teaching language. These

undertakings resulted in some papers presenting, among other things, an attempt at personality diagnosis, the order of values, life plans, as well as determinants of life paths of the young from Zaolzie or their social functioning and educational problems on the Polish-Czechoslovakian and later Polish-Czech borderland. These publications gave birth to the series ‘Intercultural Education,’ which has been issued since 1992 (Lewowicki, 2012, pp. 15-46; Lewowicki, 2013, pp. 19-37)<sup>1</sup>.

Both in the Polish part of Cieszyn Silesia and in Zaolzie, attempts have been made (especially after 1989) at enlarging the infrastructure of the existing schools and creating new ones along with non-school educational and cultural institutions. The following institutions functioned in Cieszyn in the school year 2012/13: 17 kindergartens (including 6 non-state ones), 9 primary schools (including 3 non-state ones), 5 lower-secondary schools (including 2 non-state ones), 17 upper-secondary schools (including 3 non-state ones) and 4 higher education institutions (including 2 non-state ones)<sup>2</sup>. In the Polish part of the borderland, both Catholic and Evangelical religion lessons have been taught since 1991 in all kindergartens and all types of schools with the weekly assignment of two lessons.

School education of the Polish national minority in Zaolzie is subordinated to the laws and responsibilities of the Czech school system with the possibility to implement the curricula in the native language. The analysis of the network of Polish education institutions allows for confirming the steady decrease (since the middle of the 20<sup>th</sup> century) in the number of both kindergartens and schools, as well as in the number of learners attending education institutions with Polish as the teaching language (Table 1).

Education of the Polish minority takes place in two districts – Karvina and Frýdek-Místek. In the school year 2012/13, the network of Polish school education in Zaolzie consisted of 33 kindergartens, 25 primary and 2 secondary schools. In September 2012, 2871 learners (including 829 pre-school age children) started education in these institutions.

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<sup>1</sup> 55 papers of the series “Intercultural Education” have been published so far. Moreover, the journal “Intercultural Education” has been also published in the Cieszyn academic centre since 2012. The issues explored by both the series and the journal are presented in interpretations appropriate for pedagogy, psychology, sociology, philosophy, linguistics, theology, cultural studies, history (and other disciplines of the broadly understood humanities). The category of “borderland” has been treated here in Bachtin’s approach – as the borderland of cultures, societies, religions (and not mainly the borderland of states and nations). Methodological research is carried out with a lot of thought and attempts to improve the study methodology and ways of research results interpretation.

<sup>2</sup> The data collected by the Department of Education and Culture of the City Office and the Department of Education of the District Office in Cieszyn.

As concerns primary education, two types of schools can be distinguished: schools with a smaller number of grades (1-5) and with all grades (1-9). The most comfortable conditions occur in schools in Czech Cieszyn (15 classes, 310 learners) and Jablunkov (11 classes, 197 learners). Among secondary schools, the leading position has been occupied for decades by the Polish Secondary School (Gimnazjum Polskie), in which a four-year education is carried out. 328 learners in 12 classes are educated in its main seat in Czech Cieszyn.

**Table 1.** Number of learners and educational institutions with Polish as the teaching language in Zaolzie in 1950-2013 (districts of Karvina and Frydek-Mistek)

Year	1950		1980		1990		2010		2013	
	NI	NL	NI	NL	NI	NL	NI	NL	NI	NL
<b>Type of institution</b>										
Kinder-gartens	68	2417	54	1549	40	1048	33	762	33	829
Primary schools	88	8414	33	3652	30	3344	25	1630	25	1660
Secondary schools	16	702	11	909	5	758	2	488	2	382
<b>Total</b>	<b>172</b>	<b>11 533</b>	<b>98</b>	<b>6110</b>	<b>75</b>	<b>5150</b>	<b>60</b>	<b>2880</b>	<b>60</b>	<b>2871</b>

NI – number of institutions; NL – number of learners

Source: self-reported study based on the data collected by the Pedagogical Centre for Polish Minority Schools in Czech Cieszyn

Another relatively well-ranked school is the Business Academy (Akademia Handlowa) in Czech Cieszyn, where a four-year programme is also implemented and where additionally classes with Polish as the teaching language are conducted. Except for schools with a smaller number of classes in Kosariska, Ropice and Stonava, which are subordinated to the Czech administration, the other schools act independently as most of them have the status of an autonomous administrative and economic unit<sup>3</sup>.

Polish school education, as the only minority education system in the Czech Republic, provides education in the full educational cycle and it faces problems typical of each education system in the countries of developing market economy.

<sup>3</sup> [www.pctesin.cz](http://www.pctesin.cz) (accessed: 5th August, 2013).

## **Implementation of intercultural education in schools of Cieszyn Silesia – authorial research results**

The authorial studies on the implementation of intercultural education in schools in the Polish-Czech borderland have been conducted twice. In the school year 2005/06 the studies involved teachers working in the Primary School with Polish as the teaching language in Czech Cieszyn as well as kindergarten tutors and teachers from Polish primary, lower-secondary and upper-secondary schools in urban (Cieszyn, Skoczów, Ustroń) and rural environments (Bażanowice, Brenna, Golezów). The research comprised 1066 teachers, including 220 kindergarten tutors, 470 primary school teachers, 141 lower-secondary school teachers and 235 teachers from upper-secondary schools (general, vocational and technical ones) (Ogrodzka-Mazur, 2009, pp. 137-168)<sup>4</sup>. In 2012/2013, the studies were repeated in the same education institutions and they involved 988 people, including 188 kindergarten tutors, 425 primary school teachers, 150 lower-secondary school teachers and 225 teachers from upper-secondary schools (general, vocational and technical ones). Altogether, 2054 teachers working in kindergartens and schools in the Polish-Czech borderland took part in the studies and the data was collected with the help of a questionnaire survey, observation and document analysis.

In reference to the levels of the work of school and the teacher, outlined by Nikitorowicz in regard to the implementation of the tasks of intercultural education, the undertaken issues allow for answering the questions concerning:

- inheriting, consolidating and deepening indigenous values – (a) the occurrence and significance of elements associated with regional education in teaching the young at different educational levels, (b) the range of teaching contents aiming at familiarization with Cieszyn Silesia, (c) the applied methods, means and forms of transmission of regional contents in education, (d) the implemented and currently prepared regional education curricula;
- acquiring and shaping European integration and supra-local values on the basis of indigenous ones – (a) activity of school and cross-school European Clubs, (b) international exchange of teachers and youth within EU educational programmes, (c) education and training of teachers within Polish-Czech projects subsidized by the European Union – the European Regional

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<sup>4</sup> Some research with the application of the method of observation, questionnaire survey and document analysis was conducted by participants of seminar groups supervised by the author, as well as full- and part-time pedagogy students of the Faculty of Ethnology and Education (University of Silesia), who were interested in the investigated problems and who came from Cieszyn, Czech Cieszyn and the surroundings.

Development Fund, the Programme Interreg IIIA Czech Republic-Poland and the Microproject Fund in the Euroregion "Cieszyn Silesia".

I. Inheriting, consolidating and deepening indigenous values is implemented by teachers through introducing regional contents to regular daily classes. Both in 2005/06 and in 2012/2013, the conducted observation allowed for confirming the application of contents associated with the "Little Homeland" in school topics, especially at the level of pre-school education and integrated education in lower classes of primary school. At this educational stage, teachers working with small children are interested in regular implementation of regional and intercultural education (Figures 1 and 2) and they engage parents and eminent representatives of local environments in this activity. In the opinion of these teachers, regional education allows for: (a) providing the child with a particular knowledge of the region by taking into account the geographical, social, cultural aspects and the broadly understood tradition, (b) extracting (in the process of education) various values occurring in one's own region in the context of national and general human values, (c) preparing the learner for receiving, selecting and creating values by the acquisition of different types of information and experience, (d) developing the need for and skill of expressing an evaluative attitude to the surrounding reality and presenting various systems of values (cultures) and the consequences of applying them by man and society, (e) shaping the so-called pluralist identity (Bednarek, 1999; Królikowski, 2001), understood not as the attitude of separation, but as the basis for creating attitudes of openness and tolerance which are oriented at the pluralism of different human cultures and their understanding.

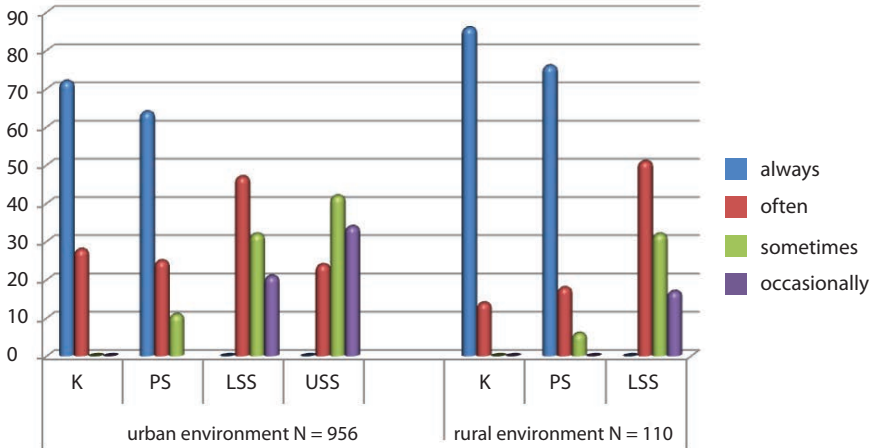
In comparison to the first research stage, tutors working both in urban and rural kindergartens and teachers in grades 1-3 currently declare more frequent use of authorial curricula and school programmes of moral education<sup>5</sup>, they also take part in different forms of training in intercultural and regional education more often.

Teachers working in secondary schools both in Poland and in the Czech Republic use regional contents in teaching the young within a still lesser range than in the comparable studies carried out in 2005/06. References to the idea of regionalism in their educational undertakings are declared mostly by teachers of Polish, history and geography. The teachers' lack of readiness for such activities is

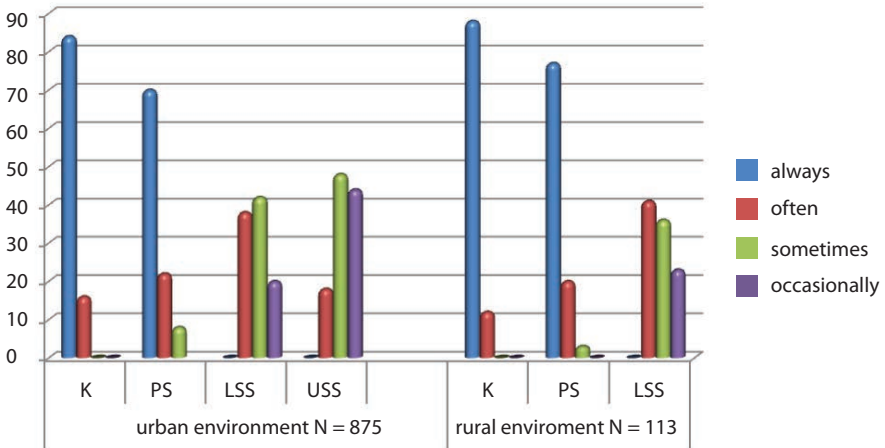
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<sup>5</sup> These are, e.g., the following programmes implemented in Cieszyn, Skoczów and Ustroń, and used within the interdisciplinary path "Regional education – cultural heritage in the region": *Knowledge of the Cieszyn Silesia region; Ustroń – my town; My Little Homeland – Cieszyn Silesia; What is dear to my heart*. In Czech Cieszyn, owing to the activity of the Pedagogical Centre for Polish Minority Schools, teachers can use authorial textbooks and two journals "Jutrzenka" and "Ogniwo", in which subjects associated with Cieszyn Silesia are presented.

**Figure 1.** Intensity of introducing regional contents to the teaching process by teachers – the 2005/06 school year (percentage data).



**Figure 2.** Intensity of introducing regional contents to the teaching process by teachers – the 2012/13 school year (percentage data)



K – kindergartens; PS – primary schools; LSS – lower-secondary schools; USS – upper-secondary schools; N – number of examined teachers

Source: self-reported study



invariably excused by the necessity to realize overburdened curricula at this stage of education and by the more important need to prepare learners for competence tests and secondary school leaving exams. What is most often indicated in the respondents' statements concerning the implementation of regional education is the organization of quizzes at the region and dialect competitions. They also mention document analysis, which comprises formal documents or written personal statements, and the analysis of source and literary texts. What also (apart from various publications) seems, to the respondents, an important source of knowledge of the region, particularly in reference to modern times and contemporary cultural life, is oral information passed by residents associated with the region because of their activity or life experience. In the opinion of the examined teachers, the specificity of the collected materials about the region strengthens learners' bonds with their environment and naturally shapes their feeling of pride and belonging to the regional community, as well as satisfaction from its achievements. This specificity also creates an appropriate climate for experiences, which enhances undertaking one's own activities for the local environment. The awareness of the need for regional education, presented in the teachers' declarations, translates into practical actions to a very small degree.

II. Acquiring and shaping European and supra-local integration values is implemented, according to all the examined teachers, at each stage of education. In kindergartens, tutors introduce the basics of the knowledge concerning the European Union (symbolism, terminology). Within regular classes, they also undertake activities which educate towards tolerance, openness, respect or sensitizing children to Otherness and towards strengthening their self-esteem, safety and self-acceptance.

What functions well in primary schools and lower- and upper- secondary schools are school or cross-school European clubs. They mainly aim at broadening learners' knowledge of Europe (in different aspects: geography, history, culture, economy), European institutions (their structure, goals, methods of acting), and the challenges facing contemporary Europe. An additional opportunity to familiarize (in a direct way) with European countries and their cultural specificity is offered by international youth exchange, implemented by schools within EU educational programmes. Exchange programmes with schools in England, Austria, the Czech Republic, Finland, France, Germany, Romania, Slovakia, Sweden, Wales, Italy and Hungary are invariably the most popular. Owing to them, participants get acquainted with socio-cultural determinants of their foreign peers' life and, first of all, learn and improve their competence in foreign languages. Learners from Polish upper-secondary schools also actively participate in selected actions of the EU programme *Youth*.

The examined teachers (71%) present a positive attitude to the process of European integration. However, this standpoint is declared by fewer teachers than in the comparable studies in 2005/06 (82%). More respondents (19% contrasted with 13% in 2005/06) express a negative attitude and claim that the European Union has changed nothing and is unable to help either Poland or the Czech Republic. Yet, more respondents (10% contrasted with 5% in 2005/06) declare an indifferent attitude to this issue. As at stage I of the studies, while specifying notable benefits from the EU membership, the examined teachers most frequently indicate:

- possibility of benefiting from various EU programmes, including educational ones;
- possibility of learning foreign languages and studying in EU countries, acknowledging university diplomas;
- international exchange of teachers and learners from various types of schools within EU countries,
- establishing Euroregions, e. g. Cieszyn Silesia (Śląsk Cieszyński – Tesinské Slezsko);
- abolishing borders between Poland, the Czech Republic and the European Union, which contributes to increasing tourism in these countries, as well as to the increasing number of Poles and Czechs visiting tourist destinations in EU countries.

Teachers in Poland and the Czech Republic participate in many educational projects, co-financed by the European Union and organized by Departments of Education in the Cieszyn district, the Pedagogical Centre for Polish Minority Schools in Czech Cieszyn or the Congress of Poles in the Czech Republic. From the perspective of their own training and development, the examined teachers enjoy most the following projects:

- *Śląsk Cieszyński: historia i współczesność we wspólnej Europie /Cieszyn Silesia: history and modern times in the common Europe/*, implemented by Związek Komunalny Ziemi Cieszyńskiej /Municipal Association of the Cieszyn Area/ and Regionální Rada Rozvoje a Spolupráce /Regional Council for Development and Cooperation/ from Trinec, subsidized from EU resources. The new source texts resulting from the project and concerning the events associated with the history of Cieszyn Silesia are used in teaching history in both neighbouring countries;
- *Śląsk Cieszyński – mała ojczyzna w Europie /Cieszyn Silesia – a little homeland in Europe/*, implemented since 2003, currently its second edition is introduced. The project helps to work out some methodological materials for teachers, both in Polish and Czech;

- *Edukacja Interkulturowa On Line /Intercultural Education Online/*, implemented within the programme Socrates Comenius 2.1., aiming at preparing teachers and learners from Poland, the Czech Republic and Germany for dialogue and cooperation in shaping the Europe of many cultures, for teaching tolerance and respect for human rights. In this project, owing to the application of modern computer technologies, new pedagogical methods and the WebQuest method, teachers are offered possibilities of broadening their knowledge about partner regions (Kubiczek, 207, p. 161);
- *Dziedzictwo kulturowe jako klucz do tożsamości pogranicza polsko-czeskiego na Śląsku Cieszyńskim. W 1200-lecie Cieszyna /Cultural heritage as the key to the identity of the Polish-Czech borderland in Cieszyn Silesia – at the 1200<sup>th</sup> anniversary of Cieszyn/* – in October and November 2009 a cycle of workshops took place for secondary school youth from both sides of the border. This was dedicated to cultural differentiation, transmission of values in family and identity shaping. Polish and Czech youth participated in the workshops conducted by students and graduates of the University of Silesia – of the Faculty of Ethnology and Education in Cieszyn (Rusek, Pieńczak, Szczyrbowski, 2010);
- *Kolorowe ścieżki Euroregionu. Doskonalenie zawodowe nauczycieli w zakresie edukacji regionalnej i międzykulturowej /Colourful paths of Euroregion. Teacher training in regional and intercultural education/* – implemented in 2010/2011, aiming at kindergarten tutors and early school teachers and comprising 6 educational paths: historical path; path of tradition; path of tales, fables and legends; Cieszyn path; contemporary path; ecological path, and intercultural workshops “We learn together”<sup>6</sup> (Gajdzica, Kubiczek, 2011).

The teachers’ awareness of the need for European education, which is clearly manifested in their responses, gives rise to the application of various forms of work with the young in this respect (school European clubs, international exchange, participation in EU educational programmes) and aims at triggering learners’ interest

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<sup>6</sup> The grant *Kolorowe ścieżki Euroregionu. Doskonalenie zawodowe nauczycieli w zakresie edukacji regionalnej i międzykulturowej /Colourful paths of Euroregion. Teacher training in regional and intercultural education/*, Registration number: CZ.3.22/2.3.00/09.01504, was implemented in 2010/2011 within the Operational Programme of Cross-border Cooperation Poland – the Czech Republic. The University of Silesia, Faculty of Ethnology and Education in Cieszyn, took part in the project as a partner of the Pedagogical Centre for Polish Minority Schools in Czech Cieszyn.

in European issues and developing their knowledge of the role of the region, Poland and the Czech Republic in the process of European integration.

## **Conclusion**

The presented discussion on implementing intercultural education by teachers in various types of educational institutions in the Polish-Czech borderland allows for indicating characteristic tendencies in this respect. It also reflects current chances and barriers of education towards interculturalism in the conditions of a typical school.

- The contents associated with Cieszyn Silesia are taken into account by teachers in educating mostly pre-school and early school children, which enhances shaping their feeling of regional identity and broadens the knowledge of their own “little Homeland”.
- Teachers working in lower- and upper-secondary schools apply regional contents in teaching youth rather sporadically. Referring to the idea of regionalism is declared mainly by the teachers of Polish, history and geography. Therefore, it might seem that discontinuation of regional and intercultural education at these educational stages in most taught subjects substantially “weakens” the feeling of cultural identity of the young, who – owing to modern information technologies – are involved in national, European or global issues more frequently than in regional ones.
- Material, symbolic and societal culture of one’s own region is presented to learners in rural schools systematically and more frequently than to their urban peers, who in this way take lesser part in the building of “man-oriented” education, in contrast to global or “world-oriented” education, in which the social system becomes the superior category (regionalization of education) (Kossak-Główczewski, p. 118).
- Authorial courses aiming at popularization of the idea of regionalism and interculturalism are designed only by pre- and early school education. At higher education levels, teachers do not undertake such attempts, always excusing this with the necessity to implement over-burdened secondary school curricula. Therefore, what requires no further justification is the thesis on the need for orientation change in the ranking of tasks for contemporary school and on the necessity of substantial restructuring of teachers’ way of thinking. The effectiveness of education in acquiring competences for

the implementation of intercultural education depends on teachers' expert and methodological preparation at universities and their self-training.

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## Manifestations of Aggressive Behaviour in Pupils – Theoretical Views and Research Findings

### Abstract

The study presents results of research conducted by means of the BPAQ and Cyber-Bullying Tolerance questionnaires on a sample of 788 elementary school pupils of the 8<sup>th</sup> and 9<sup>th</sup> grades. It shows an increase in verbal aggression, hostility and anger in the pupils. In terms of gender, the increase was confirmed in verbal aggression in boys and physical aggression in girls. Tolerance to cyber-bullying as a form of aggressive behaviour increases with the development of science and technology and the increase in pupils' aggressive behaviour. Knowledge of manifestations and causes of pupils' aggressive behaviour is the basis for the educational work of teachers and other professionals.

**Keywords:** *aggressive behaviour, BPAQ questionnaire, physical aggression, hostility, cyber-bullying, verbal aggression, anger.*

### Introduction

Manifestations of aggressive behaviour are a negative phenomenon of contemporary society, having consequences not only in the private life of a part of the population, but also in the life of the whole society. The study focuses on the theoretical clarification of the essence of aggressive behaviour and accentuation of the problem of an exact definition of aggression and cyber-bullying in human behaviour. Aggression and aggressive behaviour are perceived in the context of amoral and antisocial behaviour, social pathology and/or deviation by most of the authors studying this phenomenon. As stated by P. Ondrejko, violence increas-

ingly becomes an everyday occurrence, a part of cultural normalization (violence habituation). Unfortunately, he also states that human creativity is not limited only to scientific discoveries, technological inventions and artistic production, but it also includes creativity in violence and terror (2009, pp. 81–83). Sensitively perceiving everyday events in our surroundings we agree with the author that great violence tends to have its germs in “minor” acts of violence.

The school and teachers play an important role in addressing the issue of pupils’ aggressive behaviour. Daily contact with pupils enables them to capture even “minor” forms of aggressive and violent behaviour, diagnose them and intervene educationally.

## **1. Theoretical Basis**

### **1.1. Aggression and Essence of Aggressive Behaviour in the Child**

Aggressive behaviour can manifest itself both in a positive and a negative form. In an older professional publication, aggression is defined by A.H. Buss (1961) as a mode of behaviour, reaction to a stimulus, characterised by its properties – offensiveness, violence, destruction. P. Seidler (2005, p.87) emphasises another property, namely an unreasonably violent reaction to even minor stimuli. A concept co-related to aggression is aggressiveness as a tendency to act offensively. It may be physical (fights or attacks), psychological (verbal) and relational, e.g. social exclusion. Verbal and physical aggressiveness include hurting and harming others and represent an instrumental component of behaviour. Hostility as an attitude is accompanied by feelings of ill will and injustice and represents a cognitive component of behaviour. Anger refers to feelings and attitudes and is an emotional or affective component of aggressive behaviour. Anger and hostility have physiological effects on the vegetative and somatic nervous system and, in both cases, represent a tendency to aggressive behaviour (cf. Spielberger, C.D. et al., 1995, Van Goozen, S.H. et al., 1994). The typology of aggressive behaviour varies; it includes various types and forms of inappropriate and antisocial behaviour. An increasingly frequent form of aggressive behaviour in children is bullying. In the Slovak Republic, the issue of aggression among children has been dealt with by E. Gajdošová and G. Herényiová, who developed the programme of Tolerance versus Violence at Schools (2006) based on a theoretical-empirical platform. M. Adamík-Šimegová (2011) did research into the cognitive, emotional and moral aspects of bullying. She found out that a third of aggressors were also victims of bullying, while the most frequent forms were slander, physical and verbal aggression, exclusion from



the group, bullying with a sexual context, threats, theft and insulting messages via mobile phone and the internet. In the Slovak Republic, the issues of risk behaviour, delinquency and criminality, and aggressive behaviour have been dealt with by I. Emmerová (2011), P. Ondrejkoivič (2009) and others.

It is obvious that the causes of aggression are heterogeneous. C. Határ (2007, p. 28) highlights three basic categories of aggression: the theory of innate inclination, the theory of reaction and the theory of social learning. Aggression may be determined by biological-physiological and psychological components, but also by the socio-cultural environment in which the person moves. The same is the reason why acts and forms of aggressive behaviour have taken different shapes across history. The knowledge of the forms and ways of pupils' aggressive behaviour at the beginning of the 3rd millennium is enriched by new ways of inappropriate behaviour. With the development of science and IT technology penetrating schools, aggressive behaviour moves to the cyberspace: as a result of which we can talk of cyber-bullying, which is in the centre of interest also of Slovak specialists (Hollá, K. 2009, 2010; Kariková, S., Šimegová, M., 2009; Kariková, S., 2010; Dulovics, M., 2011; Kováčová, A., 2011; Emmerová, I., 2012 and others).

The National Crime Prevention Council (NCPC) characterises cyber-bullying as abuse of the internet, cell phones and other text or image transmitting devices with an intention to hurt or embarrass another person. J.W. Patchin and S. Hinduja (2012) speak of intentional and repeated harm caused by computers, telephones and other electronic devices. Cyber-bullying constitutes repeated, intentional, aggressive behaviour in the form of online attacks on a victim or victims, who cannot defend themselves against such attacks. The most frequent forms of cyber-bullying include: online provocation, online stalking, online harassment, online defamation, online cheating, exclusion from an online group, etc.

## **2. Research**

### **2.1. Research Subject and Questions**

The subject of the research was aggressive behaviour in pupils of older school age. The purpose of the research was to find out and verify the level of pupils' aggressive behaviour in the west Slovakia region and to find out the relation between aggressive behaviour and tolerance to cyber-bullying. The following questions emerged from the purpose:

Are there any differences in the level of pupils' aggressiveness in terms of the components of aggressiveness and in terms of gender?

- Will the same level of aggressive behaviour show in pupils repeatedly?
- Is there a relation between aggressive behaviour and tolerance to cyber-bullying?

## 2.2. Research Sample

The sampling design was based on four variables: gender, age, class and geographic conditions. The group selection represented a sample of 850 pupils of the 8<sup>th</sup> and 9<sup>th</sup> grades of elementary schools (state and church ones) in the west Slovakia region. Participants in the research were pupils of older school age, 14 to 16 years old.

The research took place within two school years (2008/2009, 2009/2010):

- **In the 1<sup>st</sup> year of the research** the group selection consisted of 350 respondents. Out of the number, 8 questionnaires were filled in incompletely or incorrectly. In the 1<sup>st</sup> year, the return of questionnaires was 97.7%. Thus, (n) 342 pupils, 174 boys and 168 girls participated in the research investigation;
- **In the 2<sup>nd</sup> year of the research** the selection consisted of 500 respondents. The research was conducted using 2 research tools. The questionnaires (BPAQ and Cyber-Bullying Tolerance Questionnaire) were answered by 446 participants, representing the return of 89.2%. (n) 446 pupils participated in the research, out of whom 233 were boys and 213 were girls.

In total, 778 pupils participated in the research. The reason for the selection was the fact that at this stage of development children search for their identity by means of the influence of their families, peer groups, various subcultures and media, which has an enormous impact on their personalities, behaviour and experience. In this period, aggression becomes a highly stable personal characteristic, especially in boys (Cairns, P., et al., 1989, in Berk, L.E., 1994).

## 2.3. Research Methods and Methodology

For the requirements of the research, the Aggression Questionnaire by A.H. Buss and M. Perry (1992) and the Cyber-Bullying Tolerance Questionnaire were chosen.

The Aggression Questionnaire (hereinafter BPAQ) is based on an older version of the Aggression and Hostility Inventory BDI (Buss, A.H., Durkee, A.) and is a revised version of the inventory. It is a self-assessment inventory based on an assumption that aggression as a personality trait and complex phenomenon can be divided by types into physical and verbal aggression, hostility and anger.

The above questionnaire represents a standardized research tool for aggression measurement in the US population for the age group of 30-year-olds. Out of the

psychometric properties of this research tool, Cronbach's alpha coefficient for the total score of aggression 0.89 is given, with the coefficient fluctuating from 0.72 to 0.85 in individual aggression components. The values mentioned give evidence of good internal consistency of the questionnaire. The test-retest reliability was carried out within 9 weeks and its value amounted to 0.80 (Buss, A.H., Perry, M., 1992). The Aggression Questionnaire BPAQ is a research tool with 29 items, measuring four types of aggressive behaviour – verbal aggression (5 items), physical aggression (9 items), anger (7 items) and hostility (8 items) on a 5-point Likert-type scale, on a scale from 1 “*extremely uncharacteristic of me*” to 5 “*extremely characteristic of me*”. Two items (no. 9 and no. 16) are reverse scored (cf. Table 1).

**Table 1.** Aggression Types and Values by BPAQ (1992)

Aggression Types	Item No.	Minimum score	Maximum score	Men %	Women %
Physical aggression	2, 5, 8, 11, 13, 16*, 22, 25, 29	9	45	24.3	17.9
Verbal aggression	4, 6, 14, 21, 27	5	25	15.2	13.2
Anger	1, 9*, 12, 18, 19, 23, 28	7	35	21.3	20.3
Hostility	3, 7, 10, 15, 17, 20, 24, 26	8	40	17	16.7
Total	1–29	29	145	77.8	68.2

As far as the questionnaire verification in other countries is concerned, many studies were done in Europe (in Italy, Spain, Holland, Germany, etc.), America and Japan. Primarily, it was designed to measure aggression components in the adult population. It was also used to measure aggression in children and adolescents, e.g. in research by V.V. Ruchkin, M. Eisemann (2000, age of respondents 14–18), M. Morren and C. Meesters (2002, age of respondents 12–18), J.P. Maxwell (2007, average age of men 21.91 and women 19.72), M. Sommantico et al. (2009). In 2009 in Lebanon, the BPAQ questionnaire was used in the research *Adolescents Video Game Habits as Predictors of Aggressive Behavior, Hostility and School Performance with pupils at the age of 13–15* (N.G. Hanna, 2009).

For the purpose of our research, the BPAQ questionnaire had to be modified and revised to meet the requirements of the original questionnaire. The BPAQ questionnaire was modified in 2007/2008 on a sample of 246 pupils of the 8-th and 9<sup>th</sup> grades. The reason for the modification was translation and stylistic revision of items 1, 3, 9 and 24, in which the subject of research was adapted.

The Cyber-Bullying Tolerance Questionnaire was used to find out the level of the pupil's tolerance to aggression and cyber-bullying. Individual items of the questionnaire were divided into two subscales by the aggression forms measured:

1. Subscale of aggressive behaviour (items 1, 2, 3, 4 and 8);
2. Subscale of cyber-bullying (items 5, 6, 7, 9 to 20).

The Likert-type attitude scale questionnaire was capturing the level of respondents' tolerance to cyber-bullying on an odd number 5-point scale, from 1 "I definitely do not agree" to 5 "I definitely agree". The questionnaire consisted of 20 items, each returning 1 to 5 scores. The final result was a score of 20 to 100. Questions 11 and 12 were reverse scored. The level of the pupil's tolerance to cyber-bullying was measured by a total sum of scores, with a higher total score indicating a higher level of tolerance, a lower total score indicating a lower level of tolerance to cyber-bullying.

In processing of the research data, descriptive statistics were used, namely the description of central tendency (arithmetic mean  $\bar{x}$ , median  $\tilde{x}$ , mode  $\check{x}$ , standard deviation  $\sigma$ ), the Wilcoxon Two-Sample Test and Spearman's rank correlation coefficient.

### 3. Research Results and their Interpretation

#### Level of Pupils' Aggressive Behaviour

Aggressive and hostile behaviour is a serious problem. Aggressive behaviour may be considered a problem of the entire society. The way in which society develops also reflects in the behaviour of children and adolescents, either in the negative or in the positive sense of the word. The level of aggression in pupils was examined by the BPAQ aggression questionnaire.

The values of individual components of aggression in the 1<sup>st</sup> year of the research are shown in Table 2. 342 respondents participated in the research, out of them (nb) 174 boys and (ng) 168 girls.

**Table 2.** Indicators of Values in Aggression for the 1st Year of Research

Aggression type	Min	Max	Boys %	Girls %	$\bar{x}$	$\tilde{x}$	$\check{x}$	$\sigma$
Physical aggression	9	45	22	17.9	20.3	19	16	7.1
Verbal aggression	5	25	15.2	15.8	15	15	15	3.8
Anger	7	35	21.8	23.3	18.9	18	22	4.8
Hostility	8	40	16.4	18.5	18.5	18	18	5.9

The percentages in the table show the obtained average score in individual aggression types per gender. Considering the standardized indicators, both genders showed an increased level in the values of *verbal aggression* (nb = 15.2%; nd = 15.8%;  $\bar{x}$  = 15;  $\tilde{x}$  = 15;  $\check{x}$  = 15;  $\sigma$  = 3.8); *anger* (nb = 21.8%; ng = 23.3%;  $\bar{x}$  = 18.9;  $\tilde{x}$  = 18;  $\check{x}$  = 22;  $\sigma$  = 4.8) and *hostility* (nb = 16.4%; ng = 18.5%;  $\bar{x}$  = 18.5;  $\tilde{x}$  = 18;  $\check{x}$  = 18;  $\sigma$  = 5.9).

The girls' physical and verbal aggression tended to be expressed by anger and hostility. In comparison with other research (cf. the research above), the boys' physical aggression was lower. Both genders showed an increased level of verbal aggression, anger and hostility. The mentioned aggression types and variables can be comparable to psychological aggression manifested as ridicule, intrigue, refusal of communication and friendship, and humiliation. The obtained values in aggression became the basis for the implementation and verification of the data in the following school year 2009/2010.

In the second year, the research was repeated using the research tool, the BPAQ questionnaire, on a sample of elementary school pupils of the 8<sup>th</sup> and 9<sup>th</sup> grades in the total number (n) of 446 pupils, out of whom (nb) 233 were boys and (ng) 213 were girls.

The purpose of the second measurement was to find out the level of aggressive behaviour in pupils as indicated in the BPAQ questionnaire. The first step was to find out the level of aggression. Singular data are presented in Table 3.

**Table 3.** Indicators of Values of Aggression for the 2nd Year of Research

Aggression type	Min	Max	Boys %	Girls %	$\bar{x}$	$\tilde{x}$	$\check{x}$	$\sigma$
Physical aggression	9	45	22.4	18.9	20.8	20	15	7.4
Verbal aggression	5	25	13.6	13.6	13.5	13	11	3.8
Anger	7	35	16.9	18.2	17.5	17	15	5
Hostility	8	40	21	21.9	21.4	21	18	6.1

In the second year the increased level re-appeared in the values of *verbal aggression* (nb=13.6%; ng=13.6%;  $\bar{x}$  = 13.5;  $\tilde{x}$  =11;  $\check{x}$  =15;  $\sigma$  = 3.8); *anger* (nb = 16.9%; ng=18.2%;  $\bar{x}$  =17.5;  $\tilde{x}$  =17;  $\check{x}$  =15;  $\sigma$  =5) and *hostility* (nb=21%; ng=21.9%;  $\bar{x}$  =21.4;  $\tilde{x}$  = 21;  $\check{x}$  = 18;  $\sigma$  = 6.1).

As for the gender, it showed again that the physical aggression of girls grows. The girls' physical aggression (53.7%) represented a significant statistical increase when compared with the boys' aggression (46.3%).

According to the research tool, verbal aggression manifests itself in forms of quarrels and verbal offences against opinions of others and against the conduct of others. When comparing the data per gender, a statistically significant increase was recorded in the verbal aggression of the girls. In connection with the previous findings, an increase may be observed in the physical (53.7%) and verbal (57.7%) aggression of the girls when compared with the boys (cf. physical aggression 46.3% and verbal aggression 42.3%).

Anger manifests itself in the form of irritation, annoyance, affective attacks and absence of control over emotions. The increased level of anger and annoyance showed in 48.3% of the boys and 51.7% of the girls.

In the girls, hostility showed in a half of the respondents (49.6%) as verbal and physical manifestations, i.e. slander, vilification, defamation, grudge and malice. In the boys, hostile behaviour showed in 50.4% of the respondents. Hostility may increase also by watching violent programmes in the media, playing aggressive computer and interactive games, as well as watching sports matches. Education psychology professionals confirm an increase in girls' aggression.

The relationship between the two independent samples was examined by the Wilcoxon Two-Sample Test. For the Wilcoxon Two-Sample Test, the value of the test criterion  $z$  and the value  $p$  representing the probability of errors were obtained.  $p = 0.05$  was chosen as the level of statistical significance. The purpose of the statistical tests was to verify the level of pupils' aggressive behaviour.

**Table 4.** Differences in Aggression by BPAQ

Group 1 vs. Group 2	Verbal Aggression	Physical Aggression	Hostility	Anger	Total
Z	6.04638	0.885	6.100	-4.01	0.146
P	p=0.000	p=0.376	p=0.000	p=0.00057	p=0.8598

In analysis of physical aggression, the test criterion value  $z = 0.885$  and the probability value  $p = 0.376$  were obtained. Since  $p = 0.376 > 0.05$ , the research did not confirm an increase in the level of physical aggression in pupils within two years. The probability values ( $p = 0.000$  for verbal aggression;  $p = 0.00057$  for anger; and  $p = 0.000$  for hostility) were lower than the chosen level of statistical significance  $p=0.05$ . The research done within two years on two independent research samples confirmed the indicator of the increased level of verbal aggression ( $p = 0.000 < 0.05$ ), anger ( $p = 0.00057 < 0.05$ ) and hostility ( $p = 0.000 < 0.05$ ) in the pupils of the 8<sup>th</sup> and 9<sup>th</sup> grades of elementary schools.

In summary, the same indicator of values obtained from both years of research was proved in individual components of aggression (verbal aggression, hostility, anger). The results obtained by means of the Wilcoxon Two-Sample Test indicated a statistical, identical indicator of verbal aggression, hostility, and anger in the pupils during the two years of research. The variables, age and gender, in relation to the factors of aggression partially reflect conclusions drawn by other authors.

### Cyber-Bullying Tolerance Level

The research conducted in the school year 2009/2010 pointed out, in addition to the verification of the pupils' aggression, to an increase in the cyber-bullying tolerance. Almost a half of the boys (46.2%) and a third of the girls (33.8%) showed an increased level of cyber-bullying tolerance. The obtained data of the cyber-bullying tolerance were matched and compared with the values of aggressive behaviour. Within the research, the statistical connection and its degree among the variables (total score of an individual's aggression and cyber-bullying tolerance level) was found. Substituting the obtained data to the relation:

$$R = 1 - \frac{6 \sum_{i=1}^n d_i^2}{n(n^2 - 1)}$$

the value of the rank correlation coefficient  $R \hat{=} 0.6255$  was obtained. Interpretation of the coefficient  $0.5 \leq |0.6255| < 0.7$  expressed a significant degree of linkage between the variables (aggressive behaviour and cyber-bullying tolerance). The value of the coefficient shows that cyber-bullying tolerance grows with the increase in the values of aggression.

### 3.1. Discussion and Recommendations

At present, there is evidence of various manifestations of verbal aggression, hostility and defiance among pupils. By comparing the standardized data with the data obtained in the Slovak population of students aged 14 and 16, an identical range of minimum and maximum values of aggression forms and ways was found. In boys, a lower score of physical aggression, on average, was proved and confirmed (gender differences in verbal and physical aggression had been recorded by more authors). In spite of the fact that educational practice draws attention to boys' physical aggression, the research pointed out to an increase in physical aggression in the girls when compared to the boys. One of the reasons for this indicator is

an undeveloped communication competence, which may lead to physical attacks. The increase in verbalized attacks in boys may be caused by recognition of the success of relational aggression. The relational aggression stands out in relation to both genders, as found by the research. The fact is a suggestion for further theoretical study, methodology and educational practice. In connection with the above premises, the following come to the fore:

- standardisation of the BPAQ questionnaire for the Slovak pupil population as a research tool aimed at measuring factors of aggression;
- development and standardisation of a research tool aimed at mapping cyber-bullying in children and adolescents in the conditions of the Slovak Republic.

## **Conclusion**

Aggressive acts may influence human psyche, self-confidence, the quality of intimate relations, etc. The purpose of the research was to find out and verify the level of aggressive behaviour in pupils in the west Slovakia region by the factors of aggression. The findings of growing aggression in children play a key role in the search for and elimination of causes and consequences. The present study is a starting point for mapping aggressive behaviour including cyber-aggression (cyber-bullying) in the conditions of the Slovak Republic on the basis of standardisation of the available research tools and/or development of new ones.

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**Didactics**



## **Trends in Foreign Language Didactics Research: a Thematic Analysis of PhD Dissertations from the Czech Republic and Abroad (2006–2012)**

### **Abstract**

The aim of this study is to present the results of analyses of PhD dissertations defended abroad and in the Czech Republic in the years 2006–2012 in the field of foreign language didactics. Building on a body of previous work, methodological background for a meta-analysis of the topics of PhD dissertations defended in selected countries abroad as well as for an analysis of PhD dissertations defended in the Czech Republic is presented. The results are then discussed and compared. We conclude that the range of topics addressed in the Czech dissertations does not significantly differ from the state of art abroad, although some areas, such as language learners, seem to be under-researched in the Czech Republic.

**Keywords:** *foreign language didactics, research, thematic analysis, PhD dissertations.*

### **Introduction**

The efforts to emancipate foreign language didactics (FLD) have been an ongoing and non-linear process launched in the Czech Republic in the 50s of the previous century. The most important milestone of the first generation of the emancipation endeavour is a seminal monograph by Malíř (1971); further on, publications by Beneš (1970) or by Hendrich (1988) documented the development of FLD in the Czech Republic. The latter, however, appeared in a period of relative silence coerced

by the broader political and social context. It is only in the last two decades that attempts to re-constitute FLD can be observed (cf. Píšová, 2011).

The conceptual and research re-constitution is a pre-requisite for the re-institutionalization of FLD in the sense of its incorporation into the family of full-fledged scientific disciplines. Such a status includes both external (or formal) aspects, and internal ones. Although the former cannot be neglected, we believe that the internal ones represent the key emancipation processes. Internal aspects include “an explicit definition of the subject and research methodology of a scientific discipline based on critical analysis of its current [...] state of the art” (Kotásek, 2011, p. 227).

In this article, we are drawing on our previous studies related to FLD research in the Czech Republic. An analysis of articles on education and FLD in five most important Czech educational journals (over the period 2000–2010) was made by Píšová, Janíková and Hanušová (2011). Apart from that, Píšová and Tůma (2012) analyzed 100 abstracts of the most cited articles in FLD from Web of Science published in the years 1990–2012. Their inductive analysis resulted in a thematic map, capturing five areas of central foci of the studies. The foci of German research in the field of FLD were outlined in Janíková (2012), and the results of a thematic and methodological analysis of studies in four international periodicals with the impact factor higher than 1 published in 2010–2011 were discussed by Vlčková (2011).

Furthermore, studies from abroad were taken into consideration. Pokrivčáková (2012, p. 10) offers a summary of annual reviews published in the journal *Language Teaching* over the period 1992–2009, based on which she conducted an analytical probe into FLD research by analyzing eight conference proceedings of a Slovak conference. In addition to these, reviews of doctoral research in selected countries were taken into account (cf., Appendix 1).

Although the above sources indicate that some reviews of FLD research are available, Pokrivčáková (2012, p. 11) notes that “monographs analyzing and evaluating the development of FLE [foreign language education] research are still absent”. In order to capture the structure of the research field in the Czech Republic, analysis of PhD dissertations may be helpful. Doctoral research is a specific area, as Mareš (2013) points out when reviewing studies related to doctoral students and graduates conducted abroad. He also reports on the situation of doctoral graduates in the field of education in the Czech Republic and concludes that although between 1999 and 2011 there were relatively many graduates, only a few started their career as researchers. He calls for more attention to PhD students’ education and their development after defending their PhD dissertations.

Despite the availability of the reviews of PhD dissertations in our field of interest defended in many countries abroad, we were unable to find a review of defended

PhD dissertations in the Czech Republic. Therefore, in this study we offer a comparative view of FLD doctoral research abroad and in the Czech Republic. Our aims are the following: (1) to analyze and aggregate the topics of PhD dissertations in FLD defended at universities abroad, (2) to quantitatively describe the state of the art of PhD dissertations in FLD defended at Czech universities, (3) to analyze the topics of PhD dissertations, (4) to compare the findings related to the Czech Republic with the state of the art abroad.

## **Research Methodology**

### **Research sample**

From the aims of our review it follows that the data came from two sources: dissertations defended abroad and in the Czech Republic. In both cases the dissertations defended over the period 2006–2012, i.e. a period of seven years, were included. The reasons for this choice were the following. First, this period was long enough to capture a variety of topics and as regards Czech dissertations, a period of seven years presented a reasonable sample. Second, the period allowed for including the most current theses<sup>1</sup>. Third, the majority of the theses defended in the Czech Republic in this period were accessible online (full texts or abstracts). Next, for the same period, reviews of defended PhD dissertations from other countries were available, which allowed for comparison. Finally, for FLD in the Czech Republic it is the period of increased emancipation efforts as documented by successful accreditation of two new FLD doctoral study programmes, which was a real breakthrough after decades of scientific hibernation.

As far as doctoral research conducted abroad is concerned, we searched for reviews of PhD dissertations on Web of Science. Our intention was to analyze the findings from different reviews in order to compare them with the state of the art in the Czech Republic. Having excluded irrelevant articles from other sub-databases, we arrived at five articles from the category *Education & Educational Research*. These were reviews of doctoral research in England, Germany, Poland, Spain and the United States (cf., Appendix 1).

As regards the review of PhD dissertations defended in the Czech Republic, we started by retrieving a list of accredited university doctoral programmes from the web of the Ministry of Education, Youth and Sports<sup>2</sup>. First, we selected doctoral

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<sup>1</sup> The data were collected in March 2013.

<sup>2</sup> <http://www.msmt.cz/file/25412>

study programmes and specializations called *Education*<sup>3</sup>, which are offered at three universities and five faculties: Charles University in Prague: Faculty of Arts, Faculty of Education; Masaryk University, Brno: Faculty of Arts, Faculty of Education; and Palacký University, Olomouc: Faculty of Education. All the dissertations defended at these faculties were included. Next, the Faculty of Arts, Charles University in Prague, also offers a specialization called *Foreign language teaching*<sup>4</sup> under the programme *Philology* – this specialization was also included. Finally, the Faculty of Education, Masaryk University, Brno, offers a specialization called *Foreign language didactics*<sup>5</sup>, which is accredited under the programme *Specialization in Education*<sup>6</sup>. However, this specialization was opened in 2010 and has not had PhD graduates yet. The lists of dissertations (titles, authors) from the above-mentioned programmes and specializations were retrieved from the official websites of the universities and faculties. Respective online repositories were then searched for more detailed information, i.e. abstracts and full texts.

## **Category system**

As far as the categories for classification are concerned, we built on our previous study (Píšová & Tůma, 2012), in which we conducted an inductive analysis through open coding on the abstracts of 100 most cited articles related to FLD according to Web of Science. A data-driven category system emerged, comprising five major categories, which we outline below (ibid., pp. 14–17).

1. **Learners:** motivation for foreign language learning, learners' identities in social contexts.
2. **Teachers:** teacher education, language teachers' professional competences and foreign language communicative competence, teachers' subjective conceptions of teaching, classroom communication.
3. **Foreign language acquisition and learning (FLAL):** theories of second language acquisition, foreign language learning strategies, age and foreign language learning, attention to form, L1 transfer, formulaic language, differences between the interaction of language learners and native speakers, etc.

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<sup>3</sup> Pedagogika

<sup>4</sup> Didaktika konkrétního jazyka

<sup>5</sup> Didaktika cizího jazyka

<sup>6</sup> Specializace v pedagogice



4. *Management of teaching / learning processes (MTLP)*: teaching strategies and techniques, methods and approaches, technologies and multimedia in language teaching, assessment.
5. *Key concepts*: mainly theoretical studies related to theoretical concepts in FLD, e.g. intercultural communicative competence, foreign language proficiency.

This category system was used for our analyses of PhD dissertations.

### Procedure

First, reviews of PhD dissertations from the five countries were analyzed and the topics aggregated. The reviews were coded into the five categories by two researchers separately, and consequently, consensus was sought.

Prior to embarking upon the analyses, however, two adjustments were made. First, in our original classification (Pířová & Tůma, 2012) curricular aspects, such as syllabi and objectives, were included under the category of *MTLP*. However, from the abstracts of the Czech dissertations dealing with this issue it was clear that several theses were oriented more theoretically or did not fit in the *MTLP* category. Therefore, the theses whose focus was on the content or aims were classified as those related to *Key concepts*. Second, dissertations related to teaching aids and textbooks were classified as those related to *MTLP*. Such works did not appear in the abstracts analyzed by Pířová and Tůma (2012).

Next, an analysis of Czech dissertations was made. After extracting the abstracts<sup>7</sup> of Czech dissertations, the analysis was conducted in two steps. Initially, the dissertations which were clearly not related to FLD were excluded. Then, the remaining dissertations were classified in the light of the category system introduced above in the same way as the topics of dissertations abroad.

### Research Results

In Appendix 1 the results of the thematic analysis of PhD dissertations defended abroad in selected countries can be found.

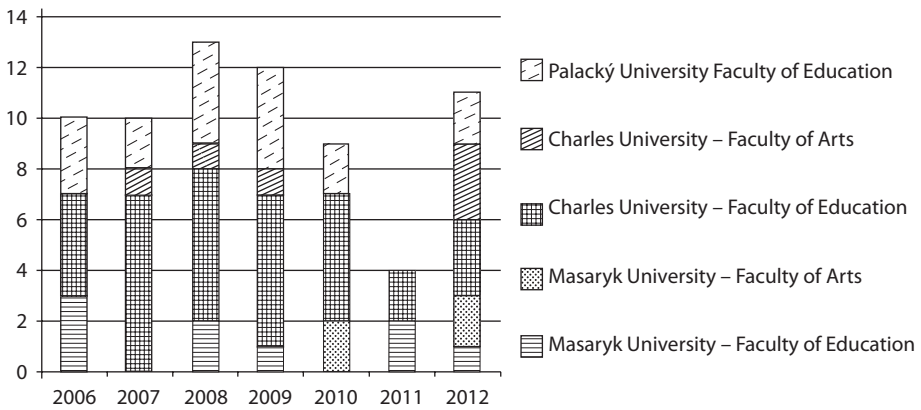
As far as Czech doctoral research is concerned, a database of 69 dissertations was analyzed. First, we describe the corpus of Czech dissertations. The numbers of

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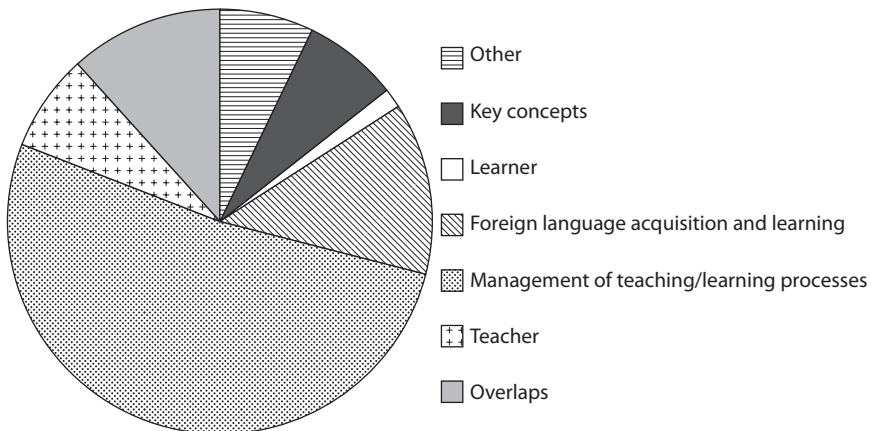
<sup>7</sup> Where an abstract or full text was not available, only the title of the dissertation was analyzed. This applies to dissertations defended in or before the year 2009 at the faculties of education at Charles University in Prague and Palacký University, Olomouc; and dissertations defended in or before the year 2008 at the Faculty of Arts, Charles University in Prague.

defended dissertations according to years can be seen in Figure 1. Most dissertations were defended in the years 2008 (13), 2009 (12) and 2012 (11). The majority of the dissertations (53) were written in Czech. Two dissertations were in English and two in Slovak. We were unable to retrieve this information for 12 dissertations. Figure 1 also shows the distribution of numbers of dissertations according to individual programmes offered at different faculties. Most dissertations (33) were defended at the Faculty of Education, Charles University in Prague.

**Figure 1.** Numbers of dissertations defended in the Czech Republic over the period 2006–2012



**Figure 2.** Thematic analysis of Czech PhD dissertations - results



As far as the results of thematic analysis of Czech dissertations are concerned, the distribution of topics can be found in Figure 2. The most dominant topic was *MTLP* (36 occurrences), followed by studies on *FLAL* (9). Five dissertations were related to *Teachers* and another five to *Key concepts*. Only one dissertation fell into the category of *Learner*. Other dissertations (5) were those which did not fit our category system. As regards the *Overlaps*, each of the dissertations in this category included *MTLP* and another category: *FLAL* (4 dissertations), *Key concepts* (3) or *Teacher* (1).

## **Discussion**

The discussion can be opened by reflecting on the results related to PhD dissertations defended abroad. First, it should be pointed out that the five reviews differ as regards the selection of dissertations. Some based the selection criteria on database search (Motha, 2009), others relied on the recommendations of other academics (Drożdżał-Szelest & Pawlak, 2012). Marsden and Graham (2009) briefly overview all dissertations (and analyze the selected ones in detail), whereas in all the other reviews most significant dissertations were preferred. Moreover, the reviews also differed in the emphasis and structure: some focused on rather more specific “fresh themes” (Motha, 2009), whereas others preferred more general areas (Behrent et al., 2011). Although the reviews presented diverse views on doctoral research in the countries, which limits the generalizability of the results<sup>8</sup>, it was possible to conduct a thematic analysis.

The analysis of the topics of PhD dissertations from abroad (Appendix 1) in the light of our category system shows that the topic of *Teacher* seems to be rather under-researched. However, most of the studies related to *MLTP* to some extent include the teacher element and had some implications for foreign language teacher education. This raises the question about the position of an essentially pedeutological issue within the framework of FLD. As regards *Learners*, the most common subtopic seems to be learner differences, as reflected in the reviews from Poland, Spain and England. *MLTP* was presented in all the reviews widely, covering various subtopics such as presentation and practice of grammar and vocabulary, developing skills, testing and dealing with feedback. Technology in language teaching and content and language integrated learning (CLIL) were also

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<sup>8</sup> Another constraint is that each review covered a slightly different time period –cf., Appendix 1.

apparent. As regards *Key concepts*, the comparative lack of studies may reflect more classroom-research orientation of the dissertations. Topics such as language policy and language planning along with more theoretical approaches to culture present the content of *Key concepts* in our study. As regards overlaps in the topics, the most apparent one is presented by the issue learner autonomy. Various links were sought between the *MLTP* (e.g. the use of portfolios) and individual learner qualities (e.g. motivation). Except for the USA, this topic was present in all the reviewed countries. Other overlaps were found between *FLAL* and *MLTP*.

Each of the reviews also addressed missing topics and problems of PhD research in the countries. As regards topics, some reviewers call for more research in the field of ICT in foreign language teaching (Behrent et al., 2011; Motha, 2009), others refer to age groups and point out that more attention should be paid to primary and secondary education, since most studies in their reviews were in tertiary settings (Marsden & Graham, 2009; Serrano & Miralpeix, 2013). Overall, the authors of the reviews suggest that more complex studies should be conducted, focusing on connections to SLA theories, relations to globalization and multilingualism, etc. Apart from that, methodological and theoretical issues are addressed (Marsden & Graham, 2009).

The distribution of topic, as outlined in Appendix 1, to some extent exemplifies the conception of FLD in the countries. For instance, the topics covered in the USA represent rather an applied-linguistic focus of the studies, which reflects a different paradigmatic orientation of the theoretical and empirical reflection of this aspect of educational reality. This fact may be linked to different traditions in the conceptualization of theory and research into foreign language learning / teaching, namely the Anglo-Saxon and the Central European ones (Gundem & Hopmann, 2002).

As far as doctoral research in the Czech Republic is concerned, the quantitative data reveal some interesting findings. Out of the total of 69 dissertations, two were written within the programme of Philology and 67 under Education. The latter can be compared with the statistics offered by Mareš (2013): for the period 1999–2011 there were, in total, 549 PhD graduates in the field of Education, i.e. on average 42 graduates per year. In our sample we had the total of 67 Education graduates (2006–2012), i.e. slightly fewer than ten graduates per year. By comparing the two figures it seems that a considerable proportion of dissertations defended in Education was occupied by dissertations in FLD. More generally, from the statistics it follows that the faculties of education concentrated more on FLD than faculties of arts (cf. Mareš 2013, p. 11).

The distribution of dissertations within the years (Figure 1) shows a relatively stable number of defended dissertations every year (9–13) except 2011. Mareš

(2013, pp. 11–13) observed a similar tendency in the doctoral programmes in *Education* generally, which he attributed to increasing demands from the Accreditation Commission since 2008 in order to improve the quality of dissertations and also to the emancipation of subject matter didactics. The drop in 2011 in our data can be explained as a co-incidence of comparatively lower numbers of graduates at certain faculties (and relatively higher numbers of defences along with the first two graduates in a FLD specialization under Philology in 2012).

As far as the topics of Czech PhD dissertations are concerned, we adopt a comparative perspective. Similarly to the situation abroad (as reflected in the reviews), most attention was paid to *MTLP* (e.g. teaching reading, ICT, “alternatives”: drama, Waldorf education; testing and assessment, classroom communication, textbooks, etc.). Overlaps were found mainly between *MTLP* and *FLAL*. Next, *Teacher*-related dissertations were rather infrequent. Contrary to the situation abroad, Czech doctoral research paid little attention to *Learners* (the only dissertation dealt with university graduates’ language qualifications) and to *FLAL* (Czech dissertations were related mainly to the role of language transfer). Another difference was that only one dissertation dealt with learner autonomy.

The results of this thematic analysis of Czech PhD dissertations do not significantly differ from the findings provided by our previous thematic analyses (Píšová, Janíková & Hanušová, 2011, Píšová & Tůma, 2012). In all of them the richest field of researchers’ interest is the category labeled *MTLP*; it is, at the same time, the category which most frequently overlaps. Further on, the category of *Learners* seemed slightly under-researched, and more attention especially to primary and lower secondary age group seemed desirable.

## **Conclusions**

Our thematic analysis of PhD dissertations from the Czech Republic and abroad (2006–2012) and the confrontation of its results with our previous studies dealing with research foci in FLD aimed to help systemize the vast and diverse research field. The diversity is linked to the characteristics of the discipline: the reflection of the empirical reality of teaching and learning a variety of foreign languages is covered “under one roof” of FLD. Therefore, various culturally determined approaches and conceptualizations have evolved over time. In addition to that, paradigmatic plurality, typical of social sciences and humanities, and the tension between the referential scientific disciplines play an important role (cf. Gundem & Hopmann, 2002). Our analysis, e.g., proves that in the English speaking countries

more attention is paid to foreign/ second language acquisition, which proves the strength of applied linguistics rather than the didactic tradition typical of Central European tradition.

Generally speaking, however, the results indicate that FLD doctoral research abroad in a relatively balanced way covers the broad spectrum of thematic areas of FLD. The choice of research topics reflects social demands – most current “hot issues” (e.g. multilingualism, CLIL, autonomy) are addressed in a sufficient way. In addition to that, missing or under-researched issues were identified and pinpointed as an impulse for future research.

As regards the comparative perspective, the range of topics addressed in the Czech dissertations does not differ from the state of art abroad in a significant way, though lack of some specific accents was identified (e.g. attention paid to foreign language learners and their autonomy). However, our thematic analysis of PhD dissertation shows that we have a new generation of promising researchers in FLD in the Czech Republic, which is a sine qua non for the development of the discipline after long years of relative silence caused by the political context.

Our study presented a thematic analysis of doctoral dissertations. In conclusion, it should be pointed out that the majority of dissertations were empirical studies. Therefore, two recommendations for further analyses should be formulated. Firstly, more attention should be paid to research methodology deployed in the dissertations and in FLD in general. Secondly, it is crucial for the development of the discipline to pursue also theoretical research leading to the development of meta-didactics representing the “conscience” of the discipline (Choděra, 2006, pp. 36–38).

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## Appendix 1

### The results of thematic analysis of PhD dissertations defended abroad (selected countries)

Country (authors)	Corpus	Teacher	Learner	SLA and FL learning	Management of teaching/ learning processes	Key concepts	Overlaps
The USA (Motha, 2009)	15 dissertations (2006–2007)	Non-native English-speaking teachers Applied corpus analysis	Language socialization L2 learners' literacy in high schools	Language learning opportunities Corpora and on-line reference tools in language learning Phonological acquisition Conversation analysis in pre-school years Second-/Foreign language pragmatics	Corrective feedback within computer-mediated communication Teacher feedback Task complexity	Language policy	Language ideologies and language learning Private speech
Germany (Behrent, Doff, Marx, Zielger 2011)	38 dissertations (2006–2009)	–	–	–	Foreign language teaching in primary school	–	CLIL and multilingual pedagogy Learner autonomy Multimedia and language learning
Poland (Drożdżal-Szelest, Pawlak, 2012)	25 dissertations (2006–2010)	–	–	–	Language skills and sub-systems Assessment Miscellaneous <sup>1</sup>	Culture: Intercultural competence, cross-cultural differences	Learner autonomy Individual learner differences <sup>2</sup>
Spain (Serrano & Miralpeix, 2013)	16 dissertations (2008–2010)	–	Motivation as an individual learner difference	Interlanguage pragmatics Language learning by immigrant populations	CLIL Classroom language teaching	–	The development of speaking abilities and the acquisition of foreign language sounds Learner autonomy Study abroad



Country (authors)	Corpus	Teacher	Learner	SLA and FL learning	Management of teaching/ learning processes	Key concepts	Overlaps
England (Marsden & Graham, 2009)	47 dissertations (2006)	Language teacher education and cognition	Specific language impairment and English as an additional language Motivation as an individual learner difference <sup>3</sup>	L2 acquisition from various linguistic perspectives Sociolinguistic studies in immigrant, migrant or minority communities (ethnographic research)	Scaffolding during project work Teachers' motivational techniques for L2 teaching Vocabulary teaching practices Cultural background and use of ICT in L2 classrooms Using sign language to hearing children Textbook analysis Perceptions of a language course English for Specific Purposes programme English for Academic Purposes programme Error correction techniques Teaching idioms Computer-assisted language learning	Language planning	Learner autonomy Developing learner strategies

<sup>1</sup> This category included: teaching English to young learners, development of discourse competence, classroom interaction.

<sup>2</sup> These included learning strategies (i.e. *Foreign language acquisition and learning*) and the influence of individual differences on attainment.

<sup>3</sup> These included the relationship between attitudes, learning styles and experiences of language learning, and attitudes to project-based learning.

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## **The Impact of Implementation of Simple Experiments on the Pupils' Positive Attitude in Learning Science Contents in Primary School**

### **Abstract**

This paper presents research that has been carried out to analyze a relation between implementation of simple experiments in teaching sciences, and pupils' positive attitude towards learning physics. Investigation was conducted on a random sample of 495 sixth – and seventh-grade pupils from primary schools in Novi Sad. The obtained results are statistically treated. Analysis of results shows that the use of simple experiments for a particular case is related to pupils' attitude toward learning physics. Also, it is shown that approximately twice higher percentage of pupils that were taught with the use of hands-on experiments like to learn science than pupils who were taught with the use of demonstration experiments or without experiments. They do not learn by heart, they understand science and it helps them to develop a scientific world view that makes it easier for them to find their way in today's world.

**Keywords:** *simple experiments, hands-on experiments, demonstration experiments, pupils' attitude, physics teaching.*

### **Introduction**

Results of testing pupils' knowledge in the Republic of Serbia, which reflect the degree of achievement of goals and fulfillment of the tasks of teaching natural science (physics) show that pupils that finish primary school and compulsory education do not have sufficient knowledge. Applicable knowledge test results

obtained by the PISA test in 2009, which included fifteen-year-old pupils (eighth grade), indicate a high degree of inefficiency of learning physics. Contents of science are treated in primary schools within the subject: “The World around Us” (which is derived from two hours per week in the first and the second grades) and “Nature and Society” (with two hours per week in the third and the fourth grades). Implementation of an elective subject “La main à la pâte” (“Hands-on – Discovering World”) would significantly change the situation in terms of time devoted to the study of natural sciences (especially physics), but even though this subject was introduced as an elective (from the first to the fourth grades), it is not implemented sufficiently in schools. Also, today’s lifestyle, technical and technological development and easy access to information create a necessity to overcome the frontal lecturing approach in physics teaching. The knowledge acquired by the application of simple experiments is more permanent thanks to a higher level of understanding of the material that is more easily applied in practice. The introduction of simple experiments is advisable to increase the efficiency of learning physics (Bosnjak & Obadovic, 2009; Obadovic & Nagl, 2008, 2010).

Successful teaching of natural sciences includes training for lifelong learning. George Sharpack says that French scientists and educators have tried to find a new way of teaching the lowest age pupils, comparable to scientific research. He points out that scientific reasoning is considered as a powerful tool in increasing the capacity of thinking, finding evidence, and decision making. At the same time, in the U.S. and in many countries a hands-on program has been introduced, and parallel to it an inquiry-based method is being applied. Sharpack states that it is a high quality education which should, besides the acquisition of knowledge, enable the progress of writing, language and reasoning skills of pupils (Šarpak, 2001).

The problem of how to best organize pupil education has always attracted the attention of educators. John Dewey, with his motto of “learning by doing,” showed the importance of learning through experience, learning on the principle of “Do It Yourself” (“Hands-on”) and learning organized by pupils themselves (Dewey, 1902; 1916; Grant, 2002; Merkhham et al., 2003). In order to make teaching more efficient, many researchers have studied teaching methodology, didactics, and the problem of active and creative teaching in the educational process in our schools. They point out that the pupils whose teachers have been introducing, together with the traditional approach, some of the contemporary teaching methods, obtain better results – they acquire more permanent knowledge, the pupils assert themselves as active subjects of the teaching process, and the teachers are less teachers and more planners, organizers, and they guide the teaching process (Hajdukovic et al., 2007;

Gordon, 2006; Ivić et al., 2001; Lalović, 2009). Pupil satisfaction in such work is evident. In the recent world literature, the importance of applying very different contemporary science teaching methods (especially a scientific method as a teaching method and inquiry based learning) are especially emphasized and a large number of these methods are based on the implementation of simple experiments (Zimmerman, 2007; Hofstein & Mamlok-Naaman, 2007, Stinner, 2003, Tang et al., 2009).

In their papers, world methodologists show how to implement simple experiments, the purpose of doing experiments and requirements for their implementation. The pedagogical significance of the experiment is that pupils have certain benefits from them, primarily gaining relevant experience and applying it in different situations in their natural and social environment. The purpose of demonstration experiments can be: increased motivation, more evident learning of science materials, more concrete applications of theoretical knowledge, skills, and gaining skills on real examples, increased interest in studying material, causing the observed physical phenomena, an illustration of the principles and laws, developing critical thinking, grading students. In the cases where simple experiments are not performed as a demonstration experiment, but their use introduces a scientific method, inquiry based learning or other teaching method, they can have the same purpose, and further enable pupils to do independent research and come to their own knowledge – construct knowledge system by themselves.

The scientific method significantly makes it easier to understand the essence of issues that are studied in physics and provides the durability of the acquired school knowledge. It also contributes to achieving the didactic principles in physics: the principle of scientific value and systematization, evidence, links theory and practice, activity, durability of acquired knowledge, skills and habits, the individualization of teaching, adaptation of teaching. The scientific method consists of a series of logical procedures. Elements of scientific methods that should be implemented in the classroom are: asking questions – problem definition, formulation of hypotheses, experiment, analysis, conclusion and presentation of results (poster). Pupils should be given specific instructions to be followed in the realization of themes using the scientific method before processing themes on the procedure of scientific method (Obadovic et al., 2007; Nagl et al., 2012). Through hands-on experiments realized with the use of scientific methods, pupils become accustomed to independent research from the first grade of compulsory education, which facilitates the adoption of elementary knowledge of physics higher grades.

## **Methodology**

Educational reform in Serbia comprises almost all segments of education, starting from the lowest grades of elementary school up to the college education system. This process initiated a national program for the development and transfer of contemporary teaching methods which enable pupils to explore activities and the science subjects in the simplest way. This study was performed with an aim to investigate how the implementation of contemporary teaching methods in lower grades (1<sup>st</sup> to 4<sup>th</sup>) reflects in pupils' positive attitudes toward learning physics in higher grades (6<sup>th</sup> to 8<sup>th</sup>) of primary school. The fifth grade is the lowest one of higher grades in Serbian primary schools. Pupils in higher grades have a different teacher for each subject planned in the curriculum and in this grade the contents of natural sciences are planned only in two subjects: "Biology" and "Geography". Physics contents are not taught in the 5<sup>th</sup> grade. Because of that, fifth grade pupils were not included in this survey.

The research purpose was to investigate the impact of the implementation of simple experiments with the aim of the realization of the scientific methods in the teaching process at all levels of elementary education on the pupils' positive attitudes to the learning of physics content. Increasing the efficiency of learning physics content requires the application of various methods and work forms, in order to increase the quality and quantum of knowledge. What is significant is the empirical confirmation that there is a difference in the pupils' attitudes, depending on the way experiments are performed and whether the scientific method based on simple experiments is applied.

The research aim was to determine whether the application of scientific method as a teaching method in physics has an advantage compared to traditional teaching, to examine pupils' attitudes in relation to the study of physics contents in science teaching.

The task of the research was to determine whether or not there is a difference in pupils' attitudes in relation to the study of the physics contents if simple experiments and/or scientific methods are implemented in practice from the first grade of compulsory education.

It is assumed that pupils' positive attitudes toward physics are associated with the application of simple experiments and/or teaching methods applied in science teaching. That was the hypothesis of this research.

The study was conducted on a random research sample of 495 pupils of the sixth and seventh grades in elementary schools in Novi Sad.

The study was carried out as a survey. A questionnaire contained questions about simple experiments that the pupils carried out from the 1<sup>st</sup> to 4<sup>th</sup> grades, the pupils' attitudes towards learning physics. Statistical treatment of the obtained results made it possible to analyse and test the initial hypotheses.

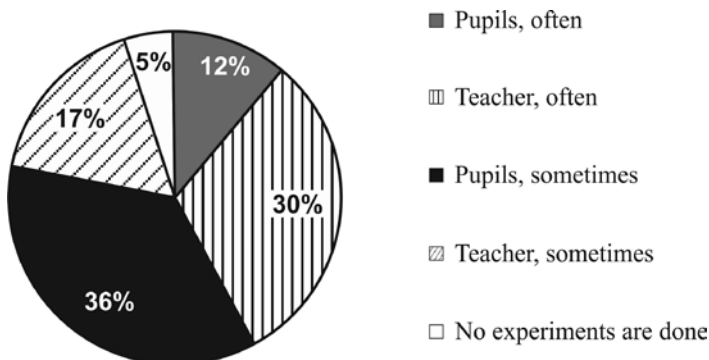
## Results and discussion

The analysis of the results shows a significant difference in the pupils' attitude towards the learning process when they perform simple experiments on the principles of scientific methods and when teaching is carried out traditionally (with or without the use of simple experiments performed by the teacher in order to demonstrate phenomena).

A positive correlation between the pupils' responses to the question of whether they like learning physics and teaching by implementing the scientific method in class is noticeable at the 95.0% confidence level. There was also a positive correlation between the pupils' positive attitudes towards physics and application of scientific methods, the same level of confidence (95.0%).

Only 5% of the surveyed pupils said that they did not do experiments, but that was because only the teachers who were interested in the implementation of contemporary teaching methods and who were trying to implement the appropriate methods in the teaching process wanted to be involved in the study. When the experiments are performed in the course, the most common is the case that pupils independently perform experiments. Figure 1 shows how often and who does experiments in the science teaching process.

Figure 1. Frequency of certain methods of performing experiments.



The pupils that have performed experiments, starting from the first grade, remember those experiments, as can be inferred from the responses to the questionnaire question concerning the material that was used when performing experiments. On the basis of the fact that the pupils remember different materials (coloured paper, water, salt, egg, lemon, balloons, batteries, light bulbs, magnets, etc.), it can be concluded that the class teachers who have implemented simple experiments in the teaching process worked on their implementation in different areas (motion, air, water, pressure, buoyancy, electricity, magnetism, etc.).

73% of the pupils in whose classes simple experiments have been done (by the pupils or by the teacher as demonstration experiments) think that the experiments help them to understand and learn easier physics contents (Figure 2).

**Figure 2.** Pupils' answers to the question whether experiments help them to understand physics contents

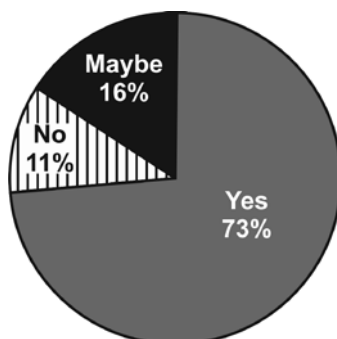


Figure 3 shows the pupils' attitudes towards learning physics depending on the method of conducting experiments used for treatment theme and its frequency (shown on the y-axis) and on the x-axis there is the percentage of the pupils with positive, negative or neutral attitudes. The obtained results indicate the necessity of applying different methods in physics, because more pupils declare that they like learning physics if they sometimes perform simple experiments (35.18%) compared to that pupils often perform independent experiments (32.16%). Depending on how often and who does simple experiments, the highest percentage of the pupils declare a negative attitude towards learning physics when experiments are not performed in the teaching process (63.16%), then if the teacher sometimes, or often performs experiments. The pupils express their negative attitude at least when they perform experiments independently.

**Figure 3.** Pupils' attitudes (positive, negative and neutral) in respect to how often and who does simple experiments

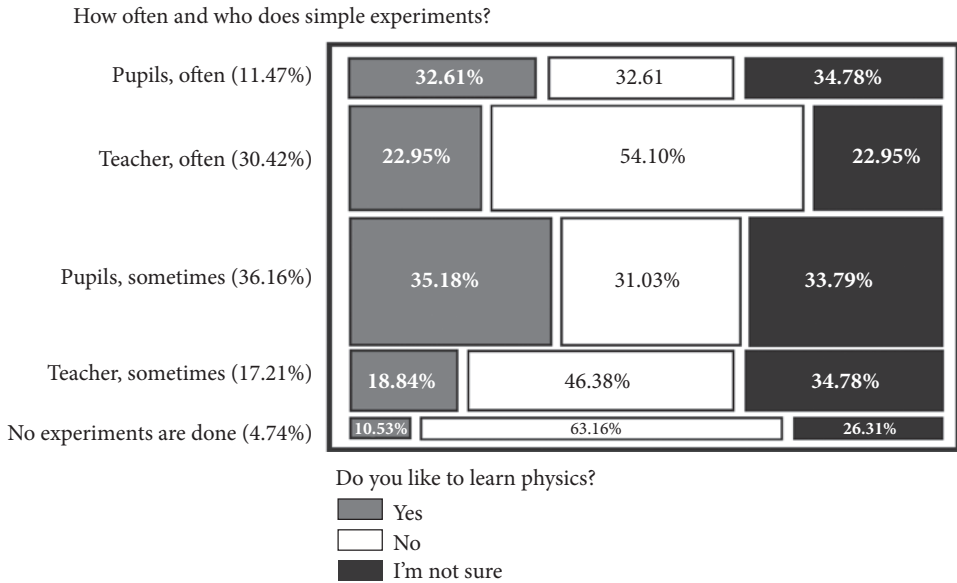


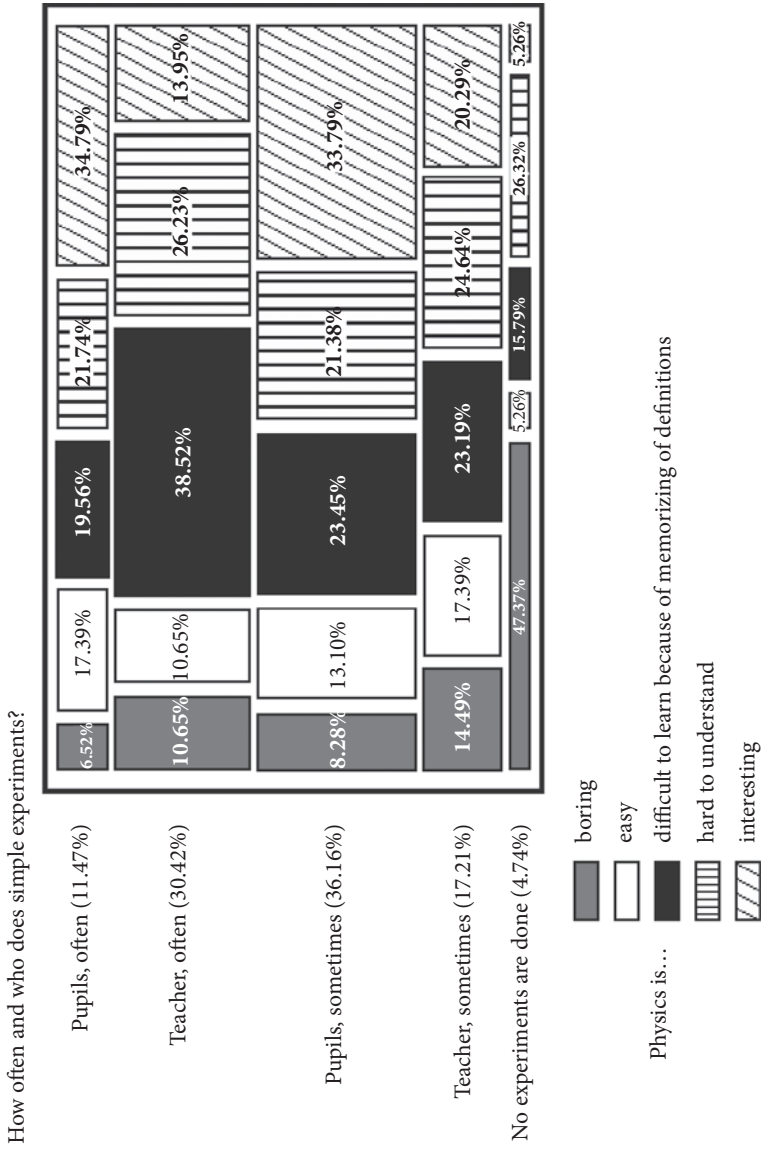
Figure 4 presents a detailed analysis of the pupils' attitudes towards the study of physics in relation to the way experiments are conducted. It is observed that the method of conducting experiments (independently of the pupils' work or the teacher demonstration of a phenomenon) to a small extent affects the pupils' opinions that physics is "easy" or "difficult." However, the method of conducting experiments reflects a significant impact on whether physics is interesting to pupils.

A greater number of the pupils who often carry out experiments independently (34.79%) and the pupils who sometimes carry out experiments independently (33.79%) say that physics is interesting in comparison to the pupils that only observe demonstrations of phenomena while the teacher conducts demonstration of experiments (sometimes or frequently, 20.29 % and 13.95% respectively). When experiments are not performed at all, physics is interesting to a very small number of pupils (5.26%), while a large number of pupils (47.37%) believe that physics is boring.

Based on the analysis of the results, it can be concluded that the pupils who independently carry out hands-on experiments following the principles underlying

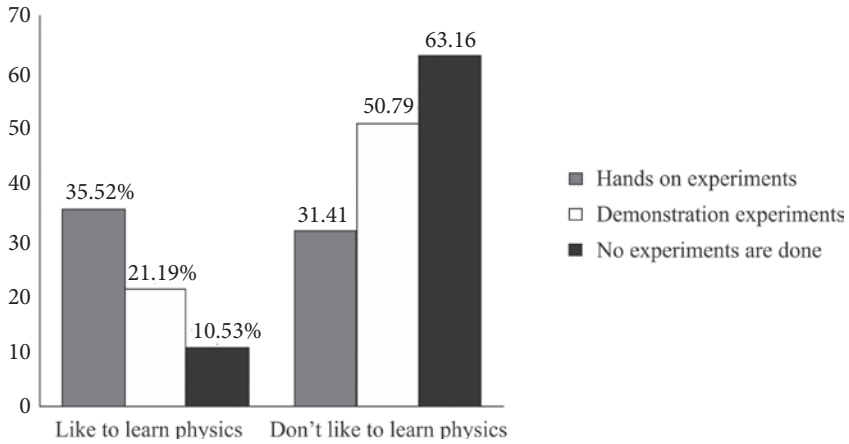


**Figure 4.** Percentage of pupils' opinions about learning physics in respect to how often and who does simple experiments

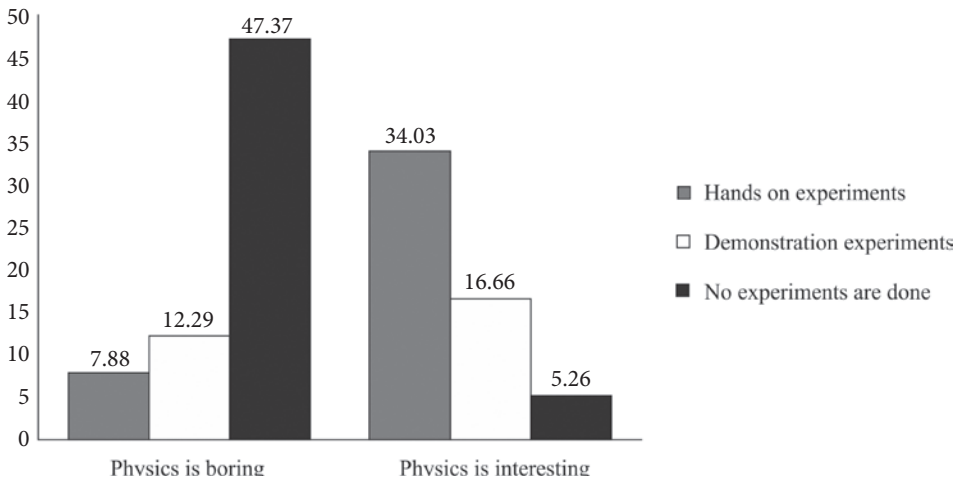


the scientific methods have a positive attitude towards physics. For those pupils it is easier to acquire the knowledge of sciences. They like learning physics (35.52% of the total number of pupils that do hands-on experiments, Figure 5) and to them the teaching contents are interesting (34.03% of the total number of pupils that do hands-on experiments, Figure 6), unlike the pupils whose teachers carry out

**Figure 5.** Percentage of pupils' opinions about learning physics in respect to how experiments are done



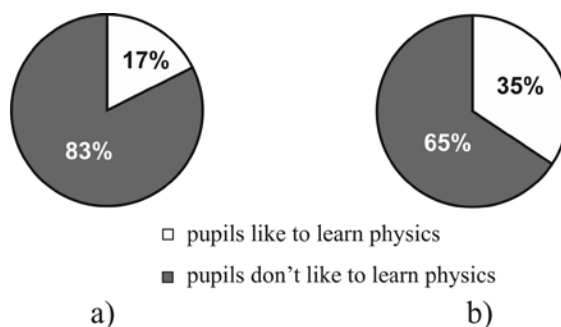
**Figure 6.** Percentage of pupils' opinion about physics contents in respect to how experiments are done



demonstration experiments (21.19% and 16.66% of the total number of pupils taught with the use of demonstration experiments, respectively). About 30% of the pupils in all three cases, when they do hands-on experiments, when their teacher does demonstration experiments or when no experiments are done could not decide if they liked learning physics and a different percentage of the students did not think that physics was boring or interesting.

The obtained results show that significantly more pupils like learning physics and are of the opinion that science is interesting if they independently perform experiments, in comparison to the pupils whose teacher demonstrates phenomena with the use of simple experiments as demonstration experiments (35% and 17%, respectively, Figure 7).

**Figure 7.** Student attitudes toward the study of physics content:  
a) experiments are not performed, or teacher demonstrates phenomena;  
b) Students do experiments by themselves



Based on the results analysis, it can be concluded that the pupils who independently carry out experiments following the principles underlying scientific methods have a positive attitude towards physics. For those pupils it is easier to acquire knowledge and the teaching contents are interesting.

## **Conclusion**

Based on the results of testing 495 pupils of the sixth and seventh grades of elementary schools in Novi Sad, it can be concluded that the introduction of simple experiments to the actual school practice from the first grade of compulsory education encourages pupils to develop positive attitudes to the contents of the study of natural science – physics in higher grades. This study was undertaken to examine

how the introduction of simple experiments to the actual teaching practice impact on pupils' attitudes to the learning of physics contents. In order to completely achieve the objectives and tasks in physics education, as well as in teaching other natural sciences, it is necessary to introduce experiments to the teaching process in lower grades of compulsory education. When simple experiments are used, the teacher should make additional effort in order to choose and prepare appropriate experiments. The problem that can occur when the teacher does demonstration experiments is that pupils do not pay full attention and are not active in the learning process. Because "hands-on" experiments have a greater effect on pupils' motivation, demonstration experiments should be used instead of them only if that is a better way to show phenomena, if there is not enough time for pupils to carry out experiments, if the procedure of an experiment is not safe enough. When hands-on experiments are introduced at the earliest age, following precisely defined instructions in accordance with pupils' abilities at that age, pupils learn phenomena that they induce by themselves. They develop the skills of perception and recognition of cause and effect relationships and recording experiment results.

Learning through independent research by pupils who follow the steps of the scientific methods has resulted in the acquisition of applicable knowledge. Bearing in mind differences in pupils' interests, which are not caused by the use of different teaching methods of great importance in achieving a positive attitude and satisfaction with learning, is a way of teaching. Therefore, it is important to highlight the importance of simple experiments in teaching physics in primary education. Analysis of the research results presented in this paper shows a significant difference in the pupils' attitude towards the learning process when they perform simple experiments on the principles of hands-on experiments and when simple experiments are carried out by the teacher as demonstration experiments.

Significantly more pupils like learning physics and are of the opinion that science is interesting if they independently perform experiments, in comparison to the pupils whose teacher demonstrates phenomena with the use of simple experiments as demonstration experiments. The pupils who independently carry out hands-on experiments have a positive attitude towards physics. They like learning physics (35.52% of the total number of pupils that do hands-on experiments) and to them teaching contents are interesting (34.03% of the total number of pupils that do hands-on experiments), unlike the pupils whose teachers carry out demonstration experiments (21.19% and 16.66% of the total number of pupils taught with the use of demonstration experiments, respectively). It can be concluded that the method of implementing experiments is of great importance because it is shown that simple experiments are more effective when carried out by pupils themselves because it

makes pupils more motivated. Also, it must be pointed out that it is not good to use this method too much because it can have reverse effects. In order to obtain the best results, different teaching methods should be combined. Simple experiments in addition to class lectures are also suitable for a variety of extracurricular activities, workshops, implementation of student mini-projects, or nature exploration.

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## **Educational Uses of Mobile Phones by University Students in Spain**

### **Abstract**

This article describes some of the results obtained from the MICINN EDU 2010–17420 research project. One aspect focuses on the academic use of mobile telephones by Spanish students in 2012. The data collection techniques used for the study were questionnaires, discussion groups and “life histories”. The sample comprised students from five Spanish universities (342 participants). Analysis of the results highlighted the different academic uses of smartphones compared to non-smartphones.

*Keywords: telematic obesity, nomophobia, ubiquitousness, non-smartphones, smartphone*

### **1. Introduction**

Since 2010, the Spanish Ministry of Science and Innovation has been trying to find out what use is being made of information and communication technology (ICT) in Spain. The UNED Consolidated Research Group (RADTE) has been carrying out research into this issue since 2004 through R&D projects SEJ 204–06803 and MICINN EDU 2010–17420. The interests of both organisations converged in a study undertaken by RADTE in 2013 at the universities of Oviedo, Vigo, Granada, Universidad Nacional de Educación a Distancia (UNED) and Complutense de Madrid (Spain). The topic of our study seeks to respond to ministerial concerns. Research activity has focused on the ubiquitous learning undertaken by higher education students in Spain via a number of mobile devices.

The academic world takes the view that there is a direct link between the notion of ubiquitous learning and the ability of mobile devices to supply highly interconnected educational environments. Some research studies (Meawad & Stubbs, 2008; Marin & Mohan, 2009; Kukulska-hulme, 2009; Liu & Hwang, 2009; Hwang, Kuo, Yin & Chuang, 2010; Liaw, Hatala & Huang, 2010) indicate that learning anywhere anytime is equivalent to some form of *mobile learning*. *Ubiquitous learning* (u-learning) has led to a new paradigm shift towards collaborative, connective and heterarchical learning. The RADTE Research Group supports these conclusions, as did Sakamura & Koshiznka (2005). These researchers found that ubiquitous learning seemed to be a new educational paradigm made possible with the use of new digital media.

To ascertain the level of ubiquitous learning of higher education students in Spanish universities, a representative sample from this group were asked questions about the academic use they make of their mobile devices. A sample of three hundred and forty-two (342) higher education students enrolled on humanities and social sciences courses was selected from the five Spanish state universities studied. Students in the sample completed a questionnaire, took part in a discussion group and gave their own personal account. The topics covered by the data collection tools centred on the academic use that the students made of each of the mobile devices that could provide ubiquitous learning. Analysis of the data collected led to quantitative and qualitative conclusions.

This article describes the academic use of mobile telephones by the study sample. Mobile phones might be regarded as being unsuitable hardware for use in ubiquitous learning. The results obtained show that they are indeed suitable. It will also make a comparison between the type of use of the non-smartphone and the smartphone.

A smartphone is a mobile telephone equipped with a series of advanced data handling and storage capabilities. It has integrated personal information management software enabling specific software to be downloaded from internet sites. In short, a smartphone can be regarded as a new type of hardware that is similar to a laptop computer incorporated into a mobile telephone. This device is the latest manifestation of the idea of wireless communication formulated by Marconi in 1884 with the invention of the radio. Nowadays, wireless communication that first appeared in the radio is used for all mobile and landline telephone hardware. The range of uses of mobile phones has broadened. They are not used solely for communicating verbally with another person. Neither are they used for sending voicemail or text messages. The mobile phone has evolved. Current mobile phone technology has resulted in a new concept of multidirectional communication via intelligent phones, or smartphones.



Table 1 shows examples of this multidirectional communication in some of the smartphone functions used by university students in Spain.

**Table 1.** Smartphone functions used by university students

Functions	Tasks
Multimedia	Playing compressed music, playing compressed videos, using stills and video camera, accessing radio and TV
Gaming	Accessing games controlled by touchscreen or keyboard
Electronic diary	Managing notes, using wake-up alarm, tasks, telephone directory, calendar, etc.
Office automation	Word processing, spread sheets, PDF file reader
Communication	Internet access, Wi-Fi data transmission, SMS and MMS, multimedia messaging systems
Connection interface	Tethering or using the mobile phone as modem to access the Internet on a conventional computer
PTT function	Enables person-person or person-group communication
GPS function	Device tracking and sending specific geographic coordinates

Excessive or uncontrolled mobile phone use can give rise to certain disorders in users with a particular profile (*telematic obesity*). In addition to addictions, it can also be the cause of mental illness, which may be manifested in the symptoms of *nomophobia*. The term *telematic obesity* is the name given to the obsessive compulsive disorder involving the irrational acquisition of every item of hardware and software appearing on the market. It does not apply only to mobile phones. *Nomophobia* is described in the latest clinical psychology as the irrational fear of being out of mobile phone contact. This psychological imbalance suffered by mobile phone addicts has symptoms similar to any other psychosocial disorder: anxiety, mood swings, irritability and lack of concentration in the person affected.

The study concentrated on both distorting factors. To give the study more general validity, the consistency of the sample was strengthened from the time of its selection. The 0.02% of Spanish students who admitted to suffering from nomophobia or telematic obesity were excluded from the study. The aseptic constitution of the sample allows for the extrapolation of the results obtained to the whole Spanish university student population in the 2012/2013 academic year.

### 1.1. Ubiquitous learning

University has traditionally been thought of as a learning environment. The main feature of learning has always been transfer activity. Knowledge transfer

manifested itself in the mobility of the object containing the information. Historically, the mobility of learning has successively taken the form of the transfer of written works, printed books and computing devices developed on static media. Now, these circumstances have changed. A new form of learning has emerged: mobile learning. Mobile learning is a method strategy that does away with the fixed nature of learning material while safeguarding permanent access to instruction. Education has made the most of the constant interaction that this teaching model sets up between all levels of the education community (Vázquez Cano, Sevillano García, Méndez Pérez, 2011: 183). Mobile learning has revolutionised people's lives and their academic excellence (Lozano, Marcos & Támez, 2009).

Mobile learning enables current education to be ubiquitously available because of the proliferation of services it offers based on audio and video. Mobile learning and the principle of ubiquity (Weiser, 1993) applied to teaching are producing evolution in the basic features of conventional e-learning. Conventional e-learning along with the extraordinary development of digital devices means that ubiquitous learning is not merely a practical possibility. Ubiquitous learning can now be regarded as a social imperative (Cope & Kalantzis, 2009).

The ubiquitous tool is conceived as a complementary tool to classroom education. This tool allows teachers to offer educational support and suggest educational activities to their students in different curricular timetables. Ubiquitous learning produces an educational environment that can adapt to dramatic technological change. This learning model demands that everyone involved, managers, teachers and students alike, play an active part in virtual educational communities. This is where interaction with the sociocultural background takes place.

There are very few ubiquitous learning initiatives. Villa, Tapia & López (2010) argue that ubiquitous learning is beneficial for students. This type of learning enables individually tailored teaching to be delivered. It is an "anywhere anytime" method of teaching, both in spatial and temporal terms, if active mobile devices with Internet access are available. In Spanish universities, the change in teaching behaviour between digital natives and e-users is tangible. Today's university students take an approach to education that avoids the search for specific data (McLester, 2007). They base their learning on exploring, looking up and summarising knowledge. They avoid absorbing content supplied by a single validated source of knowledge, like that delivered by a book or by a teacher giving lectures (Dede, 2005). The change in their attitudes to teaching, together with the proliferation of mobile audio and video services makes ubiquitous learning easy for today's university students. Mobile phones are the most frequently used devices for ubiquitous learning.

## **2. Research Methodology**

The study was designed as mixed research, using techniques with varying levels of structure, ranging from quantitative to qualitative. The main data collection techniques used were surveys to obtain quantitative data on the use of mobile devices by higher education students. The sample consisted of a broad range of ethnic groups to understand the sociocultural dynamics underpinning the use of mobile devices in the study population. The ethnographic method was used to collect “life histories”. In-depth interviews were carried out to understand subjects’ own perspectives and experiences and to obtain direct information about the object of the study.

The study population consisted of higher education students who were mobile device users. The sample selection involved a segmentation process that ensured Spanish higher education institutions were properly represented. The sample scope was that of students at the universities of Vigo, Oviedo, Granada, Universidad Nacional de Educación a Distancia (UNED) and Complutense de Madrid not affected by telematic obesity or nomophobia.

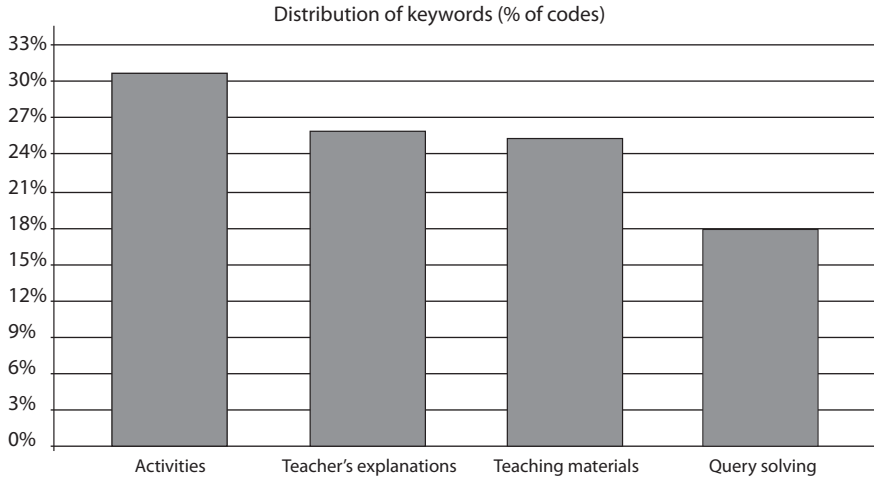
### **2.1. Procedure**

Analysis of the protocols showed the actual situation and a series of concepts that exceeded and transcended the generic idea of the mobile phone. Impacts were grouped by type or variant. This step provided a segmented view suggesting that a category prototype should be drawn up. The category prototype enabled subcategories within the learning macro-concept to be identified, which explained and clarified the main category. These subcategories were referred to as: activities carried out to acquire knowledge. Benefits encountered in the use of mobile phones. Problems encountered in the use of mobile phones. Skills gained from using mobile telephones for educational purposes. In terms of methodology, key, identifying and situational terms were sought that could encapsulate the overall existential context obtained. It was decided to use random choice of protocols by applying the  $n-1$  formula ( $n$  was given the initial value of 20). The protocols selected were 1, 19, 38, 57, 76, 95, 114, 133, 152, 171, 190, 209, 228, 247, 266, 285, 304, 323, 342, etc. The methods for extraction and analysis enabled the texts grouped by type of device to be identified in narrative format and grouped in categories. Interviewees had responded with their own personal accounts to the question “learning obtained by using various mobile devices that could be applied ubiquitously”.

## 2. Research Results

The questionnaire responses are shown in two bar charts.

**Graph 1. Uses of non-smartphones**



**Graph 2. Smartphone uses**

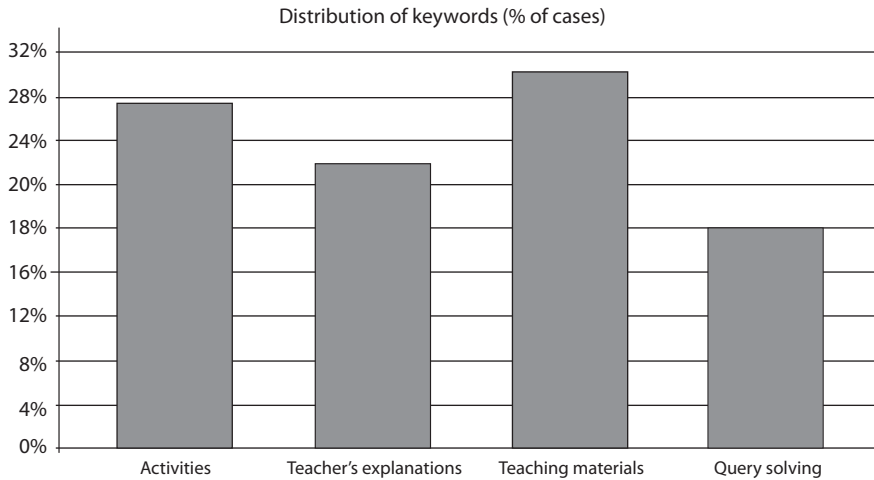


Table 2 shows the academic uses of non-smartphones and smartphones in descending order.

**Table 2.** Academic uses of non-smartphones and smartphones

ACADEMIC USES OF MOBILE PHONES (% cases)		
ORDER	NON-SMARTPHONES	SMARTPHONES
1	Carrying out activities (36.3%)	Access to teaching material (34.1%)
2	Teacher's explanations (27.4%)	Carrying out activities (31.1%)
3	Access to teaching material (27.4%)	Teacher's explanations (25.9%)
4	Query solving (20.0%)	Query solving (20.0%)

The information in Table 2 is expanded with conclusions drawn from discussion groups and "life histories". These qualitative data collection techniques specified the activities carried out, mainly, on each type of device. Their contributions are shown in Table 3.

**Table 3.** Educational activities with non-smartphones and smartphones

ACADEMIC ACTIVITIES CARRIED OUT	
NON-SMARTPHONES	SMARTPHONES
Reading newspapers via text messages (instant messaging)	Reading digital editions of newspapers
Communicating with classmates (instant messaging)	Conceptual query solving on Internet sites
Arranging to meet classmates (agenda)	Synchronising e-mail to the smartphone
Jotting down exam dates and essay deadlines (agenda)	Using Facebook and Twitter social networks
Making notes of things to remember (notepad)	Learning languages
Searching for terms in the dictionary	Group calls
Listening to the radio	Using WhatsApp
Tracking time during exams (clock)	Playing images, sound, videos and films
Sending images via Bluetooth	Writing with the word processor
Doing calculations (calculator)	Sharing notes with classmates
Recording classes (sound recorder)	Recording videos
Developing coordination and logic (games)	Taking photos and finding out about the monument photographed
Taking photos	Accessing the virtual campus for a particular subject
	Graphic designs
	Doing complex mathematical calculations
	Using the smartphone as a computer

Table 4 shows the method used to follow the teacher’s explanations via non-smartphones and smartphones. The data was obtained using qualitative data collection techniques.

**Table 4.** Teacher’s explanations with non-smartphones and smartphones

TEACHER’S EXPLANATIONS	
NON-SMARTPHONES	SMARTPHONES
Jotting down exam dates and essay deadlines (agenda)	Taking photos and finding out about the monument photographed
Making notes of things to remember (notepad)	Conceptual query solving on Internet sites
Searching for terms (dictionary)	Writing with the word processor
Communicating with classmates (instant messaging)	Accessing the virtual campus for a particular subject
Taking photos	Making a video recording of the class
	Sharing notes with classmates
	Doing complex mathematical calculations
	Group calls
	Using the smartphone as a computer
	Using social networks
	Graphic designs

Table 5 shows the strategies for accessing teaching material via non-smartphones and smartphones described in the discussion groups and the “life histories”.

**Table 5.** Accessing teaching material

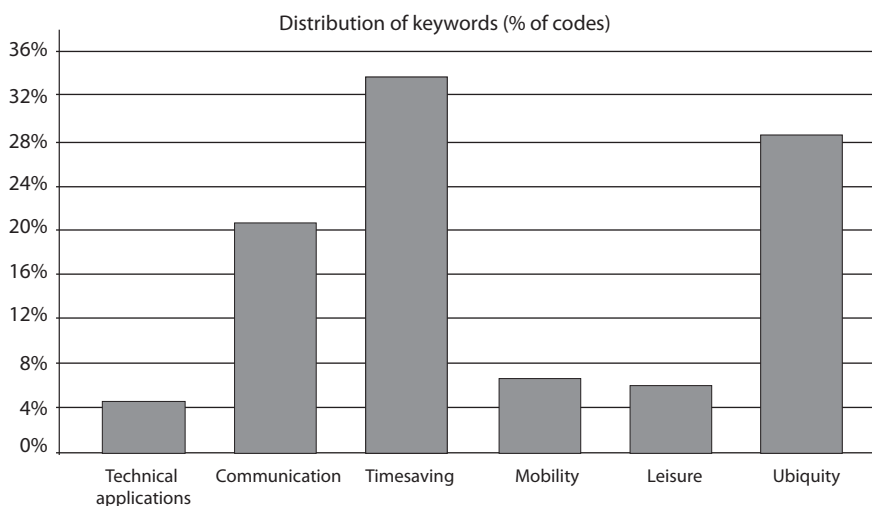
ACCESSING TEACHING MATERIALS	
NON-SMARTPHONES	SMARTPHONES
Making a note of where to find them (notepad)	Accessing the virtual campus for a particular subject
Asking classmates for them (instant messaging)	Accessing web sites
Taking photos	Writing with the word processor
	Making a video recording of the class
	Sharing notes with classmates
	Using the smartphone as a computer
	Accessing social networks

Table 6 shows the academic use made of non-smartphones and smartphones for query solving, as described in the discussion groups and “life histories”.

**Table 6.** Query solving

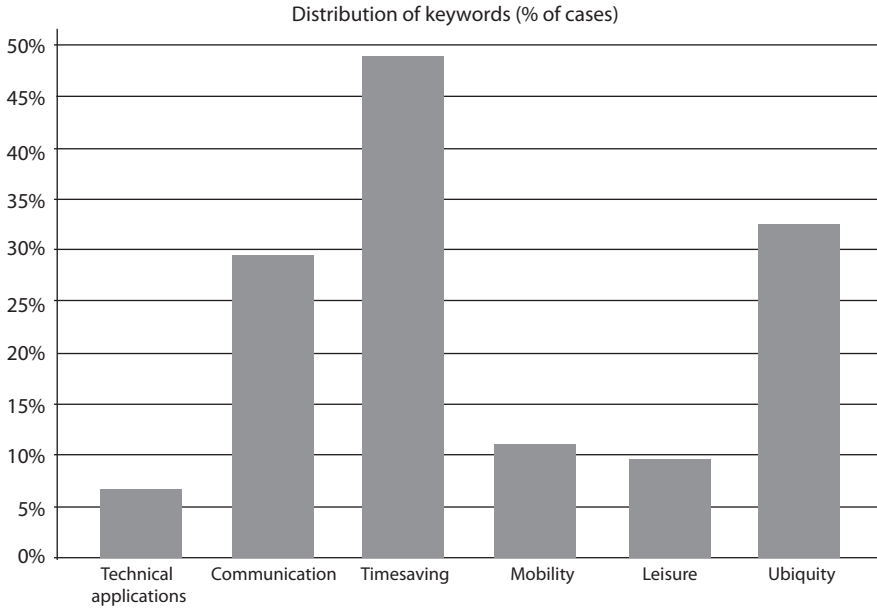
QUERY SOLVING	
NON-SMARTPHONES	SMARTPHONES
Asking classmates (instant messaging)	Accessing the virtual campus for a particular subject
Checking the dictionary	Accessing web sites
	Playing the video of the class
	Accessing social networks
	Sharing notes with classmates
	Using the smartphone as a computer

The sample studied highlighted the advantages of using mobile phones for academic purposes. Graphs 3 and 4 show the advantages and percentage assigned to each advantage.

**Graph 3.** Advantages of using non-smartphones for academic purposes

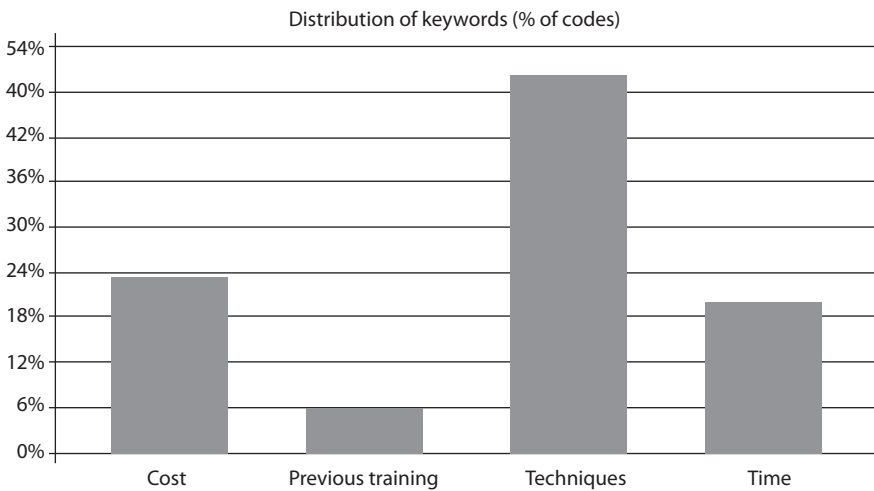
Contrary to what might be expected, there were no significant differences between the advantages of using non-smartphones and smartphones. In both cases, the following were described as advantages (in the same order, but with different percentages): timesaving, ubiquity, permanent communication, mobility and leisure options.

**Graph 4.** Advantages of using smartphones for academic purposes

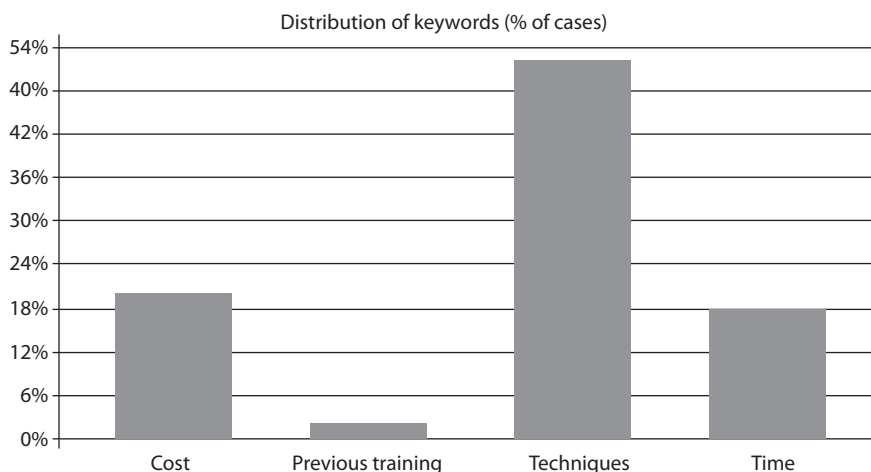


Using mobile phones for educational purposes also involves overcoming a series of problems. These are described in graphs 5 and 6.

**Graph 5.** Problems with using non-smartphones





**Graph 6.** Problems with using smartphones

Technical problems when using software were the most cited for both types of mobile phone (34.1% for non-smartphones compared to 51.9% for smartphones). This was followed, with no significant difference, by handset cost (18.5% compared to 20%), the time needed to use them correctly (17% compared to 17.8%) and previous training required (5.2% compared to 2.2% for smartphones).

Using a mobile phone equips users with a series of skills. Table 7 shows the skills gained through the academic uses of non-smartphones and smartphones in descending order.

**Table 7.** Skills gained through the academic uses of mobile phones

SKILLS GAINED THROUGH ACADEMIC USES OF MOBILE PHONES (% cases)		
ORDER	NON-SMARTPHONES	SMARTPHONES
1	Mechanical (10.4%)	Information handling (28.9%)
2	Analysing, summarising, information handling (8.9%)	Mechanical (20%)
3	Communicating (8.1%)	Communicating (17.8%)
4	Digital (7.4%)	Digital (9.6%)
5	Foreign language (3%)	Analysing and summarising (6.7%)
6		Foreign language (3%)

## **4. Conclusions and discussion**

The results obtained demonstrate that Spanish universities are moving towards a new collaborative learning paradigm. Mobile phones are one of the new types of hardware enabling this kind of learning to take place. However, mobile phones do not provide students with new knowledge. The academic use of mobile phones equips users with new skills with which they can increase their opportunities to acquire knowledge if they have a handset that makes this possible to happen. Non-smartphones reproduce the paradigm of analogue learning. They are a not very effective complementary learning tool. They do not enable ubiquitous learning because of their lack of access to the Internet. Smartphones are the immediate present and future of ubiquitous learning. Their definition, academically speaking, needs to be revisited. A smartphone is not only a telephone that functions like a portable computer. On the contrary, a smartphone used for educational purposes has become a portable computer that can be used as a telephone. Perhaps the use of smartphones as telephones is now secondary to their functionality.

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## **Subjective Concepts of Reading Literature Among Future Foreign Language Teachers of German: Implications for Theory and Practice**

### **Abstract**

The reading of literary texts has been strongly affected by modern times and media developments. In the development of reading, a proficiency gap can be perceived. In this contribution theoretical starting points are presented for viewing reading from the perspective of scientific disciplines and these are supported by empirical data on the subjective concepts of reading literary texts among future teachers of foreign languages. Teachers, with their inclination or refusal to read and their competences, transmit their views intentionally or unintentionally, consciously or unconsciously to students. At this point their subjective concepts of reading have consequences beyond the subjective. Illustrative segments from interviews and subsequent analysis will allow for a discussion and categorization of concepts held by readers and of guidelines for the education of teachers.

**Keywords:** *literary reading, reading competence, interview, reading concepts*

Reading literature was once a favoured activity, particularly for leisure time. Knowledge about literature and quotations from great authors' thoughts used to be a sign of intellectual prestige. Modern developments in the media have strongly interfered with this ancient Aristotelian tradition of reading culture, and have changed it significantly. The new media have become significantly more attractive than books and have presented themselves as their successful competition. People have taken interest in these media, developed skills and abilities that are necessary for successful handling of those media, and have increasingly less time, will power

and energy for literary reading. As a consequence, one sees less developed reading skills and abilities. Literary texts have thus become so alien to many readers that they do not accept the reading of literary texts as a challenge (e.g. Bonfadelli, Bucher 2002; Pečjak 2008; Jazbec 2009).

These developments in the media and the change in the tradition of reading have left their mark on school work. The book used to be an indispensable medium for teachers and their work, and students used to read literary texts frequently and successfully. The reading skills thus developed were successfully transferred to non-literary texts. Today, the situation in schools is very different because many teachers and students read books only occasionally or give priority to other media. The PISA study (2000) surveyed students' reading skills, and the results in some European countries, e.g. in Germany and Slovenia, proved to be alarming. The experts have proclaimed reading skills and abilities to be the "key or basic competence of modern man" (Groeben, Hurrelmann 2002; Rosebrock 2001; Saxer 2002, Garbe 2012) and have called for their systematic encouragement at various levels of education.

Numerous efforts to enhance reading and literary competence have been designed for students and young readers. Our purpose is to show that much greater attention should be paid to one crucial set of participants: teachers or teacher trainees. These are the people who, according to our hypothesis, with their inclination to read or their refusal to read, their more or less developed competences, intentionally or unintentionally, consciously or unconsciously transmit their subjective views and developed competences to their students. This is the point where the teacher's otherwise subjective theory of reading is significantly extended. In this context, we will not be analyzing the contribution of teachers but that of students, i.e., of future teachers in the last semester of their studies. We assume that the findings will not be identical to those that would have been obtained by studying teachers, but they are comparable. At the same time, we wish to draw attention to the need for enlarging the empirical sample and encouraging research into and recordings of reading strategies, as well as reflecting on the subjective reading strategies of teachers of foreign languages.

In this contribution we will present theoretical starting points for viewing reading and compare these with empirical data on the subjective concepts of reading literary texts among teacher trainees of a foreign language, namely German, in Slovenia. We assume that illustrative and exemplary cases will show that the gap between theory and empirical reading is thus considerable in educating teachers and consequently pupils. New concepts of reading, especially of reading literature, need to be considered as well as various approaches to teaching literature. Fur-

thermore, we believe that the findings will be interesting for other countries where similar problems exist: poorly developed reading ability, and reading avoidance among pupils as well as teachers.

From the above concepts of reading biography research (Schön 1990; 1997, 2004), the reception theory of Iser (1978) and Jauß (1970), cognitive psychology research (Christmann, Groeben 1999), and sociological point of view (Graf 1997) we can briefly conclude that reading is not just passive summarizing of the meaning of the text, but a mentally challenging, complex and complicated interactive process. It is influenced by constants such as the text and the reader, and by variables such as individual experience, knowledge, the individual's starting points and his differently variegated reading and literary history. We will concentrate on these subjective concepts of reading in individual readers. We are interested in locating the junction of objective theories of reading and subjective practice, in finding the deviations and in determining how these findings can constructively revise the guidelines for literary didactics.

## **Data collection and analysis**

The empirical data concerning subjective theories of reading were obtained in guided interviews with 7 students of German in Slovenia. The number of students is not representative as this is a qualitative case study, but it is illustrative and exemplary. The interviewees expressed their reflections on reading with prompting (indirect questions) from the interviewer. They meditated on reading in their childhood, the people who had an important impact on their reading, on the books they read, their reading at school, their teachers of literature, the act of reading literary texts, the importance of reading, etc. We recorded and transcribed these discussions and thus obtained a valuable corpus of empirical material for research into the various dimensions of reading (Jazbec 2009). Here we only have space to concentrate on one aspect of the subjective theory of reading and that is the individual's reading concept, which we will reconstruct from the reflections on reading, while considering the consequences for teacher trainees and their education.

Using the "cut-and-paste-technique" as a descriptive-reductive analysis (Lamnek 2005), we have selected from the extensive interviews those containing relevant information for our research problem.

We will present several possible reading concepts, as we are more interested in the widest range of concepts than in a full and detailed analysis of them. First, we will list a section of an interview, followed by an analysis of each individual reader,

and then we will try to classify them, despite the individuality of the responses, into a number of categories. In the case of our interviewees, we are dealing with individual perceptions of reading in a group of teacher trainees in Slovenia with comparable levels of education, literary socialization in school and professional interests. Because of that, the individual theories also display a general dimension, on the basis of which we can develop categories and which we must take into account in proposing new teaching guidelines.

#### **Data analysis and interpretation**

The interviewees, students of German in Slovenia, are future teachers of foreign languages. Reading is an important, comprehensive and intense part of their study and work.

*Interview statement – Beno (all names in this article are pseudonyms):*

*Beno: The nicest thing about reading is that I, I believe, indeed, I read the words, from another person, but in this manner I can become more engrossed in myself, er, in the sense, well, if I read this, I think, I always think why the author has written this, but not in the sense, why, why actually, but what has moved him to write, er, er what did he want to say to us with that. Then I also think about my interpretations, why I think so and, and er, I, I learn from all fictitious and also real texts, I believe, since life is global, well, I have always thought and always acted so that the more one speaks with people, well, I also believe if one reads, indeed, one, one has a dialogue with people, he does not speak back, but one, one reads his words and I found this always the nicest thing.*

For Beno, reading is an intense mental process, real mental training. The text provides primary guidance for him and forms the generator of his thoughts. In reading, he communicates with the authors, one-sided communication. Beno uses the author's words for a journey 'into himself' and as a stimulus for his own thinking. It is important that, despite the prominent creative role that he attaches to the reader in the process of reading, the reader is in a position that is absolutely inferior to that of the text and author. This is reminiscent of the traditional concept of reading, and in particular the exaltation of the importance of the author and the text and not of the meaning of the text as constructed by the reader. From the cognitive-psychological point of view, we could say that bottom-up processes absolutely dominate top-down processes in this student's approach to reading.

*Interview statement – Klara*

*Klara: [...] the nicest thing about reading, for me is to switch off, I do not know, I can have two exams the next day, but I take, I always take time the evening before, before*

*I go to bed, to read for two, two hours. This switching off, not thinking of the problems, to take it easy completely, I like this.*

For Klara, reading is a way to relax, enjoy the moment and switch off from reality, to escape from the problems and challenges of everyday life. For her also, the text dominates the reader. The statement above by no means confirms the theory of the crucial constituent role of the reader in the process of reader attribution of meaning to the text. At most, it is the other way round, the kind of reading that finds expression with Klara is reminiscent of classic trivial reading. Literature is functionalized because it is absolutely subordinated to the subjective aims of the individual. In this case, reading, according to Graf, is a medium of “the instinctive economy,” while in contrast to this sophisticated aesthetic literary reading is a medium of “consciousness development” (Graf 1980, 19).

*Interview statement – Tina*

*Tina: well, actually, just what I can imagine myself, how the protagonists, the persons are, how the actions are, that I sort of make a movie and that I imagine how it goes for these persons, protagonists, what they think, well, what picture I can form from it myself*

Tina emphasizes the activity of the reader. This reverses the relationship of the dominant factors as seen in Beno and Klara. Tina needs the text only as an impulse, as a basis for her own directing. While Tina strongly emphasizes her own activity, which unwinds away from the text and from the book medium toward the film medium, the text recedes into the background of her act of reading.

*Interview statement – Hana*

*Hana: well, er, one has, actually, time for oneself, er, one is relaxing, one dives into another world, well, one forgets everyday problems, this is, actually, the best*

Hana reads when she has time to devote to herself. Devoting time to herself, according to her, means relaxing and withdrawing from the real world, complicated by problems, to a different world of literary texts. Hana’s reading experience highlights the specificity and originality of literary texts, which are ‘conformable’, and holistic and address the reader simultaneously as an individual, a cognitive and emotional being, while the reader in real life functions in the respective roles. Hana has thereby indicated that she understands the key feature of literary texts, a characteristic that separates literary texts from non-literary texts: they address human beings holistically (Šlibar 1997).



*Interview statement – Aleksandra*

*Aleksandra: The nicest thing, really, in books, is I can relax a little bit, I can see people, er, especially, if the stories sound so realistic that they, er, that always, that, er, that you always have to go on, er, that one always fights on, .....what people earlier, well, people that have lived at that time, what kind of problems they dealt with, etc., I simply enjoy this, the knowledge, always something new to find out, no matter whether it is in the sense of reality, well, in this sense, that it, that something happened in that way and such, but also, about new countries, cultures, about other way of thinking, well, anyway.*

Aleksandra also highlights the enjoyment of reading. The realism of texts, which contrasts with the fundamental principle of literary texts in our social context, namely that these texts are fictional, is of particular importance to her. Aleksandra also stresses the importance of a positive note and the sense of security that reading gives her; she regards reading also as the acquisition of knowledge. Although the acquisition of knowledge is among the weakest functions of literary texts (Šlibar 1997), it is interesting that this particular aspect is crucial for Aleksandra.

If it was obvious that Beno equates the experience gained by reading to those he has gained himself; for Aleksandra, the two are clearly separated. She enriches her personality with her own experience; reading gives her only information about these experiences. Aleksandra talks more about the substantive aspects than about reading itself, and only implicitly can we deduce from her statements that the reader is guided, informed and 'delighted' by the text.

*Interview statement – Andrej*

*Andrej: The nicest thing? I believe, to have a little time for yourself, to go to a room, switch off a little and only be concerned with yourself, if I say so, actually, because one has this time for himself only and, one switches off from everything, from the surroundings and becomes absorbed in the story, one tries in such a way, yes, and above all also acquires information [laugh] I am the kind of person, who likes to, I believe, the word does not fit, it is a little, not vulgar, but, ... I am a bit of a smartass.*

Andrej reads at the time that he spends with himself, when he disconnects from the outside world both locally, because he shuts himself into the room, as well as mentally, when he is dealing with the content of the reading. It is interesting that he does this in a calculating and selfish way, so that he will be able to relate it to others and thus consolidate his important role in life. He acknowledges honestly and directly that he is knowingly using the strategy to show off before others with information and in that manner recharge his ego. Reading serves him as an impor-

tant source of interesting information, which he acquires through reading and does not construct, which means that Andrej affirms the traditional understanding of reading as the decoding of information from the text.

*Interview statement – Meta*

*Meta: er, [...], I can identify that way, I can identify with the central figures or with one person in the literary text and then put, er, myself in his or her thoughts and think about how I would do this, er, how nice or how bad it would be if I had to do the same thing or if the same thing happened to me.*

Meta uses reading to test different life roles. The possibility of identification in reading is a common strategy of reading (Heuermann, Hühn, Röttger 1982). The question of whether the reader who identifies with the literary figure is more mentally active than the one who merely observes it from the side, exceeds the boundaries of this contribution. However, we can surely reconstruct that in Meta's reading the text has a leading role, not the author and not the reader. The reader only delivers himself to it and makes use of text signals for his own mental acrobatic performance beyond the text.

## **The Results: Categorization of readers**

For these interviewees, the individuality of their reading achieves clear expression, although they may, depending on their superindividual dimensions of reading, be arranged into three categories.

1. The reader is an almost equivalent factor with the text and the author in the literary communication. Beno belongs to this group. His way of thinking clearly distinguishes him from other interviewees. Detailed analysis of the entire interview established Beno as a deft and active reader of different types of texts and also a competent user of various media. He skilfully transfers skills gained in various areas from one place to another. Beno alone managed to come close to the current theories of reading earlier presented with his concept of reading. Nevertheless, even with Beno it can be noted that he does not attribute the same important role to the reader in literary communication as he does to the text and the author.
2. The reader is completely subordinate to the text and the author in literary communication. With the majority of other interviewees, the flabbiness, passivity, and subordination of the reader in relation to the text in the process

of reading are all the more apparent. They also strongly and clearly highlight the self-indulgent function of reading. Interestingly, there is a strong belief in theory that in today's modern world enjoyment belongs to other domains and not to the medium of the book (Rupp, Heyer, Bonholt 2004), but as is clear from the interviews, this does not apply to these interviewees.

3. The reader is the most decisive and most important factor in literary communication. Only Tina can be placed in this group. She views the texts only as a source of ideas for directing her own movies, which take place beyond the text. Such "unbearable lightness" in the conception of reading and interpretation of texts is a deviation from the actual reading, which allows freedom for the reader, but also demands his constructive cooperation and constant returning to the text as well as avoidance of optionality.

The three concepts of reading emerging from the analysis of exemplary individual cases are sufficiently general that we are able to categorize most readers from the group of future teachers of German as a foreign language accordingly. Clearly, however, none of the concepts stands out as more, if not fully, congruent with the theoretical starting points presented. We can therefore ascertain a considerable gap between the theory of reading and the reading process and practice of reading among teacher trainees in Slovenia. The intuitive notion of reading as a skill to be learned and to know and that gives us pleasure while literariness itself retreats to the background, is still very topical. At the same time, reading is still, above all, the decoding of the meaning of the text encoded into the text by the author (this is particularly topical in literary texts). The reason for this comprehension is the culture of learning in Slovenia, which still insufficiently encourages productivity or creativity in teaching (Ivanuš Grmek, Javornik Krečič 2004). Consequently, the student readers are not constructive while reading, even while reading literary texts. This fact is particularly problematic despite their intense practice of reading and their continuous contact with literary texts throughout the course of their education.

## **Conclusion**

It is a great challenge to closely examine the process of reading literary texts. Owing to the exceptional intricacy of the process and numerous factors that affect it, the research is actually only a process of approaching the phenomenon. The individual interviews provide a significant and interesting viewpoint on reading. The analysis of those interviews has thrown light upon certain viewpoints and

pointed out the vital cruxes of reading of future teachers of foreign languages. Even if these interviewees have developed their own reading concepts, analysis suggests these to be variously differentiated and, above all, more reader – than literary text-friendly. It appears that these future teachers are inclined towards reading that is comfortable and pleasant and into which they put only as much effort as they themselves wish, even when the text is exacting and requires intense and absorbed reading. We can imagine that a teacher with such an individual reading concept will only rarely successfully stimulate intense reading by pupils, regardless of the degree of professionalism. Therefore, we believe that it is necessary to supplement the teaching concepts during the university education of teachers.

Given the importance of comprehending individual perceptions of reading, particularly for the teacher-reader, we believe that it is necessary to start changing the current practice of reading. Since these are important, socially deep-rooted and individually internalized processes, we need to be aware that this will be a complex, long-term process. Therefore, teacher trainees should primarily know and explore the process of reading in the light of various theories, which should enable them to be aware of its complexity. They should discuss the great importance of reading for the individual in particular, especially in the age of new media. They should apprehend that skilful reading of literature is a competence that intensifies and helps build competence practices with other media and also that the medium of the book is complementary to other media. Teacher trainees should be aware of their own process of reading and reading socialization. The most important thing, however, is that curricula at all levels of education should also implement a requirement that readers talk and learn about “how” to read and not only about “what” to read or about the text being read.

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## **Diagnostics of the Student's Learning Style With the Use of Modern Information Technologies**

### **Abstract**

The paper deals with learning styles and their initial diagnostics in the process of the student's learning. It is focused on a method of learning styles recognition with the support of modern information technologies. The paper analyses different methods of the learning styles diagnostics, incorporating this issue into the scientific field of artificial intelligence and presents an idea on how to diagnose a learning style by using an unconventional fuzzy logic linguistic expert system. The expert system was designed to diagnose learning styles of university students in adaptive computer aided learning systems. A significant benefit is continuous numerical evaluation of the student's degree of affiliation to all learning categories (types of student) with a possibility of simple determination of dominant and subdominant types, the use of a linguistic rule-based decision-making model, which is completely transparent and open, and the use of a decision-making procedure corresponding to the process of human consideration. The paper is an example of an application of modern information technologies in education.

**Key words:** *learning, learning style, diagnostics of learning styles, adaptive learning systems, model learning style model, methods of diagnostics of a learning style, typology of learning styles, artificial intelligence, expert systems, linguistic fuzzy model, fuzzy set, fuzzy logic, degree of affiliation.*

## **Introduction**

Learning is a part of our lives. It is a lifelong, active, and creative process with an aim of shaping the individual. According to Čáp (Čáp, 1993), in the most general terms, we can understand learning as a process of acquiring individual experiences. In a narrower sense, learning is associated with school and school education and is understood as acquisition of knowledge, skills, habits, and attitudes, as well as a change in mental processes and a state of mental qualities. We understand learning in a narrower sense – as the student's activity leading to the acquisition of new knowledge, skills and attitudes. While learning, each student processes a lot of information and approaches it in different ways; everyone has his own unique style. As a learning style we understand learning processes that an individual uses during a certain period of life in most situations related to study. To a certain extent, they do not depend on study content. They appear at the congenital basis (cognitive style) and develop by an influence of both internal and external factors (Průcha, Walterová, Mareš, 2009). The student usually does not realize his learning style, does not analyse it systematically and does not improve it deliberately. A learning style seems to be an obvious, common, habitual and satisfactory approach (Mareš, 1998). But the learning process, i.e. its progress and efficiency, is influenced by the way (style) each student learns (Nakonečný, 1998). Therefore, knowing one's own learning style before studying is useful for the student, so he can target and individualise interventions in the course of learning in order to streamline this process.

Although there are specialised computer programs for dealing with the diagnostics of learning styles, they are usually designed for off-line decision-making support by the teacher; the final decision must be made by the teacher himself. However, if such programs are a part of on-line systems, their conclusions must be sophisticated and reliable enough. There are tools from the scientific field of Artificial Intelligence for the creation of such systems. Among them there is a fuzzy-logic expert system designed to determine the student's individual learning style before he starts studying. Users of the system can be both teachers and university students, especially part-time students.

## **Diagnostics of learning styles**

Understanding learning styles is difficult. A learning style is a hidden and latent variable which can be measured only indirectly, because it is mediated by other variables; we can indicate its quality using the available indicators (Marton,

1988). There are many specific methods used for the learning styles diagnostics worldwide. They can be classified according to various criteria. For our purposes, the important aspect is the method of acquiring information. This aspect classifies methods to rather direct and rather indirect ones (Mareš, 1998).

Direct methods include observation of the student's learning progress and computer-aided learning. Procedures which use computers for studying particular material were described by V. Kulič (Kulič, 1992). He talks about the so-called procedural diagnostics of the student's learning in which continuous characteristics of the student's performance and the process of learning should be recorded and evaluated. These procedures have been further elaborated in intelligent mentoring systems, which are computer-aided systems with programs that teach students how to resolve a defined problematic situation correctly and effectively (Kulič, 1992, cited according to Mareš, 1998).

Intelligent mentoring systems are related to adaptive learning systems which try to adapt the learning process to individual characteristics and needs of students. For more than 20 years, Peter Brusilovsky has been dealing with the issue of adaptive systems. He published numerous papers on adaptive hypermedia and an adaptive web, and also focused on the issue of hypermedia systems which attempt to adapt to the student's learning style (Brusilovsky, 2001, 2003). Adaptive learning is more or less close to AHA System – the adaptive hypermedia learning system (Bureš & Jelínek, 2004, Paramythis & Loidl-Reisinger, 2004), which is based on the idea of an adaptive web. The web is adjusted to the needs of the student based on his behaviour while working with a hypermedia system. However, AHA ignores the psychological-pedagogical features of the student. The introduction of adaptation based on learning styles is described by Liu, who stresses the importance of learning styles for education (Liu, 2010).

Indirect methods are used very often for the diagnostics of learning styles, even though they anticipate that students have developed skills of introspection and self-reflection. Questionnaires that fulfil diagnostic or self-diagnostic functions are particularly popular. Mareš (Mareš, 1998) provides an overview of main questionnaire methods which detect learning styles. However, authors define learning styles differently. Therefore, many learning styles models have appeared which exhibit similar approaches even though they were developed in various R&D institutions, independently of one another and are described with the use of different terminology. For instance, Briggs and Myers' model understands the learning style as a part of a relatively permanent personality type, which is visible from the outside (Coffield, 2004). A questionnaire for learning style determination of The Myers-Briggs Type Indicator- MBTI firstly sets the personality type of the learner, from



which it derives his reactions to the outside world. According to Kolb, Felder, and Silverman, learning styles are not a permanent, unchanging personality trait; they are defined as a preferred learning method which varies according to a particular situation. Kolb's learning styles questionnaire (Learning Style Inventory, LSI) comes from the theory of acquiring knowledge based on the transformation of experience (Kolb, 1984).

Felder and Silverman created a typology of learning styles based on four dimensions taken from the Kolb and Myers-Briggs models (Kaliská, 2012). Particular dimensions are independent of each other; they consist of two poles (categories) which determine a particular type of the student. The different types of students can be briefly described as following:

### **1. Sensing and Intuitive Type of Student**

Students tend to perceive the world either by their senses or intuition. The perception of the senses includes observation and gathering data through the senses. Intuitive perception involves indirect, unconscious perception through considerations, imagination and feelings.

### **2. Visual and Verbal Type of Student**

Visual learners perceive and remember best what they see- pictures, diagrams, charts, tables, maps, etc. Verbal students are oriented on information presented by words. They put emphasis on text input and output- reading and writing in all its forms.

### **3. Active and Reflective Type of Student**

Felder and Silverman state that complex mental processes, which transform the perceived information into knowledge, consist of two categories- active experimentation and reflective observation. Active types of students prefer to learn in situations that allow group work and active experimentation. Reflective types of students require a situation that gives them an opportunity to think about the presented information. They prefer theoretical deduction and study themselves or with one more person (Felder, Silverman, 1998).

### **4. Sequential and Global Type of Student**

Sequential types of students are satisfied with dealing with materials presented in a coherent order. They learn by small steps and it is most convenient for them when their teacher presents material in the final form in which they need to know it. It takes global students quite a long time to learn, sometimes up to several weeks,

with numerous interruptions and new starts, without the need to solve a basic problem, but then suddenly everything makes sense to them. They try to look at the problem holistically (Felder, Silverman, 1998).

According to Felder and Spurlin (Felder, Spurlin, 2005), each student has his learning style defined by one of the categories of each of the four dimensions. The decision which dimension the student should be classified in is based on a mathematical interval method. Transitions between the intervals are sharp; the transition to the next category (pole) of each dimension at the endpoint of the interval is conditioned only by the change of evaluation by one distinguishing degree (point). This solution does not provide a possibility for continuous transition between categories.

However, Kaliská (Kaliská, 2012) notes that although each student always tends to one specific pole (category) of each dimension, we cannot say that this category is the only one typical of the student, because his learning style is a combination of all his individual learning preferences. Therefore, determination of the student's learning style involves particular uncertainty, which can be well described by modern methods of artificial intelligence (Mařík, 1997).

That is why there is a fuzzy-logic expert system presented in the paper, which uses the learning styles typology according to Felder and Silverman to diagnose learning styles, but also allows for numerical determination of the degree of affiliation to each category. Such a system, which formalises mental models of experts and uses artificial intelligence methods, is described in the following part.

## **Unconventional methods of learning styles diagnostics**

Computer-aided decision-making processes require the creation of abstract (computer) models of decision-making situations. If we consider the decision-making process in complex real-life situations, creating quality and adequate computer models tends to be very difficult. To deal with this problem, let us consider the fact that real-life decision-making processes may be resolved by a person, especially an expert in his area, using his brain, mental, and intellectual cogitative processes. The scientific field called Artificial Intelligence is engaged in computer formalisation of such processes. It uses new unconventional approaches which flow from the analysis of human cogitation. Cogitation involves mostly words and sentences of the natural language, which represents the basis for creating non-numerical linguistic models of the resolved situations. These so-called mental models are created by an expert on the basis of information, knowledge and experience.

The basic feature of human knowledge formalised verbally is its vagueness. This feature contrasts with mathematical and numerical formulations, which are precise and sharp. Analyses have shown that it is the ability of the human brain to utilise vagueness effectively which makes the significant condition for the quality of one's cogitation. The first condition of creating computer-aided linguistic models is resolving the problem of formalising the vagueness as obscurity of verbal expression. One of the most widely spread methods is the method of fuzzy set mathematics. The next problem, which is the creation of logical inference algorithms which are capable of applying linguistic vagueness for an output recommendation, is resolved using the approaches of unconventional multi-value linguistic fuzzy logic.

A sophisticated decision on the learning style of a particular student requires the determination of his dominant style as well as a considerable degree of influence of other subdominant styles (Kaliská, 2012). Within the artificial intelligence, this problem is resolved introducing so-called fuzzy sets (fuzzy meaning blurry, without clear boundaries, vague) that, apart from absolute affiliation (1) and absolute non-affiliation (0), introduce the very important term of partial affiliation expressed by a real number from the interval (0,1) (Novák, 2000, Pokorný, 2012). The final classification is not expressed by affiliation into a sharp numerical interval, but continuous evaluation of all classification classes in the range from 0 (absolutely no) to 1 (absolutely yes) with a continuous expression of the degree of partial affiliation (0 to 1). Such an output allows for effective and natural expression and evaluation of the degree of the student's affiliation into individual categories and their combinations. The student's learning style may then be determined by the dominant style (such as degree 0.75), as well as other subdominant styles (e.g., affiliation degrees 0.24 and 0.30). The form of such a decision fully corresponds to the outcome of the teacher's decision-making process.

The evaluation of particular types of student using the degrees of the student's affiliation is the issue of constructing a linguistic model "Character of student → Type of student". Our aim is to formalise the mental model of the teacher using a computer and to apply the methods of linguistic modelling, which greatly resemble the mental model. In this paper, we will use the widely applied rule-based linguistic model where the dependencies between inputs and outputs are described by the relation IF THEN.

The linguistic model comprises the so-called knowledge base – the base of the expert system. Its other relevant part is the so-called inference mechanism (algorithm) which evaluates the linguistic values of the output quantity after inputting particular variables. The inference algorithm applies the laws of fuzzy multi-value linguistic logic and general (fuzzy) principle Modus Ponens (Pokorný, 2012; Novák,

2000). The aim of the inference algorithm is an evaluation of linguistic values of the output quantity which an expert teacher would achieve if he dealt with the same case. The structure of the knowledge base of a linguistic model and a simulation of its function are described in the following part of the paper.

After studying the typology of learning styles according to Felder and Silverman (Felder, Silverman, 1998), the typical features which influence a learning style were determined for each category (type) of the student (see above). Such qualities of the student also represent the input variables of the expert system. These are the following seven qualities:

1. *Social aspect* – qualifies the way of involvement in the social environment preferred by the student while studying (if he prefers being alone or in a group),
2. *Way of information processing* – determines whether the student prefers theoretical inference or practical experiments,
3. *Sensual perception* – describes which sense the student uses mostly to perceive, in what way he grasps the information and remembers it
4. *Way of learning* – describes the depth of learning the material,
5. *Methods* (applied while learning) – it is the way of the fastest acquisition of the required knowledge,
6. *Systematic learning* (or the order of information processing) – describes whether the student prefers an exactly given system or method or whether he prefers his own way of learning,
7. *Learning process* – determines how extensive the information the student can process at once is.

The particular values of the student's qualities are achieved by evaluating the questionnaire resulting from the ILS (Index of Learning Styles). The ILS questionnaire was compiled by Richard Felder and Barbara Solomon. It contains 44 questions the aim of which is to place students' preferences of learning styles in one category in each of the four dimensions (Felder, Solomon, 2004). We selected this questionnaire as its electronic use was proved to be suitable, e.g. by research (Carver, 1999) or studies (Felder, Spurlin, 2005; Kaliská, 2012). The results of the studies prove that the ILS questionnaire is adequately reliable.

The rule-based fuzzy model has seven input linguistic variables and four output linguistic variables which correspond to the dimensions according to the typology of learning styles according to Felder and Silverman (Felder, Silverman, 1998). The linguistic variables, their linguistic values, identifiers, and extent of universes (as required by the method of creation of a linguistic model) are listed below.

A. Input linguistic variable	Universe	Linguistic values
SOCIAL ASPECT (SA)	[0, 100]	INDIVIDUAL (INV), GROUP (GRO)
METHOD OF KNOWLEDGE ACQUISITION (MKA)	[0, 100]	THEORETICIAN (THE), PRACTICIAN (PRA)
SENSUAL PERCEPTION (SP)	[0, 100]	GRAPHIC (GRA), VERBAL (VER)
LEARNING STYLE (LS)	[0, 100]	SHALLOW (SHA), INDEPTH (IND)
WORK METHODS (WM)	[0, 100]	KNCWN (KNO), INNOVATIVE (INN)
SYSTEMIC LEARNING (SL)	[0, 100]	FREEDOM (FRE), ORDER (ORD)
LEARNING PROCESS (LP)	[0, 100]	HOLIST (HOL), DETAIL-ORIENTED (DET)
B. Output linguistic variable		Linguistic values
REFLECTIVE/ACTIVE TYPE (REF/ACT)		REFLECTIVE (REF), ACTIVE (ACT), REFLECTIVE-ACTIVE (RA)
VISUAL/VERBAL TYPE (VIS/VER)		VISUAL (VIS), VERBAL (VER)
SENSING/INTUITIVE TYPE (SEN/INT)		SENSING (SEN), INTUITIVE (INT), SENSING-INTUITIVE (SI)
GLOBAL/SEQUENTIAL TYPE (GLO/SEQ)		GLOBAL (GLO), SEQUENTIAL (SEQ), GLOBAL-SEQUENTIAL (GS)

The rule-based fuzzy model formalising the expert mental model of determining the student's learning style has 128 rules, the condition parts of which represent all combinations of linguistic values of input variables. Particular combinations were evaluated by an expert by matching the respective linguistic values of output variables. The first five rules of the fuzzy model (IF – THEN in the common English notation) are listed in Table 1.

**Table 1.** Fragment of fuzzy model rules

No.	Antecedent							Consequent			
	SA	MKA	SP	LS	WM	SL	LP	REF/ACT	VIS/VER	SEN/INT	GLO/SEQ
1	INV	THE	GRA	IND	KNO	FRE	HOL	REF	VIS	SEN	GLO
2	INV	THE	GRA	IND	KNO	FRE	DET	REF	VIS	SEN	GS
3	INV	THE	GRA	IND	KNO	ORD	HOL	REF	VIS	SEN	GS
4	INV	THE	GRA	IND	KNO	ORD	DET	REF	VIS	SEN	SEQ
5	INV	THE	GRA	IND	INV	FRE	HOL	REF	VIS	SI	GLO

Rule R1 in the form:

R1: IF (SA is INV) and (MKA is THE) and (SP is GRA) and (LS is I>TD) and (WM is KNO) and (SL is FRE) and (LP is HOL) THEN (REF/ACT is REF) and (VIS/VER is VIS) and (SEN/INT is SEN) and (GLO/SEQ is GLO)

formalises the following knowledge:

*If a student prefers learning individually, prefers theoretical inference, remembers better what he sees, strives to understand the sense of the studied information in depth, resolves problems by common (known) methods, but likes applying his own processes of solution and prefers large chunks of information, then he is a reflective, visual, sensing and global student.*

The linguistic fuzzy model is open; it can be extended by new preferential or otherwise modified rules. In this case, the fuzzy model is implemented and tuned in the program environment Linguistic Model Processing System (LWMS), which further contains the inference algorithm as well as other processes for entering input data, displaying results and information that a user needs for good orientation (Pokorný, 2012). Now the system is prepared for simulation verification.

## **Verification of the expert system function**

Simulation calculations are performed as follows: the input values of the model are set as the values of seven input variables and the expert system then infers the degree of the student's affiliation into particular linguistic values of all four output variables (dimensions). The output values are numeric, obtained by evaluation of the questionnaire based on ILS. For our simulation, the input values presented in Table 2 were used; Table 3 shows the output values. Simulation 1 is shown in Figure 1 to Figure 4 as the output screens of the expert system, both simulations are then interpreted verbally.

**Table 2.** Values of the input variables for inferring a learning style

Simulation	SA	MKA	SP	LS	WM	SL	LP
1	89	70	25	5	20	95	90
2	30	20	70	85	90	20	17

**Table 3.** Degree of the student's affiliation into particular learning styles

Simulation	Output variables										
	REF/ACT		VIS/VER			SEN/INT			GLO/SEQ		
	REF	ACT	RA	VIS	VER	SEN	INT	SI	GLO	SEQ	GS
1	0.11	0.73	0.30	0.75	0.25	0.74	0.05	0.20	0.05	0.71	0.10
2	0.71	0.20	0.30	0.30	0.70	0.10	0.70	0.15	0.72	0.17	0.20

**Simulation 1** shows a situation when the student indicates that he prefers working in a group using the trial and error method. He remembers better what he sees. He uses proven and standard methods of learning with the aim to reach a deep understanding of the studied material. He prefers learning based on a guide or methodology and he processes information in smaller units. The system drew a conclusion (Table 3) that such the student is rather active (0.73), visual (0.75), sensing (0.74) and sequential (0.71). The degrees of his affiliation into other types are neglectable (graphic presentations of the outputs are presented in Figure 1 to Figure 4).

**Simulation 2** represents the student who prefers learning alone and considers everything thoroughly. He remembers better what he hears or reads. He often processes the studied material by his own innovative methods and ways of solution aiming at learning the material with the least effort, passively, without any effort towards a deep understanding the topic and its context. The system concluded (Table 3) that such a student is rather reflective (0.70), verbal (0.70), intuitive (0.70) and global (0.72). The degrees of his affiliation into other types are neglectable.

A well-arranged overview of the results is graphically represented in columns (Simulation 1, Figure 1 to Figure 4). The student is affiliated into particular types according to the column height within the interval  $<0.1>$ . The higher the yellow column is, the higher his affiliation into the type is.

**Figure 1.** Simulation 1 – Evaluation of the type Reflective/Active

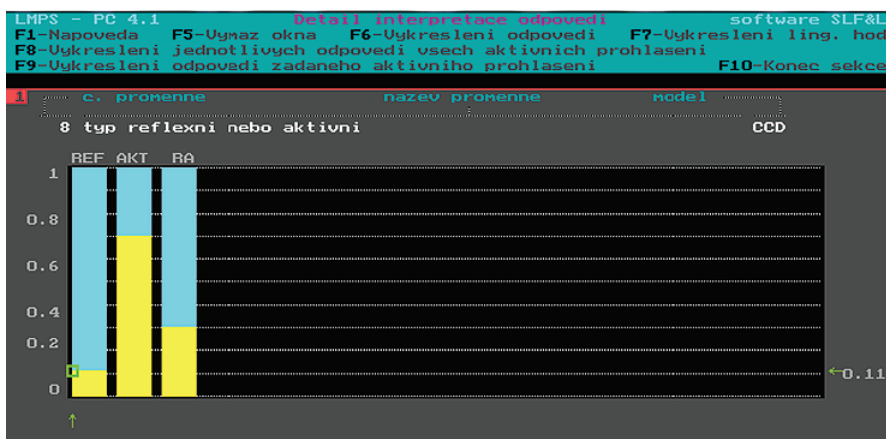




Figure 2. Simulation 1 – Evaluation of the type Visual/Verbal

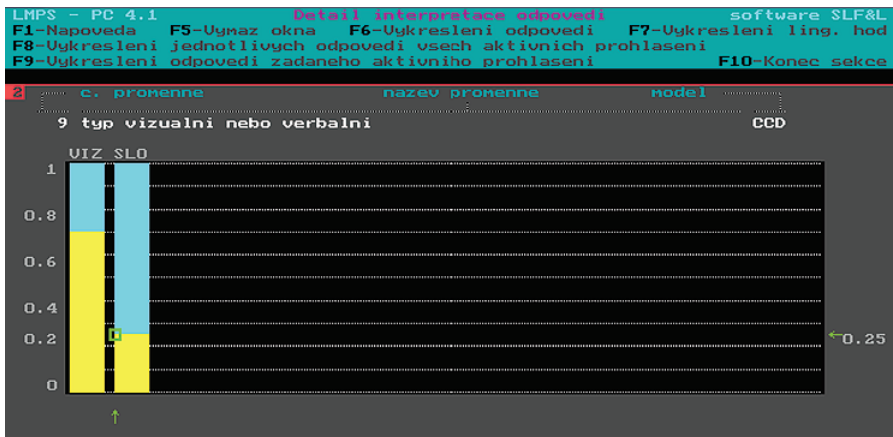


Figure 3. Simulation 1 – Evaluation of the type Sensing/Intuitive

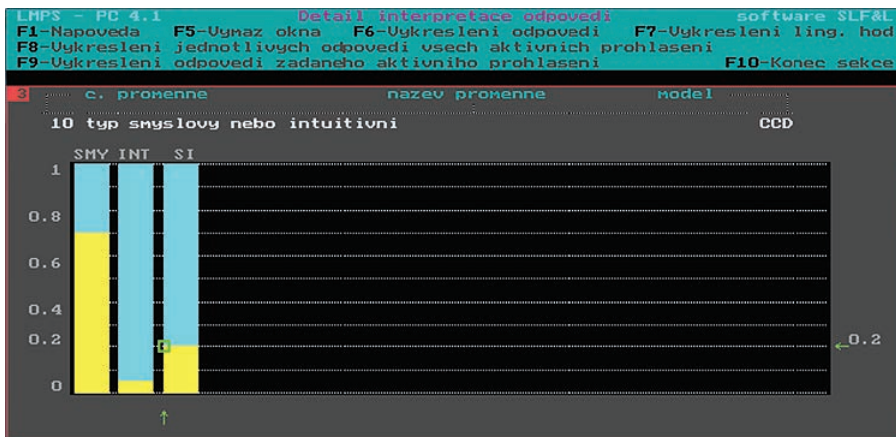
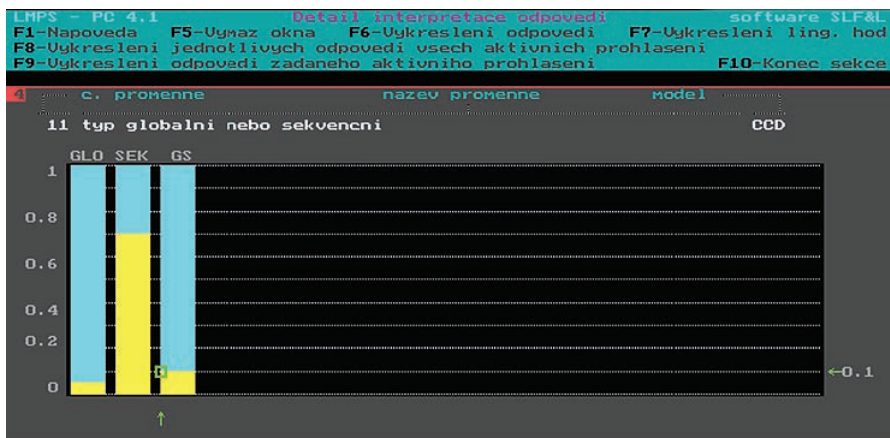


Figure 4. Simulation 1 – Evaluation of the type Global/Sequential





As an experienced teacher may assess as well, the results of learning style diagnostics in both simulations correspond to expectations.

## **Conclusion**

A learning style means the learning techniques and methods which an individual uses in a certain period of his life in most situations related to study. They are to a certain extent independent of the content of learning. They appear at the congenital basis and develop by influence of both internal and external factors.

Every student has his individual learning style which the teacher should respect and thus support his effective learning processes. Correct recognition of the student's learning style is a skill of a good teacher. Even though there are specialized computer programs for solving decision-making tasks, they are usually designed for off-line decision-making support by the teacher – the final decision must be made by the teacher himself. However, if such programs are a part of on-line systems, their conclusions must be sophisticated and reliable enough.

Commonly used decision-making about a learning style by applying the method of mathematical numerical intervals does not correspond to the way of human thinking. For instance, close to the endpoints of the interval, the increase of the testing criterion (number of acquired points) by one distinguishing point results in the shift to the neighbouring learning style. However, human thinking corresponds to continuous transition, allowing, in a certain range of values, for the student's affiliation into two learning styles.

Modern IT methods allow for applying these approaches and tools in the scientific field called Artificial Intelligence. One of them is also the linguistic fuzzy-logic expert system presented in the paper, which was designed to determine the individual learning style of the student before he starts learning. This solution is distinguished by continuous evaluation of all categories of students by the degree from 0 to 1 with the possibility to simply determine both dominant and subdominant types, with the use of a linguistic rule-based decision-making model which is completely transparent and open, and with the use of a decision-making procedure corresponding to the process of human consideration (Fuzzy Modus Ponens).

Efficiency of the expert system was proved by numerical simulations. The expert system represents an autonomous module which will be incorporated as a component procedure into the automated teaching and learning system. Users of the automated expert system can be both teachers and university students, especially in

the part-time study. The expert system is an example of the application of modern information technologies in education.

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## When Parents and Teachers Assess Intellectual Giftedness of Preschool Children

### Abstract

The paper deals with the possibility of using a screening method for the assessment of intellectual giftedness at preschool age by two groups of persons – nursery teachers and parents. It presents The Characteristics of Giftedness Scale (CGS) for preschool children from Linda Silverman and its Czech translation that was verified from the aspect of parallel validity with a standardized IQ test. The CGS was filled in by experienced nursery teachers and by parents of preschool children and their assessments were analysed from the aspect of similarity and diversity. The results show that teacher assessment is closer to the IQ test results compared with parents who tend to overestimate their children. Eight items with low agreement between the two groups of respondents were identified and their expected sources discussed.

**Keywords:** *Characteristics of Giftedness Scale, preschool children, assessment of giftedness, parents, nursery teachers*

### Introduction

At present we can see a shift in the interest of both the professional community and wider public in the Czech Republic to the topic of giftedness. Many studies show that compared to other children, an extraordinarily gifted child has different manifestations and special needs, whose implementation is dependent, inter alia, on their identification (Hall & Skinner, 1980, Laznibatová, 2001, Portešová, 2009, Burešová et al, 2012). Therefore, if a potentially gifted child at pre-school age is to be

stimulated in an optimum way, it is essential to recognize his or her giftedness as early as possible. Experts confirm the importance of identifying extraordinary giftedness as early as at pre-school age, on the other hand, however, they point out disputable reliability of early prediction of extraordinary giftedness (Laznibatová, 2001).

The first adult assessors who usually nominate the child for objective assessment of his or her giftedness are parents and teachers. They are mainly the scales which have become a method frequently used abroad. They help to focus non-professional assessors' attention on typical manifestations in the behaviour of gifted children, which would never have been associated with giftedness otherwise. They make use of the experience of adults who have the opportunity to get to know the child in a variety of situations over a longer period of time. Individual items on such a scale are typically descriptions of manifestations of extraordinarily gifted children, which had been observed and verified through research.

Reliability of the prediction of giftedness, as mentioned above, is disputable with preschool children. It depends, among other things, on the assessor's observation skills and perceptiveness, which is also affected by his or her opinion on the child's behaviour. According to Winebrenner (2001) gifted children whose educational needs have not been recognised may manifest themselves in the educational process mainly through negative behaviour, such as: rejection of schoolwork, negligence in fulfilling tasks, nervousness due to the work pace of the class, which is too slow for them, daydreaming, a tendency to control class discussions, reluctant submission to and cooperation with others, looking for alternative activity in the form of clowning in class. Betts and Neihart (1988) also state that a gifted child may show a wide range of behaviour, and describe six types of manifestations of above-average giftedness in pre-school children: besides the successful and highly creative type of child, it is also the child who hides abilities in order to feel accepted by their peers, the 'dropout' child who demonstrates negativism when fulfilling tasks, as well as in his or her relationships with teachers and peers, the type of a handicapped child (so-called double-labelled) and the autonomous child who is independent and self-directed.

These findings, although concerning school-age children, show difficulty in identifying gifted children at an early age, and the importance of the assessors being well-informed. In our terms, people have minimum experience with using assessment scales for the identification of gifted children. A survey carried out in nursery schools in a part of Prague in 1991–1992 was a rare experiment (Hříbková, Charvátová, 1991, as cited in Hříbková, 2009).

Over the last few years, we have seen activity in the field of creation of behaviour scales for both school-age and pre-school children. In 2006 the Behaviour Scale for

Assessment of Pre-school Children was created for nursery school teachers under the supervision of Hříbková (2009). In 2009-2010 the Behaviour Assessment Scale for the 1<sup>st</sup> and 2<sup>nd</sup> Year Elementary School Children and the Behaviour Assessment Scale for the 3<sup>rd</sup> to 5<sup>th</sup> Year Elementary School Children were developed in the Institute of Pedagogical-Psychological Counselling, which are designed for teachers (Dotazníky a inventáře, 2013).

This study uses another, but similar, tool for research, its indisputable asset being its validity on a sample of over 1,000 gifted children. The aim was to use a sample of Czech pre-school children to verify parallel validity of the scale with the standardised IQ test (Study I) and to compare the level of concurrence in assessing pre-schoolers using this scale between parents, for whom the scale had been actually created, and nursery school teachers (Study II). Although it would have been useful to verify the ability of the scale to identify highly gifted children, for which purpose it had originally been created, due to the small representation of such children in the research file, and to the fact that identification has not been carried out yet, it was not possible to set such an objective within our research.

## **Research Methodology**

The Characteristics of Giftedness Scale (CGS) was developed in the Gifted Development Centre in Denver in 1973 by Linda Silverman. It contains 25 items capturing behavioural characteristics of the child, which contribute to early identification of an intellectually gifted one. The descriptors were selected to meet the following specific criteria: a) applicable to a wide age range; b) generalizable to children from different socioeconomic backgrounds; c) gender fair; d) easily observed in the home environment; e) brief and clearly worded for ease of interpretation by parents; f) research verifiable (Silverman, 1993). Each item is assessed on a four-level scale. The scale is of a screening method nature, and norms are not available, 75% agreement is considered a fulfilled criterion of giftedness, i.e. those children are nominated as gifted who possess at least  $\frac{3}{4}$  of the presented characteristics.

Validity of the scale was confirmed in a number of studies – intellectual giftedness was proved by intelligence tests in 84% out of over 1000 children nominated as gifted by their parents, another 11% of them showed above average and higher abilities in some areas only, while being weaker in some other ones, taking their overall IQ below the level of 120 points. Extraordinarily gifted children (IQ over 160 points) showed 80 to 90% of examined characteristics. The results prove high

reliability of the method. Due to its simplicity and universality, the method is considered suitable for application in the conditions of other countries (Pfeiffer, 2008).

The author of the method was asked to give her consent to use the method in the Czech environment, and then the method was translated from English by the method of double blind translation. Parts with discrepancies were discussed with an expert in the area of giftedness assessment (Characteristics of Giftedness Scale, 2013).

The first stage of the research – verifying the parallel validity of the CGS method and IQ test (Study I) was carried out at Sluníčko kindergarten in Hradec Králové. Complete research data were obtained from 56 children whose age at the time of the survey was between 5;6 and 6;6. Individual examination of intelligence was carried out by a psychologist using the WISC III method. Silverman's scale was completed both by the teachers and the children's parents. The assessors worked individually. Afterwards, individual interviews with the parents were carried out, focusing on commented results. At the second stage of the research (Study II), all nursery schools in the city of Hradec Králové were addressed, and 805 pre-school children were assessed by nursery school teachers using the CGS. The complete data were obtained from 335 pre-schoolers.

## **Results of Research**

### **Study I**

Four groups of data were obtained for each child: socio-demographic data (age, gender), intelligence test results, CGS filled in by kindergarten class teacher and CGS filled in by parents. From the WISC III we used the overall IQ result for the purpose of this paper. The results indicate that distribution of the sample corresponds with expected normal distribution of intelligence quotient in non-pathological population: the lowest IQ measured being 67, the highest measured IQ is 131, the mean score being 98.65, it is therefore possible to consider the research sample as representative in this regard. Descriptive statistical data for the CGS scale indicate normal data distribution in surveys completed by the teachers (minimum 25 points corresponds with the minimum achievable score, maximum number of points being 85 corresponding with the expected range of high giftedness, the mean of about 55 point is slightly lower than expected – half of the achievable score is 62.5 points), and a slight tendency towards higher figures in surveys filled in by the parents (minimum score 46, maximum 93 and mean almost 70 points).

The validity of the CGS method in the assessment of intellectual giftedness in preschool children was tested by the Pearson correlation between the CGS and the

IQ score obtained through the WISC III. The bivariate correlation coefficient in the assessment of the children carried out by the kindergarten teachers (CGS teacher) and WISC III,  $r=0.557$  ( $p<0.01$ ) indicates a significantly close relationship between the examined variables. The correlation between the assessment results provided by the parents (CGS parent) and WISC III,  $r=0.446$  ( $p<0.01$ ) also indicates a close relationship, which, however, remains within a moderate range ( $<0.5$ ).

## Study II

The concurrence in the assessment of intellectual giftedness in preschool children evaluated using the CGS method between the children's parents and teachers was tested by calculation of a paired t-test using variables CGS total scores obtained in the parents' and the kindergarten teachers' assessments. The resulting difference between the groups is statistically verifiable ( $t=13.19$ ,  $df=334$ ,  $p<0.001$ ). In general, the parents tend to overestimate their child compared to the teachers, by 10 points out of 100 point scale on average (cf., item 26, Table 1).

**Table 1.** CGS items: paired t-test (parents – teachers) and descriptive statistics (N=335)

Item	Variable name	M parent	M teacher	Mean diff.	SD	t	Sig.
1	Reasons well	3.28	2.81	.466	1.00	8.48	.000
2	Learns rapidly	3.01	2.71	.304	1.03	5.37	.000
3	Has extensive vocabulary	3.05	2.83	.215	1.04	3.75	.000
4	Has an excellent memory	3.10	2.67	.424	1.11	6.98	.000
5	Has a long attention span	2.46	2.59	-.131	1.15	-2.07	.039
6	Sensitive (feeling hurt easily)	2.99	2.41	.573	1.21	8.62	.000
7	Shows compassion	3.16	2.66	.501	.97	9.38	.000
8	Perfectionistic	2.08	1.85	.227	1.25	3.30	.001
9	Intense	2.30	1.88	.418	1.13	6.74	.000
10	Morally sensitive	2.81	2.60	.212	.97	3.98	.000
11	Has strong curiosity	3.03	2.28	.743	1.26	10.78	.000
12	Perseverant when interested	3.04	2.80	.236	1.16	3.70	.000
13	Has a high degree of energy	2.99	2.21	.770	1.19	11.81	.000
14	Prefers older companions / adults	1.87	1.74	.122	1.24	1.80	.072
15	Has a wide range of interests	2.65	2.18	.472	1.14	7.56	.000
16	Has a great sense of humour	2.72	2.02	.699	1.09	11.67	.000
17	Early or avid reader	2.15	1.68	.475	1.21	7.14	.000



Item	Variable name	M parent	M teacher	Mean diff.	SD	t	Sig.
18	Concerned with justice, fairness	2.68	2.48	.200	1.15	3.18	.002
19	Judgment mature for age at times	2.72	2.13	.597	1.19	9.16	.000
20	Is a keen observer	2.84	2.44	.397	1.16	6.25	.000
21	Has a vivid imagination	3.19	2.57	.618	1.15	9.77	.000
22	Is highly creative	2.87	2.23	.648	1.21	9.72	.000
23	Tends to question authority	1.80	1.30	.499	1.11	8.17	.000
24	Shows ability with numbers	2.60	2.28	.316	1.18	4.90	.000
25	Good at jigsaw puzzles	3.12	2.81	.310	1.09	5.19	.000
26	CGS sum score	68.49	58.18	10.310	14.30	13.19	.000

The paired t-test for individual questionnaire items shows statistically significant difference among all 25 items on the questionnaire (which is a predictable result for a data set of this size). The correlation analysis of individual characteristics showed that a statistically significant relationship, which we perceive as a demonstration of consentaneity between the assessors, can be found with items No. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 17, 19, 20, 22, 24 and 25. On the contrary, the lowest agreement can be seen with items No. 11, 12, 14, 15, 16, 18, 21 and 23.

## Discussion

The level of discrepancy revealed the total scores obtained from the teachers and the parents differ in means by 10 points, which may have different causes. First of all, different assessment of a child given by the teacher and the parent may result from **different understanding of the meaning of a given characteristic**. For instance, the meaning of the term perfectionist (item 8) – the teachers describe the term rather in the sense of tidiness, whereas the parents often relate it to the sense of detail observed in the products of the child's activities, such as drawing or Lego structures. Professionals perceive perfectionism as a general tendency towards setting higher goals and systematic effort to fulfil them. The key feature of this trait, as observed in gifted children, is appreciating quality, as Winebrenner et al. (2008) say it makes "the difference between the mediocre and the superior" (p. 52). Implicitly, however, the term is associated with negative connotation ("perfectionism means you can never fail, you always need approval, and if you come in second you are a loser").

Many differences in the assessment of the child on the assessment scale may result from **limited opportunity of the assessors to observe some of the characteristics in a given environment**, e.g. because the given environment does not provide enough space for them to be demonstrated. For instance, with item 15,

“Has a wide range of interests,” the parents are more likely to attribute a wide range of interests to their child because they are aware of a number of activities which the child does together with them or within different after-school clubs, the teachers, on the contrary, are often unable to assess this characteristic as the child very often does not get a chance to show his or her interests in class.

Differences may also arise from different ways of the child’s behaviour determined by the **different character of two different environments** – the preschool facility environment and the environment of the child’s home. The rules of coexistence in these two communities are naturally different as well as the dynamics of the groups, the coexistence takes place at different times (the child participates in the kindergarten life on weekdays, whereas in the home environment on weekday evenings and at weekends) and at different places (school classroom and garden, close surroundings of the kindergarten versus more rooms in a flat or a house, and usually a wider radius connected to shopping, after-school clubs, friends, leisure and other activities of the family). Environments may naturally give rise to different manifestations of behaviour (Talay-Ongan & Ap, 2005, Melhuish & Petrogiannis, 2006). The child, especially a gifted one, may behave in a different manner in the family environment where he or she usually has a maximum of one brother or sister, and enough free space to manifest him-/herself distinctively, and in another way under the conditions of kindergarten where, on the contrary, the child has to conform to the pace of other children and to existing rules. This may explain, for instance, different assessment of item 23 – a tendency towards questioning authority. In the home environment, the child may be provided with more space to express his or her own opinion and will even in relation to authority, whereas in the kindergarten the teachers mostly aim to build up their authority and are very sensitive to it being potentially questioned (Heffernan & Todd, 1960). The kindergarten environment mostly applies the old model of traditional authority (Omer, 2010), whereas the home environment in the Czech society of the 21<sup>st</sup> century uses a variety of authority models (Gillernová et al., 2011).

When taking into account the expectations in the context of talent, an educated and well-informed parent can, for instance, seek, welcome, support and develop extraordinary curiosity in the gifted child, while a uninformed parent or a parent with other preferences may find the child’s curiosity annoying. Also, among teachers the awareness of problems concerning gifted children, and their ability to lead children with different education needs in one group may vary a lot (Kotková, 2011).

Last but not least, different assessment of the child may also result from **differences in produced behaviour on the part of adult assessors**. For example – in the

scale it is item 11. It is typically manifested through asking questions. It was found that the Czech school provides pupils with minimum space for asking questions (Havigerová, Juklová, 2011).

The study explores the issue of screening giftedness at pre-school age. Although its results appear clear at first sight, it is necessary to take into account some limitations of the study. The first one of them is the choice of the method for screening giftedness – the CGS which was used for our study is originally a) designed for parents b) of potentially extraordinarily gifted children and c) from the age of 3 years. In our study the CGS scale was used *for a population restricted only to pre-school age children*. This criterion was designed in accordance with the whole research strategy, including its proposed application level: from the pedagogical-psychological point of view it is very convenient to have gifted children identified before they start elementary school. In addition, narrowing the file to one age category allows more indisputable generalisation, from the methodological point of view, it is therefore a convenient choice. We used the scale *for the whole population of pre-school age children*. We tried to find out whether it is possible to extend the application of the scale to roughly assess the level of cognitive giftedness, or intelligence in the whole of its range, although it is not the primary purpose. The resulting correlation coefficient confirmed our assumption. The Scale was *used not only for parents – non-professional assessors, but also for nursery school teachers, i.e. professionally trained assessors from a slightly different environment*.

An obvious limitation is the method for measuring the level of cognitive giftedness – only one intelligence test was used, which has not been even normalized for population below six years of age. WISC III test was used because it is still commonly used for these purposes in P-P counselling centres (some of our children had already been identified as gifted through this method in the P-P counselling centres). It was our intention to maintain criterion consistency, therefore we used the same test also for other children, while being aware of inaccuracy in measuring younger children.

## **Conclusions**

Assessing giftedness at preschool age is an important component in systematising the care of gifted children. The most common and also the most appropriate assessors of giftedness in children of this age are their parents and teachers. It is an advantage if these assessors have an instrument at their disposal which may help to make the nomination of giftedness more precise. The research we carried

out suggests that the CGS is a method which can be used to roughly assess the intellectual level of giftedness in pre-school children in our terms. Although the method, originally devised to identify extraordinarily gifted children, was verified on a file of children with average IQ, the results show a great extent of concurrence with the IQ test.

Despite a high level of concurrence in assessment provided by both groups (nursery school teachers and parents) with the outside criterion, in some items assessment by the teachers differs from that provided by the parents. The fact that the teachers display higher concurrence with the IQ test may be attributed to several factors, the most important one of them being the possibility to compare the child with his or her peers, the lack of tendency to project one's own ambitions in the child, which is typical of parents, and also the teachers' higher awareness of the issue of extraordinary giftedness. Especially the last factor is gratifying in the light of practice and future of extraordinarily gifted children education. With regard to the limitations of our completed studies, resulting mainly from the above-mentioned characteristics of the research file of children, this is, however, only an assumption which should be verified through future research.

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## **The Situation of Gifted Students in the Polish Education System**

### **Abstract**

The author presents results of triangulated qualitative and quantitative research concerning institutional and individual support for gifted students' development in Polish schools. The research study was conducted in three stages: case studies of schools, a survey of teachers' perceptions and educational biographies transcribed from interviews of gifted and talented students. Conclusions are presented in the form of a model of educational support of gifted students' development and recommendations concerning the planning and implementation of this support are proposed.

**Keywords:** *education of the gifted, supporting gifted pupils' development, triangulated research*

### **Introduction**

This paper is derived from a study published in 2012 (Dyrda, 2012). Since the 1970s, there has been increased interest in educational support for individuals endowed with additional capabilities in the form of outstanding abilities and talents. This social demand for realising and using the potential of especially gifted people is a consequence of technological change and progress, as well as urbanisation, modernisation and globalisation in which the role of gifted individuals in shaping post-modern societies has been increasingly stressed. Human potential, abilities and talents significantly predict how a person will develop, function and achieve goals in every area of his or her activity. Educational performance, profes-

sional careers and even success in personal life are determined by individual and environmental factors, inseparably connected with individual differences in abilities and talents. However, a human being's potential has to meet with a favourable social response, because even the most promising 'diamonds' turn to ashes without an educational or professional environment that is stimulating and supportive. Supporting especially talented and gifted individuals' development has important social and political dimensions; it can be linked to recent concepts of managing talents, 'the creative class' (Florida 2010), social group and political party interests and to cultural phenomena. In the long term, investment in the effective education of gifted individuals brings notable benefits in the form of faster scientific and cultural development, or outstanding achievements in the fields of art or sport.

School environments clearly have a major impact on the realising of human potential. Observations of educational practice and scientific research suggest that countless children start school as talented, creative and inventive individuals only to lose this potential after a few years. It is popularly believed that school, instead of discovering talents, kills them regardless of slogans, such as 'the year of discovering talents', which was the catch-phrase for the 2010/2011 school year announced by the Polish Ministry of Education. School, in the experiences and memories of many pupils, students, adults and parents – instead of nurturing diversity, uniqueness and 'otherness' – appears to make them average, common and encourages them to adapt to the norms of the majority. According to one parent of a gifted student, some schools exploit gifted students for the benefit of the school's reputation, not offering anything in return. This perception aptly conveys the negative views of many of the teacher and student respondents about the public evaluation of the role of the school.

Poland's recent results of the PISA study indicated that from 2006 and 2009 the number of students achieving the best results, e.g., in the 'ability to read and interpret' category decreased from 15.8% in 2006 to 9.1%. This indicator may suggest that there is a '*problem of elites*'. The general average scores declined less than those for students of higher academic ability.

## **Methodology**

In this research educational support of the development of gifted student was understood as exerting intentional and unintentional influence, through teaching activities that enhance their abilities and results. These activities promote factors

that both stimulate and facilitate this development as well as suppressing those factors that threaten its development.

The following areas of support of gifted students' development were distinguished:

1. Institutional planned and implemented educational support specifically for gifted students' development;
2. Educational activities of teachers and school counsellors;
3. Activities in the family environment to stimulate the development of the child's abilities;
4. Extracurricular activities undertaken by students to support the development of their abilities and character;
5. Individual social and psychological experiences, planned and unplanned, in school that supported their development
6. Students' personal actions associated with self-improvement and developing their abilities.

The theoretical categories and research areas adopted in the study are based on a social constructivist perspective as is the logic and structure of the chapters of the resulting full report of the research (Dyrda, 2012). Gifted students, the basic subject of the research study, were studied at both social (including institutional) and individual levels. The research was carried out between 2008 and 2010 and employed triangulation, combining qualitative and quantitative approaches. It was implemented at three basic stages:

1. case study research (carried out in selected schools in the Silesian Region, whose work with the gifted student was studied),
2. survey research (carried out among teachers),
3. biographical research (focusing on gifted students' educational experiences).

The main cognitive value of the research is that of illuminating the complexity of the significant factors that determine and influence the support of gifted students' development.

The design of the research study draws on theories, sources and methods of triangulation (Denzin, cited in: Dróźka 2010, Flick 2011) and involves both quantitative and qualitative methods. It involved a standardised research survey with random sampling, a collective case study, as well as biographical case studies. The three basic stages featured both qualitative and quantitative methods. At the second stage of the research they were combined.

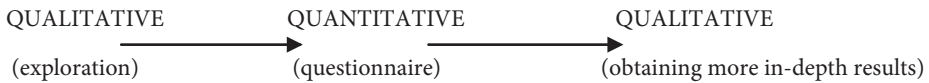


**Diagram 1.** Systematic factors employed in the empirical research into the educational support of gifted students' development

How to support?	Who to support?	For what purpose?	When to support?	Who is to support?	In what way?	With what result?
Educational support of development	Gifted students	Proper recognition of potential Development of abilities and talents	Social level	Family	Upbringing, Direction, Early identification, Support of adequate self-assessment	Identification/awareness
				School, teacher/class tutor	Education, Appropriate educational and didactic influence, Diagnosing, Pedagogical and psychological help,	Fulfilling developmental potential
			Group level	Peer group	Nominations, Help, Support, Positive interpersonal relations, Motivating	Direction regarding further development
			Stages of education	Non-school institutions coaches/mentors	Stimulating development, Formulating developmental objectives, Mentoring	Motivation Commitment Deliberate practice
				Own activity, student on his/her own, role of authorities	Self-education Motivation and commitment Planning own development Self-assessment, Self-awareness of potential, Deliberate practice, Self-motivation	Self-actualisation <sup>1</sup> Satisfaction Feeling of fulfilment

<sup>1</sup> It should be stressed here that the notion of self-actualisation was treated as identical to the notions of self-shaping, self-creation, and self-improvement. Such an assumption was made on the basis of M. Dudzikowa's work (1993, 2007).  
Source: (Dyrda, 2012)

**Diagram 2.** Research project integrating qualitative and quantitative methods



Source: (Miles and Huberman 2000, p. 43 as cited in: Flick 2011, p. 157)

To summarise the results of the study, the author constructed a model to illustrate the interrelated factors that constitute educational support of gifted students' development.

## Research results

Family, school, peer group as well as self-educational activity play an extraordinary role in the individual's development. These influences overlap with the individual's age-related needs and the expectations from the wider social and cultural environment in which he or she functions.

The school case studies research conducted at the first stage led to polarised conclusions arising from document analysis, on the one hand, and interviews on the other hand. The documents outlined a number of activities undertaken at schools with respect to students showing additional potential. However, interviews carried out with school counsellors revealed many imperfections and tensions in the school environment in the area of work with the gifted student. Most visible were tensions regarding obligations and habits as well as tensions between collective and individual experience. Statements made by the interviewees indicated that the 'ostensible actions' recorded in the documents often contrasted with numerous examples of inappropriate or even negative situations that occur at school. They included:

- incorrect methods used by teachers in communication with gifted students,
- ineffective methods of the organisation of the process of education
- lack of multi-level coordinated action (coordinating collaboration between parents, the class tutor, the school counsellor and the student)

The research also indicated that collaboration between school and psychological and counselling centres was problematic, or only minimally fulfilled the requirements of educational law. One can therefore conclude that many actions undertaken in schools with respect to gifted students in practice contradict the aims stated in policy documents. This conclusion was particularly evident in the results

of the survey research, relating to schools' provision of extracurricular activities for the gifted. These activities are dominated by activity clubs, whose essential purpose is not to develop the most gifted students, but to compensate for the gaps in the education of average and poor students. The narratives of the counsellors who participated in the study and the results of the analyses of the second stage of the research (the survey) proved that the proper process of identification of students' abilities and talents is not undertaken at school. Procedures for diagnosing the potential of students were not in place in any of the schools examined. Recognising the abilities and talents of gifted students was based solely on intuition or even, more often, on teachers' stereotypes associated with the prevailing theories of the gifted student. The survey research showed that these theories are dominated by the stereotypical perception of the gifted student based on characteristics associated mostly with the intellect, the cognitive sphere, learning and knowledge as well as high academic achievement. The survey research also exposed the problem of teachers referring to the collective responsibility of school in this area, while simultaneously failing to perceive their own errors or gaps in their competences.

The research carried out at the first and second stages revealed significant problems in the schools connected with inappropriate collaboration with the gifted student's family. This seems especially serious in the case of the students coming from family environments characterised by neglect or the threat of marginalisation.

The analyses of the biographical research, based on transcriptions of the narratives of gifted individuals, made distinctions between subjective and situational, as well as social and cultural factors determining support of gifted students' development. The subjective intrapersonal factors included: personal competences, self-assessment, self-knowledge, ability to cope with failure and ability to plan or manage one's own development. The analysed narrative passages from the gifted individuals' educational biographies revealed that positive influences coming from different environments are important conditions for the development of one's potential. During the research, situational and socio-cultural factors that promote development were stressed by the subjects. They included the atmosphere of the family home; parental attitude; the first, early-school educational experiences; significant people (coaches, teachers); significant educational events; and the atmosphere in the respondent's peer group. These factors occurred at social, institutional, group, peer and individual levels. During the third stage of the research, the author managed to capture the role of developmental crises connected with setbacks and failures. Such experiences involved strong, negative emotions relating to the students' abilities. If further development was to follow, it turned out to be important whether and how an individual coped with experiencing these crises.

It appeared to be important to gain new competence in the reduction or elimination of these tensions. The results also showed the role and the indispensability of the “10-year rule” (10,000 hours of practice in the area of talent). Systematic practice and hard work are factors determining the development of abilities. The behavioural patterns found in the transcribed narratives revealed that the actions and activity of individuals in a given area of special talent were the key category in the model of their support. A significant majority of the subjects participated in various forms of additional, non-school stimulation of their talents. This was particularly noticeable in the individuals with talents related to sport, music, visual arts and dancing. Development of abilities requires a capacity to self-assess one’s potential and then to consciously select and take actions leading to the achievement of one’s goals. The biographies testified that skills in organising their own work, time management, self-monitoring of progress and activities, in addition to collaboration with experts (coaches, eminent teachers) enhanced the education, abilities, talents and interests of the subjects. The transcripts showed how important these factors were for the development of the students and adolescents in the study. They also showed that the most significant role is played not only by these factors, but by the significance that the respondents attribute to these factors.

The research offers conclusions about how to increase the effectiveness of work with gifted students in Polish schools. To be significantly successful, activities have to be undertaken in a well-thought-out and planned way. A model of educational support for the development of gifted students is shown in Figure 3. It systematically sets out the research findings about the range of factors that have to be taken into account in the planning of support. Four significant stages in planning changes should be taken into consideration:

- initiation;
- implementation;
- supervision;
- appropriate resources.

The initiation stage includes preparing plans of specific, practical and systematic activities associated with supporting gifted students’ development. The implementation stage should include identifying abilities and talents properly, preparing suitable syllabuses, using appropriately prepared and competent teachers, who employ teaching methods and materials to stimulate the development of abilities and talents.

The analysis of standards regarding the education, preparation and competences of teachers working with gifted students allows us to make three basic recommendations in this area. Firstly, these teachers should understand basic problems

associated with defining and identifying gifted students and have theoretical knowledge in this field. Secondly, teachers should recognise differences and norms associated with gifted students' learning styles, their specific developmental characteristics and personalities. They should be able to identify specific educational needs of these students connected with these norms. Thirdly, gifted students' teachers should understand, plan and apply diverse teaching strategies, achievement evaluation, and support of gifted students' development. The system of supervision should be based on the activities associated with educational and legislative policies, proper administration and management of schools and the efficiently operating system of counselling as well as psychological and pedagogic care over gifted students and their parents.

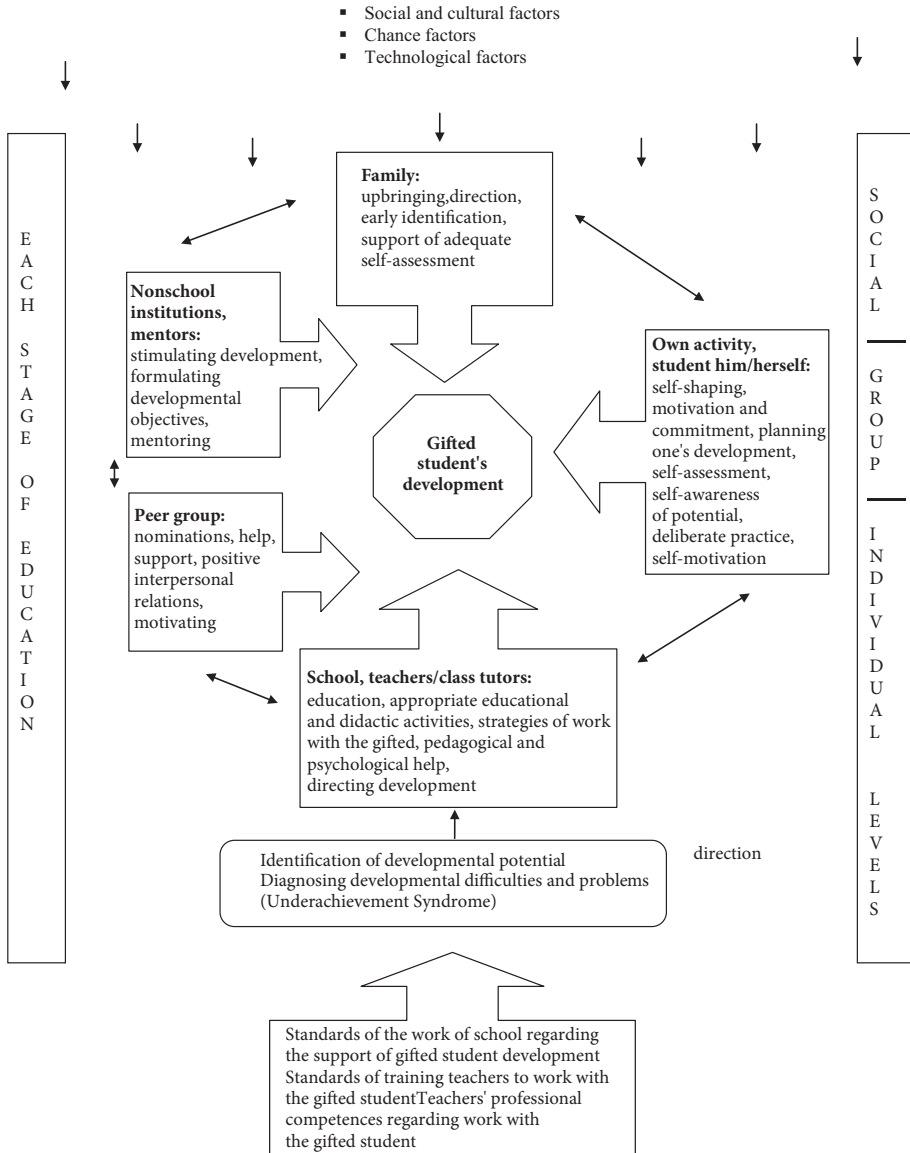
Standards of measuring the quality of work with gifted students used in the world suggest the significant role of the philosophy of quality management. Schools themselves can operate a system for diagnosing students' predispositions and interests and curricula that can be adapted to students' individual capabilities and interests. Methods of achievement evaluation should be acceptable to students and should incorporate self-assessment. And, of course, educational and vocational counselling must be available. Family and community support for educational activities for the gifted are required. Finally, additional resources for support and enrichment can be provided in the form of the activities of different private organisations, associations, local social initiatives; the organisation of summer courses, schools for gifted students; appropriate extracurricular activities; the system of counselling and support for gifted students' families; publishing magazines; organising meetings, conferences devoted to the issues of educating gifted students; collaboration with higher education institutions.

The results of the third stage of the author's research indicate that non-school educational institutions, which have had a number of financial difficulties in Poland in recent years, play a highly significant role in supporting gifted students. In the narratives of the gifted students participating in the study, they are often identified as the only places where their abilities and talents develop.

## **Conclusion:**

The model summarising the factors relating to the educational support of the gifted student's development is presented in the following diagram. It is based on the analysis of data from two sources:

Diagram 3. A model of educational support of gifted students' development



Source: (Dyrda, 2012)

- the systematic recapitulation of the results of empirical research described in both the Polish and foreign literature on the education of gifted students, broadly defined, in selected education systems;
- new data collected in Poland about the effective functioning of support for gifted students.

It is anticipated that this synthesis of factors contributing to the support of gifted students' development could be of value in planning and implementation of a new and fuller reform strategy for enhancing human capital as well as the education of talented individuals in Poland in the future.

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## Theoretic Principles of the Adaptive Teaching Process

### Abstract

The article describes a new form of e-learning – adaptive e-learning. The theory of this form is based on a series of pedagogical-psychological rules which are aimed at the technical possibilities of today’s IT. The very basics of adaptive e-learning is comprised of the student’s learning style and a group of algorithms which will assign a suitable study material to the student according to his/her learning style. This whole process is automatized and secured by a virtual teacher – control manager. Its functions will be described in detail in this article.

**Keywords:** *individualization, adaptive teaching process, e-learning environment, adaptive study aids.*

### Introduction

It is known from the classic teaching that some school students might be hindered by and bored with collective teaching. Other ones, on the other hand, might find it too fast so, as a result, they might not be able to understand everything. Other students are satisfied with the teaching pace, but may not be satisfied with the teaching style of a particular teacher. Consequently, such students dislike some teachers and courses and their academic achievement might become worse (Vališov, Kracıkov, 2011).

Those reasons lead to the idea of the optimization of the learning process through the individualization of teaching. The individualization of teaching mirrors the already gained knowledge, skills, and learning style in the learning process of each student. Such a method cannot be applied in typical face-to-face classes where the student cannot be treated individually. The teacher can adjust their teaching style



to suit the majority of the students in the class. However, the teacher cannot adjust teaching to suit every student in the class individually.

In the information age, the Internet, or suitable SW and HW instruments, it is no problem to implement the use of computers for teaching, especially through e-learning. E-learning is most frequently done through the LMS (Learning Management System). In the current frequently used LMS the student's role is passive, hardly ever active. The student often does not have a chance to influence the study process which he/she is part of. In the literature there are several recommendations, rules, and theories that are aimed at better and easier learning. Those generalizations, however, suppress the individuality of particular students. The used theories are in many cases based only on the student's already gained knowledge and do not pay attention to his/her individual learning needs that could help him/her understand particular information in a more effective way.

By connecting e-learning with the requirements of the personalized teaching we come to the term automatic adaptive e-learning. We asked ourselves a question if the procedure of automatic adaptive e-learning can be modeled (i.e. passing an e-study course which suits the student's preferences and his/her learning style). The best adaptive way to do it will be by respecting the differences among students based on the observed learning style and with attention paid to the student's changing knowledge and skills throughout the course. The students will be provided with the study material that should suit their needs best. The material will be based on the identification of the personal characteristics and qualities.

We think that teaching prepared to suit the student's needs and preferences with the emphasis on the positive aspects of learning will become the best and most effective teaching method. It will help in achieving easier and more permanent learning and storing of knowledge. Our goal is to create a user friendly e-learning environment, which will be adapted to the user according to the given learning preferences.

## **1. Pedagogical- Didactic Solutions for Adaptive Teaching**

Many pedagogical-didactic principles, rules and theories were used as **theoretical solutions** while formulating the theory of adaptive teaching. These include:

- Komenský's approach to teaching
- Gagné's approach of eventful teaching
- Bloom's taxonomy of education aims
- Skinner's theory of programmed learning

To achieve a successful and effective learning process it is necessary to follow the basic principles coined by J.A. Komenský (1947, 1948) – orderliness and steadiness, gradual explanation, appropriateness and permanency of knowledge and skills. The teaching process can be understood as the succession of elementary steps in learning to which there is a defined order (Gagné, 1975). The sequence of events should have the following order – attracting attention, formulating aims, drawing on previous knowledge, presenting new information, guiding and encouraging students, giving feedback, rating the student's performance and ensuring storing of acquired information. The hierarchy of the particular activities, through which the student goes throughout the learning process and which are graded by difficulty, comprehensiveness, and requirements of the studied material, was created by D. Bloom (Tollingerová, 1977). There are six most frequently mentioned degrees of knowledge – remember, understand, apply, analyze, synthesize, and rate information.

With regard to the environment in which teaching should take place, principles reflecting the theory of programmed learning (Tollingerová, 1977) and the basics of adaptive hypermedia systems have been added to those pedagogical principles. The fundamental idea has been taken from the theory of programmed learning: dividing information into smaller units, verifying these smaller units and the reaction of the education system to the student's understanding of the subject matter. The programmed learning deals only with the reaction of the system to the student's correct or incorrect answers. By branching the teaching process into different ways, the author – teacher himself controls (programs) teaching.

The observation of the student (we will mention the recording of the teaching process below) and feedback realization is taken from the idea of the adaptive hypermedia systems (AHS) (Brusilovský, 2001, 2005), which are based on the reaction to the user's retrospective behavior and movement in the system. Out of several kinds of adaptation (Kostolányová, 2012), the model discussed in this article deals with the adaptation of the teaching content – particularly with the adaptation of the study material according to the students' individual needs.

Today the use of the electronic environment for teaching is natural. The above-mentioned basic ideas enhanced by a new form, i.e. adaptive teaching, will be implemented in this exact form of teaching environment – adaptive e-learning environment. We can look at the student who learns with the use of the computer as an individual and subsequently prepare teaching according to his/her individual qualities. This cannot be achieved in the typical class with typical face-to-face teaching. Finally, the proposed adaptive system should secure and enable an individual and personalized way of teaching of any number of students according to their individual qualities and knowledge.

## **2. Practical Solution**

Practically, the problem of **formulation of adaptive teaching** was divided into three tasks:

- Determining and diagnosing the student's learning characteristics,
- Structuralizing teaching aids, creating the methodology for the elaboration of adaptive teaching aids,
- Proposing adaptive algorithms for forming the best personalized teaching.

When formulating the theory of adaptive teaching, those three parts were further divided into problems that are gradually being dealt with:

Problem 1: To be able to react to the student's various learning characteristics, the teaching control manager must have the information about the student that has an impact on his/her learning process. What is this information?

Problem 2: How to acquire information about the student's learning characteristics?

Problem 3: What must the teaching aid be like if it is to be adapted to the student's learning characteristics?

Problem 4: How should the (virtual) teacher teach a student of a particular type?

## **3. The Student's Learning Style**

The question of learning styles, their detailed background research, analyses and evaluation of pilot questionnaires, was published in Kostolányová, Takács, Šarmanová (2011a). To ensure the complexity of the view of the methodology of adaptive teaching preparation, only the findings of detailed analyses will be mentioned here.

The main person of the adaptive teaching model is the student, for whose education the entire system is being created. In order to secure that the system can react individually to the student's current knowledge and learning characteristics, we need to have a lot of information about the student. These qualities need to be stored in a student database.

A detailed analysis of the pedagogical-psychological literature on learning styles has proved that no classification of learning styles reflecting the student's characteristics that could have an impact on his/her learning style has been made yet. The following group of the observed qualities is the result of our research and analyses (Kostolányová, 2012):

*sensory perception* – sensory variants: verbal, visual, auditory, or kinaesthetic

*social aspects* – the student studies alone – in a pair – in a team

*affective aspects* – motivation for studying

*learning tactics* – orderliness, the way of information processing, conception of the subject matter, learning process

*self-regulation* – the student acts on advice – by him/herself

*success of ongoing studies* – is connected to continual testing and filing of the student's academic achievement.

This solved problem 1 – the information impacting on the learning process has been determined. To secure solving of problem 2 – to find out the student's individual characteristics, a questionnaire was designed (after a not too successful attempt to use the already existing questionnaires by various authors) to suit these characteristics.

#### **4. Adaptive Teaching Aid Structure**

Another task (Problem 3), which was being solved and became part of the theoretical basis for adaptive teaching modeling, is the suggestion of the teaching aids structure (Kostolányová, Takács, Šarmanová, 2011b). The following considerations led to the suggestion of the solution.

The common way of the textbook division into chapters and subchapters was used when dividing the teaching aid. Considering the possibilities of the adaptability of the teaching material and formulating the methodology for creating these adaptive study materials, we were inspired by the methodology of creating distance study materials, the principles of programmed learning and the above-mentioned principles of the pedagogues like Komenský, Gagné, and others.

To be able to adapt to students various personalities, the teaching control manager (virtual teacher) must have the subject matter processed in many different ways. The subject matter must be in a structured form – the subject is divided into chapters, subchapters, and paragraphs. The smallest compact part that presents a unit of information is called a **frame**. Objectively, the frame corresponds, for instance, to a newly established term (term definition, term explanation, application, example verifying testing questions and tasks). On a formal level, the frame usually corresponds to the lowest level of numbered or in other way marked paragraphs in the text or on the internet site, including particular multimedia components (Kostolányová, Takács, Šarmanová, 2011a).

In terms of the different forms of sensory perception, the frame needs to be elaborated in 4 **sensory variants** (verbal, visual, auditory, and kinaesthetic). In

terms of the student's understanding or his/her success in the continual questions, we suggested that 3 other explanation variants, which differ in the amount of details, be used. We call the three mentioned levels the **depth** of explanation. As there are 3 variants for each of the sensory forms, there can be as many as 12 explanation variants for one frame. By so doing we reacted to the first four sensory forms and to the last characteristics – the success of the student's learning style.

It is clear that we cannot go on “reproducing” the variants for the remaining 9 characteristics. Carrying out the adaptation of the frame explanation style will enable us to divide the frame into two parts – **layers**. The layer of the frame is a part of it that is homogenous in terms of the teaching process phases (theory explanation, fixation, knowledge testing, motivation, teaching process controlling) (Kostolányová, Takács, Šarmanová, 2010).

We suggested the following types of layers:

- *Explanatory* – a group of layers that contains the explanation of the subject matter itself (theoretical layer), explanatory layer (semantic), revision (fixation layer), layers of the solved school and practice examples.
- *Testing* – a group of layers for the continual testing of acquired knowledge. It is made of questions, school tasks, and practice tasks.
- *Other* – aims, motivation layer, navigation layer, and literature layer.

We will react to the values of the other chosen learning style qualities by combining the order of particular layers in a different way. The suggested structure of the adaptive study material is a solution to the following problem: What must the teaching aid be like if it is to be adapted to the (learning) type of the student? (Kostolányová, 2011).

## **5. Virtual Teacher, Personalized Teaching Process Controlling**

We are familiar with the set of the student's qualities that characterize his/her learning style. We know how to find out their values and thus determine the student's learning style. We have teaching aids at our disposal that are able to adapt in an arbitrary way according to the student's needs. We have to solve another and the most important problem: *How should the (virtual) teacher teach a student of a particular type?* (problem 4).

The teaching process controlling is very demanding. Moreover, the author and the teacher cannot see it. It will be the student to whom the subject matter will be explained in a different way from other students. We call the control manager,

which compiles the teaching process and tests its understanding, a **virtual teacher**. Gradually, this virtual teacher has to do the following tasks for every student:

1. It determines the student's **learning style (LS)** – the characteristics that influence his/her learning process – for each logged in student.
2. It determines the student's **personal education style (PES)** – a process that suits the particular student the most – for his/her learning style. An ideal personal education style does not have to be valid for every real frame of the teaching aid to the same degree. There do not have to be certain variants in the actual lesson. Some frames do not have to use all types of layers.
3. It applies the PES to the actual lesson, i.e. determines the **actual education style (AES)** of the lesson.
4. Knowing the ideal plan of the AES lesson process, the virtual teacher controls the teaching process, i.e. it offers the student frames and layers, depths and sensory forms that were chosen from those frames.
5. Another problem the virtual teacher has to deal with is **controlling the reaction of the system to the student's incorrect answers**. If the student answers the questions correctly, it follows the pattern of the actual education style. However, if the student answers incorrectly, a suitable solution must be found in accordance with the context of the actual situation.
6. Education process recording.

### 5.1. Adaptive rules formal structure

To determine the ideal learning style for every student means to choose the most suitable sensory variant and to determine the ideal sequence of types of layers and depth for every (theoretically complete – having all types of layers) frame. This variant (together with the sequence of layers in it) will be used for every lesson frame.

The student's personal sensory variant is defined with respect to the most visible type of sensory perception:

**OStForm = maximum value form of (Sver, Sviz, Saud, Skin)**

For the remaining characteristics we formulate elementary rules of the universal shape:

**If the student has the qualities Q1=a and Q2=b at the same time, use the X, Y, Z... sequence of types of layers and depth**

Where

X, Y, Z... are particular layers (theoretical, semantic...)

Q1, Q2... are learning style characteristics (motivation, self-regulation...)

a, b, ... are values of the given characteristics

The rules assigning the sequence and depth of a layer are expert rules set by an

expert – pedagogue and adaptive teaching expert. There are many of such “elementary” rules – for every value of every quality or for some of its combinations.

## 5.2. Content of adaptive teaching pedagogical rules

The content of the rules is the most demanding part of the entire theory of adaptive teaching. It cannot be expected that the rules will be defined in the best way from the very beginning. They will have to be gradually modified, based on the results of further research.

Formulation of some rules:

- Basic depth-variant is 2. If the student has the Success quality = 3, then, when dealing with the explanatory and testing layers, depth 2 must be used first and depth 3 next. If the student has the Success quality = 1, then, when dealing with the explanatory and testing layers, depth 2 must be used first and depth 1 next.
- If the student has the Conception quality = 75 (depth type), then depths 2 and 3 must be used in the order determined by other rules.
- If the student has the Motivation quality = 75 (very motivated), then insert the depth 1 motivation layer; if it is not present, leave it out completely.
- If the student has the Self-regulation quality = -50 (very dependent), then insert the depth 3 navigation layer (list of the detailed pedagogical study advice).
- If the student has both the Theoretician quality = 25 and the Experimentalist quality = 75 (practical type), then use the following order of the layers: S (semantic), P (practical), F (fixative), U (tasks), X (practice tasks), T (theory), Q (control questions). In other words – first, explain the new subject matter and give examples. Then verify its use. Then describe the theory and verify the knowledge of it.
- etc.

The formulation of these basic rules has been suggested with regard to the pedagogical experience of the experts. They are not always supported by a pedagogical or psychological theory. However, they represent the foundation for the creation and formulation of other rules which will be based on gradual analyses, teaching evaluation and by continual testing mechanisms. The rules will contain the defined principles and conditions of a **good teaching style**, which should make even the students with incorrect study habits use more appropriate learning methods offered to them.

We can see that there are several types of rules with regard to their use in the entire sequence of layers. Some rules have to carry the information that some layer should be placed before or after other listed layers. Other rules, on the other hand, only have the explicitly stated sequence of layers. In some cases only the

depth needs to be determined for the rule, regardless of the sequence of layers. Another type of a rule is used for noting the sequence of layers in the case of a multilayer. Some rules have to be applied before other rules; the sequence has to be determined. Finally, some rules define the creation of the entire lesson pre-frame or post-frame with the recommended content.

To be able to distinguish these types, other parameters are being added to the rules. These will not be listed here as they represent a technical solution to the formulation of the rules and their subsequent use in the PES construction algorithm.

### 5.3. The student's personal education style

From the elementary rules the specially developed expert algorithm will compile a complete sequence of layers with its depth for a particular student.

#### Algorithm for the creation of a personal education style:

1. Determine the student's personal OStForm sensory variant as a form with the maximum value out of the four sensory variants (Sver – verbal perception, Sviz – visual perception, Saud – auditory perception, Skin – kinaesthetic perception).
2. For every examined student quality
  - a. find its closest virtual value that can be found in the elementary rules  $LS \rightarrow PES$ ,
  - b. find all the rules with the same quality value on the left side.
3. If there is an order to create pre-frame or post-frame in the actual rules, compile it by using the recommended rules.
4. Connect the found rules and compile the layer type order of the recommended depths.
  - a. choose the rules that define the initial layers and place them, together with the depth, at the beginning,
  - b. choose the rules that define the end layers and place them, together with the depth, at the end,
  - c. choose the rules that only define the order of the layers and place them, in a given order, between the initial and end layers,
  - d. in such layers where the preceding rules did not preset the depth, set it to level 2.
5. Define the personal education style of the actual PES student.

### 5.4. The student's actual education style

The compiled personal education style does not always have to be exercisable without changes. It is because there is the supposed existence of all variants and



all layers in every frame. That does not have to be true. The author of the aid can use only a limited list of layers in every frame. That is done in accordance with the teaching content of the frame. Therefore, before the start of teaching itself, the second step is the application of the PES to the chosen lesson. This results in the actual lesson learning style of a particular AES student.

The algorithm for determining the AES compares the structure of every chosen PES lesson frame. If any of the layer types of the required depth or sensory form is missing, it will use another available layer of the same type and of the closest depth and form. If the rule explicitly states that it should be left out if a given layer is missing, it is left out from the sequence. This fact results in the same sequence as in the PES, but this time repeatedly itemized for every frame of the actual lesson.

### **5.5. Teaching process controlled by virtual teacher**

The basic task of the virtual teacher is to control the teaching process. That means offering students a given lesson, its sequence of frames and layers in the accounted order – according to the AES plan. If the student accepts the sequence determined by the system and answers the possible questions correctly, he/she follows the plan.

The following incidental situations can occur:

- The student finds any of the explained variants unsatisfactory (or he/she is only curious about another variant explanation) and chooses another variant. He/she can choose only the “neighboring” variants, i.e. to change the depth of the actual layer or to change the sensory variant of the actual layer. After he/she learns about it, the system returns the student to the initial layer of the actual variant. The student continues following the plan or he/she can choose another unplanned variant.
- The student chooses another frame, although the actual frame has not been finished. The system then “starts” passing through this frame; again according to the planned AES. If the student terminates passing through the lesson, the system will note which frames he/she already went through. If this is the way the student chooses the frame he/she has already visited, the system will continue teaching from the very point that the student left the frame at the last time.
- The student follows the plan, but he/she answers some of the test layers (question or task) incorrectly. In such a case the system activates the controlling algorithm that solves such a situation.

## **Conclusion**

When creating the adaptive e-learning environment, the described theory is being gradually applied and tested. For this kind of teaching the LMS BARBORKA controlling system is being developed. The last of the virtual teacher's functions is recording of the entire teaching process. It records the student's every "click", the time spent on particular layers, not following the actions offered by the system, accuracy of answers, etc. The record is used for analyzing several types on a long-term basis: verification of the setting accuracy of the student's characteristics, verification of the appropriateness of the teaching aids as well as the verification of the accuracy of the virtual teacher expert rules.

As mentioned above, after collecting a large data sample in the adaptive teaching record, to be able to analyze the feedback we will use a series of mathematical statistical methods and methods of gaining knowledge from data. Research on this field has already started, but the already obtained results are not sufficiently reliable due to the low extent of the data. Next, we will focus on the research into the used methods as well as the interpretation of the analyzed results. At the same time, modeling of the adaptive teaching process through the virtual student (with all the combinations of the learning style qualities being defined) and virtual study materials (described by the metadata) is being carried out.

The modeling device is being implemented in the existing adaptive LMS. Before the teaching process starts, the modeling device verifies the accuracy of the elementary rules formulation and debugs the algorithms for their integration into the resulting personal learning style, i.e. the sequence and its depths.

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**Pedeutology**



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## Influence of Profession on Teachers' Quality of Life

### Abstract

The aim of this study was to analyze the quality of life (QOL) of 142 primary school teachers and 145 firemen-rescuers. To determine QOL we used a WHOQOL-BREFF questionnaire. Teachers' QOL was significantly lower in all four domains when compared with firefighters' QOL; however, it did not differ statistically from the Czech population norms. Significantly lower compared to the norm was only teachers' satisfaction with their health. Our results showed a significant influence of profession, age and gender on QOL. The influence of subjectively perceived mental stress as a factor reducing the QOL was manifested only in teachers. The explanation for this difference in QOL could be predicting better physical and mental health of firefighters.

**Keywords:** *quality of life, WHOQOL-BREFF questionnaire, teachers, firefighters*

### Introduction

WHO defines the quality of life as that corresponding with the human's perception of his/her own position in life in the context of culture, in which a person is living, and in relation with his/her aims, expectations, standards, and concerns (Dragomirecká & Bartoňová, 2006). Quality of life is usually defined as a subjective assessment of their own life situations and includes not only a sense of physical health, but also the mental health, social opportunities, religious, economic aspects, etc.

The quality of life should be considered within the context of individual study. The biggest interest of researchers is being devoted to QOL of patients suffering from various diseases or health handicaps (Health Related Quality Of Life). Besides

that we may find studies oriented to the topics of QOL in various population groups defined from the point of view of age, gender, or social-economic status (Axelsson et al., 2007; Hnilica, 2005; Hulman & Hemlin, 2008; Mareš, 2006; Řehulka & Řehulková, 2001). In our study we analyzed the QOL according to the exposition to occupational stress. We assessed the QOL of primary school teachers and firemen-rescuers.

In terms of exposure to work stress, **the teaching profession** belongs among the most risky ones, and elementary school teachers are, according to the results of many studies, one of the most vulnerable groups (Židková & Martinková, 2003). Many authors proved that primary school teachers are exposed to time pressure and an increased sense of responsibility. They also demonstrate a high degree of neurotic complaints, including the loss of professional productivity due to the long performance of this profession (Paulík, 1998). Žaloudíková (2001) states that the teaching profession is characterized by the third, highest degree of mental stress, and even some health damage cannot be excluded. Řehulková & Řehulka (2007) state that teachers' stress can reduce teachers' quality of life.

**The firefighter profession** has, in terms of mental and physical demands, also its specific features that determine this profession as an activity highly demanding in both aspects. We may include, above all, a high level of physical activity, intense stress during rescue operations, work in shifts, exposure to noise, high temperature, toxic substances, etc. (Šváb, 2006).

From the above-mentioned it is clear that both the teaching and firefighter professions belong to jobs with high exposition to occupational stress. The entity of work stress, however, is different. In the case of teachers, it is a chronic, persistent mental workload enhanced by the perception of the low social prestige of this profession (Paulík, 1998). In the case of firefighters, we can talk about short attacks of extreme stress during interventions, often followed by relief and satisfaction of a job well done. Firefighters have a greater choice in decision-making, their job brings them satisfaction and they consider it as interesting and varied. This partially eliminates the adverse effects of other factors such as work under time pressure or high responsibility.

## **Method**

Over the period 2011–2012, at the Department of Hygiene and Preventive Medicine at Hradec Králové, Czech Republic, an anonymous questionnaire inquiry of QOL among the representatives of two randomly chosen professions



was conducted. We examined 142 primary school teachers and 145 firefighters. The mean age of the teachers was rather higher ( $41.6 \pm 10.7$ ) than that of the firefighters ( $36.9 \pm 8.7$ ). As expected, in the group of firefighters there were more men than women ( $n=135$ , i.e. 93.1%), the majority of the teachers were female ( $n=102$ , i.e. 71.8%), ( $p < 0.0001$ ). The length of professional experience was statistically similar in both groups; however, due to their higher average age, the teachers had done their job longer (15.5 vs. 13.1 years). The majority of the teachers had a university education (95.8%). In the group of firefighters, 75% had completed high school education; those remaining had passed a higher or lower degree of university education.

The respondents participating in the study received a 3-component questionnaire. The first part concerned demographic and socioeconomic data, the way of life (negative habits) and occupational history. The second part was the Czech version of the WHOQOL-BREF questionnaire (Dragomirecká & Bartoňová, 2006), and the third part was Meister's Questionnaire to assess psychical workload (Židková, 2002).

The WHOQOL-BREF questionnaire contains 26 items grouped in 4 domains expressing the QOL of the subjects investigated: *physical health*, *mental health*, *social relations and environment*. The remaining two items assessed the *general health status and quality of life*. Overview of the surveyed items is presented in Table 2. The questionnaire is standardized on the Czech population up to 65 years of age.

The statistical analysis was performed using the NCSS 2007 program. To compare the quantitative data (e.g. age), Kruskal-Wallis analysis of variance was made with following multiple comparison tests (ANOVA). For assessing the qualitative data (e.g. educational attainment or the mutual comparison of the teachers and firefighters QOL) the  $\chi^2$  test of independence in contingency tables, or Fisher's exact test were used (Table 1a-f). To compare the individual items of WHOQOL-BREF questionnaire with population norm two-sample t-test was used (Table 2)

## **Results**

The questionnaire inquiry focused on assessing QOL in both investigated professional groups showed that between these groups there are statistically significant differences. In all the domains and items of the WHOQOL-BREF questionnaire, the firefighters showed values statistically higher (i.e. better) than the population norms indicate (Table 1a-f). In contrast, the teachers rated their *physical health*, *mental health*, *social relationships*, *living conditions (environment)* and *quality*

of life similar to the average Czech population. Only the results concerning the items *satisfaction with one's own health* were worse than in the general population ( $p=0.02$ ). From the comparison of the QOL of both monitored professional groups of respondents it follows that in all the domains and items the teachers obtained significantly lower, i.e. worse, results ( $p < 0.001$ ).

Knowing that our groups showed a gender and age imbalance, we evaluated not only the influence of the profession on each domain and item of the WHOQOL-BREFF questionnaire, but also the influence of age and gender (Table 1a-f). We monitored the results of the whole set of respondents in each profession and then for men and women and over and under 40 years of age separately in the groups of teachers and firefighters. The last aspect, which we took into account when assessing differences in the QOL rating of both groups, was their subjective perception of occupational stress. We evaluated how the teachers and firefighters who negatively perceived their work-related stress assessed their QOL. The level of subjectively perceived psychical occupational load was monitored by the Meister questionnaire (for more details see Šušoliaková et al., 2013).

We assumed that increased exposure to work-related stress in the teachers could be a crucial determinant decreasing their quality of life. This hypothesis, however, was not fully confirmed. From Table 1a-f the significant influence of profession, age and gender on all the domains of the QOL are evident. In all the domains and items, the men, especially firefighters, younger but even older ones, obtained statistically better results ( $p < 0.001$ ) than the women (both female teachers and firefighters) or older male teachers. The influence of subjectively perceived mental stress as a factor reducing the quality of life was manifested only in the teachers. The firefighters, who negatively perceived their work stress, exhibited better results in all domains than the standard population, even in these cases. Only in separate items, *quality of life* and *satisfaction with one's own health*, these differences were not statistically significant.

Differences in individual items of all the monitored domains are presented in Table 2, which also gives us an overview of all the issues raised by the WHOQOL-BREFF questionnaire. Generally speaking, according to the subjective statements of our respondents, they consider their **physical health** as more or less good or very good. It is certainly due to the fact that our respondents were middle-aged individuals capable of working. As for the particular items of the physical health domain, we found that the teachers significantly more often than the firefighters complained of *pain*, impaired *mobility* and more frequently expressed a *need for medical care*. The firefighters showed more *sufficient energy* than the teachers (31% vs. 7%), excellent *ability to perform daily activities* and were more *satisfied with work performance* and the quality of their *sleep*.

The firefighters also stated a significantly better evaluation in all the items of the **mental health** domain. They reported significantly greater *enjoyment of life* (maximally satisfied were 48% of the firefighters and 18% of the teachers), believed that their *life has great sense*, and stated a better *capability of concentration*. The firefighters were also more satisfied with their *physical appearance* and *identity*. On the contrary, the teachers more frequently experienced *negative emotions*, such as blue mood, despair, anxiety or depressions.

In the domain monitoring **social relations**, both groups differed significantly in all items, again. The firefighters obtained better results in the items evaluating *satisfaction with personal relationships* (30% of the firefighters and only 10% of the teachers were very satisfied), with *sexual life* (very satisfied were 39% of the firefighters and only 14% of the teachers) and with the *support of friends*.

A statistically significant difference was observed in the majority of items evaluating living conditions (domain **environment**). The studied groups differed in the evaluation of the *financial situation* (completely satisfied were 9% of the firefighters and 3% of the teachers; completely dissatisfied were 5% of the firefighters and 13% of the teachers, and between these marginal possibilities, the firefighters were rather satisfied and the teachers more dissatisfied). The firefighters were more satisfied with their possibility to pursue *hobbies*, with the *living conditions*, *access to health services* and with *transportation*.

The firefighters evaluated their **quality of life** significantly higher, 31% of them considered it to be very good and 60% to be good. The teachers rated their QOL lower (only 11% considered it as very good and 53% thought it was good). The teachers were also less **satisfied with their health** (10% were dissatisfied, 32% moderately satisfied, 53% were satisfied and only 3% were very satisfied). The firefighters reported better results. 61% of them were satisfied with their health and 25% were very satisfied.

## Discussion

In The New Educational Review No. 1, 2013 (Šušoliaková et al., 2013) we presented the results of a study aimed at the assessment of occupational mental stress of elementary school teachers and firefighters. The results of our survey showed that although both professions can be considered mentally demanding, the level of the perceived stress among the teachers was higher than in the firefighters. We wondered whether the two groups differ even in QOL.

The results of our study show that the teachers' QOL was indeed in all domains

significantly lower than the QOL of the firefighters. Yet, it should be stressed that their QOL was not statistically different from the Czech population norms. Significantly lower compared to the norm was only the teachers' satisfaction with their health. This finding may, to some extent, be related to the fact that the teachers were represented predominantly by women and those are known to have a tendency to care about their own health more than men.

An explanation of the differences in the QOL between the representatives of both professions can be found in a number of reasons. One of them is the fact that firefighters represent a selective population of emotionally, mentally and physically resistant individuals. Employees doing the job of firefighters are healthy individuals who have passed through the sieve of preventive check-ups. In contrast, for teachers such a special health feature is not required.

Important determinants of QOL are also social contacts, perceived social support, and integration into groups, social cohesion, acceptance and contribution (Kebza, 2005). From our study, it is clear that the teachers did not differ from the population norm in the domain evaluating social relations, the firefighters, however, showed there an above-average rating (satisfaction with personal relationships, sexual life, and with the support of friends). The firefighters showed a high rating also in the items of the mental health domain, particularly as regards their positive life evaluation, increased self-confidence and self-esteem.

One of the factors which can decrease the teachers' QOL may be higher perception of stress. In this context it should be noted that in recent years even in teachers we can find a positive shift in the perception of occupational stress. For instance, Paulík (2012) states that despite a relatively high level of subjective load, a relatively high level of job satisfaction can be observed among teachers. A possible explanation may lie in the fact that teachers, at least those who voluntarily remain in their profession, probably manage to counterbalance their excessive workload by means of other factors. Job satisfaction is connected to particular personality traits as temperament, neuropsychological stability, hardiness, sense of coherence, optimism, self-confidence factors, etc. Similarly, Blatný (2001) stated that one of the main prerequisites of life satisfaction, which can in turn influence the degree of occupational stress perception, is self-esteem. Also Nepožitková in 2009 showed that people with higher QOL are exposed to lower workload and vice versa. It is important to note that the perception of working/teaching stress also affects such factors like a healthy lifestyle and the knowledge of suitable coping strategies. There is space for preventive programs and possible intervention.

## **Conclusion**

The aim of our study was to analyze the QOL of primary school teachers and firemen-rescuers. We found that the teachers' QOL was significantly lower in all four domains when compared with the firefighters' QOL; however, it did not differ statistically from the Czech population norms. One of the reasons for the observed difference may be higher perception of occupational stress by elementary school teachers. Nevertheless, from our results it appears that sex and age are higher predictors of employees' QOL than the kind of profession. These factors are the most important confounders. Thus, when interpreting the results of our study, we must emphasize that the worse QOL of the teachers could be caused by the fact that there were more women in this group and the mean age of the teachers was higher than the mean age of the firefighters. Another explanation of the differences in the QOL of our two groups of respondents could be the fact that firefighters are a selected population, which due to their good physical and mental health can show the so-called "healthy worker effect". Personal characteristics of the respondents were not examined.

In conclusion, it can be stated that the benefit of this work is not in mutual comparison of QOL among our two groups, but in the independent evaluation of the teachers' and firefighters' QOL in relation to the population norm.

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## Appendix

**Tables 1 a-f:** Influence of particular factors (profession, sex, age, occupational stress perception) on domains and items of WHOQOL-BREFF questionnaire (two-sample t test.)

**Table 1a.** Domain 1 – Physical health

	number	mean	p-value	
Population norm	308	15.55		
Teachers – whole set	142	15.34	0.33	NS
Firefighters – whole set	145	17.12	< 0.001	***
Men – whole set	175	16.89	< 0.001	***
Men – teachers	40	15.67	0.78	NS
Men – firefighters	135	17.26	< 0.001	***
Women – whole set	112	15.21	0.19	NS
Women – teachers	102	15.2	0.20	NS
Women – firefighters	10	15.31	0.77	NS
Younger (< 40 years) – whole set	154	16.83	< 0.001	***
Younger – teachers	65	15.91	0.28	NS
Younger – firefighters	89	17.51	< 0.001	***
Older (≥ 40 years) – whole set	133	15.55	1	NS
Older – teachers	77	14.85	0.0074	**
Older – firefighters	56	16.51	0.0014	**
Teachers negatively perceiving work stress	99	15.03	0.015	*
Firefighters negatively perceiving work stress	44	16.48	0.0025	**

The span of scale in domains is from 4 to 20; in items Q1 and Q 2 it is from 1 to 5, where the higher value of a score the better QOL.

**Table 1b.** Domain 2 – Mental health

	mean	p-value	
Population norm	14.78		
Teachers – whole set	14.84	0.80	NS
Firefighters – whole set	16.96	< 0.001	***
Men – whole set	16.64	< 0.001	***
Men – teachers	15.3	0.21	NS
Men – firefighters	17.04	< 0.001	***

Population norm	mean	p-value	
	14.78		
Women – whole set	14.76	0.93	NS
Women – teachers	14.65	0.60	NS
Women – firefighters	15.87	0.16	NS
Younger (< 40 years) – whole set	16.4	< 0.001	***
Younger – teachers	15.23	0.17	NS
Younger – firefighters	17.26	< 0.001	***
Older (≥ 40 years) – whole set	15.34	0.024	*
Older – teachers	14.5	0.36	NS
Older – firefighters	16.48	< 0.001	***
Teachers negatively perceiving work stress	14.50	0.31	NS
Firefighters negatively perceiving work stress	16.32	< 0.001	***

Table 1c. Domain 3 – Social relations

Population norm	mean	p-value	
	14.98		
Teachers – whole set	14.86	0.67	NS
Firefighters – whole set	16.68	< 0.001	***
Men – whole set	16.3	< 0.001	***
Men – teachers	14.93	0.92	NS
Men – firefighters	16.7	< 0.001	***
Women – whole set	14.98	1	NS
Women – teachers	14.84	0.62	NS
Women – firefighters	16.4	0.13	NS
Younger (< 40 years) – whole set	16.35	< 0.001	***
Younger – teachers	15.53	0.15	NS
Younger – firefighters	16.96	< 0.001	***
Older (≥ 40 years) – whole set	15.12	0.63	NS
Older – teachers	14.3	0.061	NS
Older – firefighters	16.24	< 0.001	***
Teachers negatively perceiving work stress	14.68	0.36	NS
Firefighters negatively perceiving work stress	15.94	0.0069	**



**Table 1d.** Domain 4 – Environment

Population norm	mean	p-value	
	13.30		
Teachers – whole set	13.10	0.34	NS
Firefighters – whole set	14.63	< 0.001	***
Men – whole set	14.3	< 0.001	***
Men – teachers	13.08	0.53	NS
Men – firefighters	14.67	< 0.001	***
Women – whole set	13.2	0.66	NS
Women – teachers	13.11	0.42	NS
Women – firefighters	14.1	0.23	NS
Younger (< 40 years) – whole set	14.33	< 0.001	***
Younger – teachers	13.71	0.15	NS
Younger – firefighters	14.79	< 0.001	***
Older (≥ 40 years) – whole set	13.34	0.85	NS
Older – teachers	12.58	0.006	**
Older – firefighters	14.38	< 0.001	***
Teachers negatively perceiving work stress	12.93	0.12	NS
Firefighters negatively perceiving work stress	14.32	< 0.001	***

**Table 1e.** Item Q1 – Quality of life

Population norm	mean	p-value	
	3.82		
Teachers – whole set	3.70	0.11	NS
Firefighters – whole set	4.21	< 0.001	***
Men – whole set	4.1	< 0.001	***
Men – teachers	3.75	0.57	NS
Men – firefighters	4.21	< 0.001	***
Women – whole set	3.72	0.22	NS
Women – teachers	3.68	0.47	NS
Women – firefighters	4.2	0.1	NS
Younger (< 40 years) – whole set	4.1	< 0.001	***
Younger – teachers	3.88	0.54	NS
Younger – firefighters	4.26	< 0.001	***

	mean	p-value	
Population norm	3.82		
Older ( $\geq 40$ years) – whole set	3.79	0.69	NS
Older – teachers	3.55	0.0037	**
Older – firefighters	4.13	0.0026	**
Teachers negatively perceiving work stress	3.69	0.12	NS
Firefighters negatively perceiving work stress	3.98	0.16	NS

**Table 1f.** Item Q2 – Satisfaction with one's own health

	mean	p-value	
Population norm	3.68		
Teachers – whole set	3.49	0.02	*
Firefighters – whole set	4.10	< 0.001	***
Men – whole set	3.99	< 0.001	***
Men – teachers	3.45	0.1	NS
Men – firefighters	4.15	< 0.001	***
Women – whole set	3.51	0.062	NS
Women – teachers	3.51	0.072	NS
Women – firefighters	3.5	0.51	NS
Younger (< 40 years) – whole set	3.99	< 0.001	***
Younger – teachers	3.69	0.92	NS
Younger – firefighters	4.21	< 0.001	***
Older ( $\geq 40$ years) – whole set	3.58	0.24	NS
Older – teachers	3.32	< 0.001	***
Older – firefighters	3.93	0.012	*
Teachers negatively perceiving work stress	3.41	0.0053	**
Firefighters negatively perceiving work stress	3.89	0.12	NS

**Table 2.** Statistical comparison of scores of particular items of WHOQOL-BREF questionnaire in the group of teachers and firefighters ( $\chi^2$  test of independence in contingency tables)

Domains	Items	Firefighters vs. teachers p value
Domain 1 Physical health	Q3 Pain or discomfort	0.003 (**)
	Q4 Dependency on medical care	< 0.001 (***)
	Q10 Energy and fatigue	< 0.001 (***)
	Q15 Ability to move around	0.003 (**)
	Q16 Satisfaction with sleep	< 0.001 (***)
	Q17 Ability to perform daily living activities	< 0.001 (***)
	Q18 Satisfaction with work performance	< 0.001 (***)
Domain 2 Mental health	Q5 Enjoyment of life	< 0.001 (***)
	Q6 Meaning of life	< 0.001 (***)
	Q7 Ability to concentrate	< 0.001 (***)
	Q11 Acceptance of physical appearance	0.002 (**)
	Q19 Satisfaction with one's own identity	< 0.001 (***)
Domain 3 Social relations	Q26 Negative feelings, such as blue mood, despair, anxiety, depression	< 0.001 (***)
	Q20 Satisfaction with personal relationships	< 0.001 (***)
	Q21 Satisfaction with sexual life	< 0.001 (***)
	Q22 Satisfaction with support from friends	< 0.001 (***)
Domain 4 Environment	Q8 Feeling of security in daily life	< 0.001 (***)
	Q9 Satisfaction with physical environment (e.g. pollution, climate, noise, attractiveness)	0.059 (NS)
	Q12 Satisfaction with financial situation	< 0.001 (***)
	Q13 Satisfaction with access to information	0.200 (NS)
	Q14 Opportunity for leisure activities/hobbies	< 0.001 (***)
	Q23 Satisfaction with living conditions	< 0.001 (***)
	Q24 Satisfaction with access to health services	0.004 (**)
Particular items	Q25 Satisfaction with transport possibilities	0.016 (*)
	Q1 Satisfaction with quality of life	< 0.001 (***)
	Q2 Satisfaction with one's own health	< 0.001 (***)

## **Social Experiences of Future Teachers – a Research Report**

### **Abstract**

The basic notional category and the leading motif of the presented study is social experience of candidates for teachers. The reflection is grounded on the social psychology of development in the context of the reality experienced by the individual, the meanings applied to experiences (Tyszkowa, Przetacznikowa, Brzezińska), and in the perspective of intercultural education (Lewowicki, Nikitorowicz).

In the undertaken discussion, the author refers to the results of extensive multi-variate research conducted in 2011–2012 in several academic environments which differ in location (the centre – the borderland) and in socio-economic potential. This constitutes the background against which the determinants are indicated of preparing future teachers for work in multicultural conditions.

*Keywords: experience, future teacher, multiculturalism, intercultural education, borderland, centre, socio-economic potential*

### **Introduction**

Intercultural contacts are the daily routine of multicultural societies. They result both in enriching the home culture with the assimilated foreign elements and in activating defensive activities aiming at the preservation of old values perceived as one's own. Cross-group interactions take place along with cultural contact and with inevitability of conflicts and misunderstandings (Huntington 2003; Nikitorowicz 2009). In such relations, the understanding experience (Lewowicki 2000: 27) gives rise to dialogue in education as the basis for negotiation, compromise and agreement.

Experience is an ambiguous term and can be considered in several senses – e.g. the colloquial, physiological and philosophical one. In the pedagogical sense, it is “the knowledge, skills and habits acquired during life-long contacts with the outer world, i.e. with its influence on man, and reversely – the human influence on the fragments of this world accessible to man” (Kupisiewicz 2009: 34). Most frequently, this means “the process or result of direct familiarization with reality through methodical observation or experiment” (Okoń 2007:85).

Following Maria Tyszkowa (1988:44–79), in the undertaken discussion experience is understood as a **trace (representation, effect) of previous human activity in relations with the world. The contents of these traces are not so much situations, but rather behaviours, activities, experiences, and mental, physical or physiological processes which take place or are felt in a particular situation** (similar standpoints are presented by Stempniewska-Żakowicz 1996, Trempała 2000). In this approach, the experience gained in the individual’s own activity in relations with the world can be also treated as a system of practical and procedural knowledge. According to the fundamental idea of neo-constructivism (the concept of mental development elaborated by Maria Tyszkowa), the individual’s mental development consists in **collecting and processing experience which is subjected to structuralization and restructuralization** as a result of the individual’s activity throughout the whole life cycle in constantly undertaken relations with the world.

The discussion on future teachers’ experiences in relations with a representative of a different culture (the Other- a person of different /from one’s own/ ethnic, national, in broader terms – cultural, civilization origin or of different sex, age, ideology, etc. – in its broad sense) is situated in this work in the learning process. This is in accord with the views of: Maria Przetacznikowa (1973:40) “learning is a process of creation, transformation and consolidation of regulating activities based on individual experience”, and Ziemowit Włodarski (1974:17) “the acquisition of experiences expressed in the modification of behaviour”. The modern attitude to learning is the same – it is “a process which leads to a relatively permanent change of real behaviour or its potential based on experience” (Gerrig, Zimbardo 2011:168).

The understanding of education also brings about a significant span of experiences and its subjects. This is noticed by Zbigniew Kwieciński (1990: 99), who claims that what can be understood by education is “the whole of experiences and influences on the individual’s development, the whole of experiences and influences valued as beneficial for the development, the whole of developmental possibilities used by the individual or the whole of institutional practices organized in order to influence the desired development of people”.

## **Experiences in direct relations with the representative of a different culture – presentation of authorial research results**

Modern societies, with all their hallmarks of multiculturalism, function mostly as pluralistic and tolerant communities with certain areas of intolerance. This affects education at its different levels. What shape should education apply in such conditions? How prepared should teachers be for work in the multicultural environment? What is the relation between what one (future teacher) currently experiences and who this one is, how one functions and approaches Other people or one's own development?

Various scientific disciplines make attempts to answer these questions. The significance of pedagogy here is particular as other sciences restrict their discussion only to description. Basing the research on the conducted diagnosis, pedagogy makes designs or transformations and implements changes. Its role is strategic for further development and functioning of individuals, groups and communities.

The presented study aims at viewing candidates for teachers as people who construct their identity through experiences in relations with the Other/Others in daily life situations. What is referred to is a set of results of extensive multivariate studies<sup>1</sup> conducted in 2011/2012 in three central zones of Poland and three borderland ones, all of which are differentiated as regards the socio-economic development. A representative group of 1268 people took part in the studies. The research model combined a quantitative strategy (auditorium questionnaire) with a qualitative one (including group and individual interviews). In the analysis of qualitative data, both simple and more complex methods (e.g. factor analysis or data clustering) were applied. The application of these methods (e.g. factor analysis or interpretation of the respondents' answers) resulted in the (in a way) open character of the results. The description of the examined group, research ground and methodology is included in Szczurek-Boruta 2013 (in print).

The transformations occurring in the contemporary world, also present in Poland (European integration, globalization, migration), make multiculturalism a popular phenomenon. Traditionally limited to racial or ethnic minorities, the notion of multiculturalism is applied today in regard to differences resulting from

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<sup>1</sup> The studies were conducted within the research project: *Uczyć się od innych i uczyć-nauczać innych – praca nauczyciela w warunkach wielokulturowości /To learn from others and to teach others – the teacher's work in multicultural conditions/*, National Science Centre in Cracow, University of Silesia, Faculty of Ethnology and Education in Cieszyn, project No. N N106 416640, contract No. 4166/B/H03/2011/40.

language, sex, social class, individual dissimilarity, and obviously also racial or ethnic differences.

The applied factor analysis allowed for reducing the number of 22 variables specifying the experiences in direct contacts with the Other and discovering a structure in relationships between these variables (cf., Szczurek-Boruta 2013a). There were two relatively independent factors in the correlation matrix – the first factor (FI) **associated with experiences in contacts with national, ethnic and religious groups** and the second (FII) **with experiences in contacts with other groups representing different cultures**.

The FI factor is distinguished by high loads in the case of direct experiences in relations with the representatives of national, ethnic and religious groups. What can be noticed here is the functioning of the “cultural stereotype,” which consists in the beliefs concerning others who come from particular countries or belong to particular nations. The research results indicate the most important features which determine viewing man as the Other – ethnicity, nationality, religion, and race.

This is confirmed by the research results of Ewa Nowicka and Sławomir Łodziński (2001), who stated that the attitudes to others are mostly determined by the country of their origin – and first of all, the stereotype of this country which functions in social consciousness.

The FII factor is distinguished by high loads in the case of experiences with a person of different social/material status, a person at different (older/younger) age, a person of different religion, a disabled person, a person of different sex. In this study, the FII factor was given the name of a mixed factor.

The multidimensionality of psychological space assumes the possibility of distinguishing many different dimensions in which various representations can be considered simultaneously (representation due to age, sex, kinship; due to physical distance: an acquaintance, neighbour, foreigner; due to semantic distance – similarities and differences in attitudes or interests; due to the social dimension – a person from the same or different group, from classes such as fully able or disabled) (Lewowicki 2010: 5–20; Nikitorowicz 2012: 47–66). These issues are confirmed by the results of authorial studies.

High values of the FI factor<sup>2</sup> seem to indicate a bigger number of irritating or negative experiences in contacts with representatives of national, ethnic or religious groups. By entering a relationship with the other, one is transferred to

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<sup>2</sup> In all the examined environments, the FI factor reaches the mean over 4.6 in the applied scale/scoring: 6 – no experiences, 5 – irritating, 4 – negative, 3 – indifferent, 2 – positive, 1 – enriching experiences.

another world, “we experience such transition as a kind of shock” (Berger, Luckmann 1983:52). What is revealed here is the ambivalent nature of the first impulse towards Others. Man needs another person, searches for the person without whom life is not possible. However, what appears at the moment of the first encounter is uncertainty and fear.

The experiences in contacts with people differing in social/material status, age, religion, disability or sex (the FII factor<sup>3</sup>) are indifferent and positive in the respondents’ opinions.

The conducted statistical analysis indicates the existence of the relationship between the socio-economic potential, (central/borderland) location and the future teachers’ experiences in direct contacts with Others (canonical  $R r=0.41535$ ;  $\chi^2(20)=354.14$ ,  $p=0.0000$  moderate correlation, substantial relationship- Guilford 1960: 171).

The experiences in contacts with national, ethnic and religious groups (the FI factor) of borderland residents in all zones differentiated in the socio-economic development are perceived by them as rather negative and irritating (Szczurek-Boruta 2013a). Natural, better possibilities of such contacts in borderlands might frequently bring about negative feelings or conflicts and arguments – hence such distinctive declarations and evaluations of these contacts by the respondents. Specificity of the environment and the resulting closeness of the Other affects the attitudes to dissimilarity.

In comparison to borderlands, the average values of the FI factor are higher in the central zones. Most of the negative experiences in contacts with national, ethnic and religious groups happen to students living in central and poorly developed parts. It is possible that labour market threats raise more resistance towards Others here than in the case of the respondents living in other zones. Differences in the respondents’ life situation are of some significance – the better the socio-economic situation and bigger the GDP, the lesser the fears. When this group (students living in central and poorly developed zones) enters the labour market, everyone (particularly the culturally different) becomes a rival in the hunt for jobs. This “rational” mechanism of thinking is explained by the theory of a scapegoat (Nelson 2003).

The respondents’ experiences in direct contacts with Others might result in their ethnocentric and ethno-relativist attitudes. To a great extent, the economic crisis of the whole European world is the reason for the rebirth of closed, ethnocentric

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<sup>3</sup> The FI factor reaches the mean over 2.0 in the applied scale/scoring: 6 – no experiences, 5 – irritating, 4 – negative, 3- indifferent, 2 – positive, 1 – enriching experiences.



attitudes not only among the young but also the whole society. This seems to be confirmed by studies conducted in the eastern borderland (Muszyńska 2013, Nikitorowicz 2009, Sobocki 2000) and the southern one (Wysocka 2009). Distance towards others, fear and signs of discrimination also take place in the case of youth in the western borderland (Kurzępa 2007).

It can be claimed that, in the context of research results concerning future teachers and the discussed studies in different borderlands of Poland, the future teachers are not free from stereotypes and prejudice, which determines their educational activity. What may be significant for breaking the unwillingness and distance towards Others is intercultural education carried out from the earliest years. The research output concerning intercultural education and borderland communities is substantial. The series "Intercultural Education" edited by T. Lewowicki comprises 55 publications. There are papers edited by J. Nikitorowicz, published since 1995 in "Trans Humana" Publishing House, and publications edited by Z. Jasiński at the University of Opole.

Tadeusz Lewowicki (2012: 15–16) points at its duties in this respect: "shaping the world of values, knowledge, attitudes, which will lead to peaceful coexistence, tolerance, cooperation, decent living standards, respect for human rights, freedom".

The FII factor, mixed with experiences in contacts with the remaining groups, the representatives of different cultures, has relatively low values<sup>4</sup>. Experiences of this type are positive. The more intensive the socio-economic development that takes place in the centre and in borderlands, the lower the FII values are – thus, the experiences are more positive.

In environments with very good living standards, a positive attitude is shaped to the elderly, disabled and to people in a difficult financial situation. Therefore, high socio-economic potential offers more possibilities of aid and support for endangered or marginalized groups. It also provides more safety to the respondents – therefore, the fear of Others is weaker. Apart from this, what is observed in the societies in which man is regarded as the prior value are many dimensions of human functioning – the issue of the rank of a person who differs in the social/material status, age, disability (health or biological-physical dysfunctions) or sex does not determine this person's participation in social and economic rights (Kościelska 1998; Suchodolska, Gebel 2008:89–125).

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<sup>4</sup> Values oscillating around the mean of 2.0 in the applied scale/scoring: 6 – no experiences, 5 – irritating, 4 – negative, 3- indifferent, 2 – positive, 1 – enriching experiences.

## **Conclusion**

Social experiences are viewed in this study as particularly interesting and essentially significant issues in preparing the teacher for work in multicultural conditions. What prevails in the article are the motifs concerning the experiences which take place outside the academic community and are not intentional from the standpoint of the teachers' education. This constitutes a relatively multisided approach to the future teachers' social experiences and an image of various determinants of the respondents' professional preparation.

In the description of complex determinants of preparing teachers for work in culturally differentiated environments – in the multicultural world, an authorial approach has been applied. The theoretical background for the major subject of reflection clearly emphasizes the relations between the issues of intercultural education and the knowledge acquired in the field of pedagogy, psychology, sociology, anthropology and other sciences.

What constitutes the value of the collected empirical material is that it drifts apart from fragmentary descriptions, characterizations of age groups living in one selected environment (e.g. town, province), and presents a cross-section of the whole generation – of candidates for teachers (the examined group is representative). This enables comparisons and generalizations.

On the whole, the presented work introduces a lot of significant information and opens new perspectives for studies on the borderline of intercultural education and general pedagogy, pedeutology, several subdisciplines of psychology and sociology as well as some other fields of the broadly understood humanities.

The results of empirical studies urge to view the candidate for the teaching profession as a person who constructs their identity in the course of experiences collected in different life situations in relations with the Other/Others.

Unique ways of going through, sensing and interpreting daily experiences constitute a significant area of determinants in preparing the future teacher for work in multicultural conditions (Szczurek-Boruta 2013a,b). Candidates for teachers are members of a particular culture, since the earliest years they have been familiarizing with its typical cognitive principles of interpreting the world, they learn these rules every day, and through individual experience – they produce specific interpretative rules. As a result, every experience goes through the filter of general knowledge which the individual possesses on this subject and of the implicit cultural and individual interpretative rules.

What constitutes an important field of determinants in preparing future teachers for work in multicultural conditions, apart from social experiences, is the eco-

conomic potential and socio-cultural environment. More intensive socio-economic development offers better opportunities for functioning for individuals, groups and communities.

The respondents, future teachers, are equipped with certain knowledge- experiences in contacts with Others. They have a definite (positive, indifferent, negative) emotional attitude. They are aware of the presence and significance of the Other/ Others, they are aware of the multitude and each individual's right to existence and to separate identity. What is possible in this situation are multisided meetings of cultures, their polyphonic and multidirectional dialogue, and on some occasions also argument or conflict.

The sine qua non for social integration and for implementing elements of interculturalism is the activeness, engagement level of individuals, groups and communities. Man should be aware of the fact that s/he continually learns from Other people in daily life situations and should be aware of developing the need for acquiring experience and sensitivity to the enriching dissimilarity of Others (Szczyrek-Boruta 2012: 25–31, 2013 a,b).

Intercultural education aims at building bridges of understanding with Others. Undertaking this is not only an ethical obligation, but also an urgent problem of contemporary times. Continual learning in interpersonal contacts and cultural sensitization in the direct contact with dissimilarity are essential conditions for shaping not only the identity of self-aware people, but also the pedagogical culture of society – the conditions of social integration.

Care for successful implementation of the tasks of intercultural education must be related to the teacher's inner condition and professional preparation. Social experiences in relations with the representative of another culture are of substantial significance in constructing identity and in preparing for the teaching profession.

The conducted diagnosis of the future teachers' social experiences, in their personal, social and cultural contexts, may contribute to better use of their potential and may become a basis for preparing highly-qualified pedagogical staff. This will also enhance broadening of teachers' competences and developing learners' key competences, which might form the foundation for developing the pedagogical theory and optimizing pedagogical activities.

The reflection on the conditions or chances for professional development of candidates for teachers, on the determinants of their preparation for work in multicultural conditions, as well as on the directions of changes in teachers' education co-occurs with the methodological approach applied in this study. This may facilitate shaping the pedagogical subdiscipline of intercultural pedagogy.

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## Teachers' Satisfaction Concerning the Use of ICT in Rural Educational Centers of Andalusia (Spain)

### Abstract

This is a study on the use of Information and Communication Technologies (ICT) in education, with a particular emphasis on rural schools, covering topics that range from the insights of teachers on the necessary adaptation of their work methods, to the actual use of ICT in the classroom. To this end, a descriptive methodology is applied through a non-experimental design by means of a survey, targeting a sample of 217 individuals. The objective is to determine the degree of satisfaction of rural teachers of the autonomous community of Andalusia with what concerns the role of ICT and current technology management strategies. The study was carried out from the point of view of teaching and school organization. Above all, the interest lies in determining which aspects of this new reality are more appealing to the teacher, from personal and professional standpoints. Some of the most relevant results and conclusions point out a high degree of satisfaction with the novel possibilities offered by ICT while enhancing teaching and broadening professional relationships. In turn, these same conclusions highlight that the most significant constraints occur at the organizational level (e.g. management, resource allocation), which represents a key aspect for the improvement of these educational centers in the near future.

**Keywords:** *rural school, satisfaction, Information and Communication Technologies, teaching staff, IT centers*

## **1. Previous Work**

With the emergence of the information society and, acknowledging this fact (Márquez, 2002; Boix, 2003; Feu, 2004; Corchón, 2005; Bustos, 2006; Hinojo, Aznar & Cáceres, 2009; Raso et al. 2010; Cabero, López & Jaen, 2013), a significant and ambitious investment in the rural environments has been carried out by the public administration, not without a certain delay. It resulted in the implementation of official programs fostering the integration of ICT into the classrooms. Under this approach, certain initiatives constituted a decisive step towards the introduction of these kinds of tools to the environment that was traditionally forgotten (Berlanga, 2003; Consejería de Educación y Ciencia, 2003, Corchón, 2005; Hinojo, Raso & Hinojo, 2010). Noteworthy initiatives include the Alhambra plan, the Andaluz plan for the Introduction of New Image and Communication Technologies (*Plan Andaluz de Introducción a las Nuevas Tecnologías de la Imagen y la Comunicación* – P.A.I.N. T.I.C.), the REDAULA and AUL@BUS plans and, in a more long-term approach, the creation of the Resource Centers (*Centros de Recursos – C.E.R. E*), the AVERROES network and the ICT centers.

It has not been enough to reduce the presence of ICT in these schools (Chacón, 2003, Corchón, 2005; Corchón, Raso & Hinojo, 2013). On the contrary, it has managed to progressively increase this presence to the point that it has become necessary to enquire about the extent to which these tools are appealing to the teaching staff who are, after all, the ones who are actually going to use them for pedagogical purposes. This constitutes motivation and stresses the need for research (Chacón, 2003; Corchón, 2005; Prendes, Castañeda y Gutiérrez, 2010; Raso, 2012).

Given the fact that there have been no documented studies addressing teachers' satisfaction with the influence of ICT on teaching and, taking into account all the issues pointed out by Corchón (2005) and Bustos (2006) concerning education in this environment, it seemed interesting to combine both lines of work in research that could evaluate precisely these levels of satisfaction among the teaching staff of the rural areas of Andalusia. In so doing we wanted to learn; (1) if rural education is developing towards the knowledge society; (2) if it is breaking with the traditional social stereotype of underdevelopment; and (3) if there is still a long way to go to fully accomplish this.



## **2. Description of the Study**

### **2.1. Objectives**

The presented study aims to efficiently address the following objectives:

- Evaluate the level of satisfaction of the teaching staff of rural areas of Andalusia in what concerns the presence and use of ICT in teaching;
- Assess, additionally, the level of satisfaction of these professionals regarding the management of ICT in the scope of school organization;
- Analyze the general level of satisfaction of teachers in what concerns the role that, globally, these technologies play in the rural educational centers of Andalusia;
- Determine the existence of statistically significant differences in these levels of satisfaction (in the scope of teaching and school organization) according to the gender and age of the teaching staff; and
- Define directives and future lines of research in this field to optimize the integration of ICT in the rural areas of Andalusia.

### **2.2. Methodology**

This study was part of an extensive scientific project, carried out by the research group Analysis of the Reality of Education in Andalusia (*Análisis de la Realidad Educativa Andaluza* – A.R.E.A. / HUM-672) of the Department of Didactics and School Organization, of the University of Granada, supported by the Office of Science and Innovation. The main aim of this project was to evaluate the state of initial and constant training programs, their practical integration into the classroom and the satisfaction of the teachers of the rural schools of Andalusia with what concerns ICT.

#### **2.2.1. Sample**

The target population of the study comprised teachers who developed their professional occupation within the so-called *Colegios Públicos Rurales* – C.P.R. (Public Rural Schools) in Andalusia during the academic year of 2012/2013. In order to determine the size of the universe of the study, written requests were sent to the Ministry of Education of the Council of Andalusia. Unfortunately, we were not provided with the number of teachers or any data that would allow us to deduct it objectively. Thus, the size of the population is unknown.

The Ministry did, however, facilitate a census with the 126 C.P.R. that were, at that moment, part of the autonomous community of Andalusia, which led us to using the centers rather than the teachers as sampling units. Table 1 shows the proportion of these institutions present in each of the provinces of Andalusia.



**Table 1.** Population of C.P.R. in Andalusia

Province	C.P.R.	%
Almería	17	13.49%
Cádiz	9	7.14%
Córdoba	11	8.73%
Granada	47	37.3%
Huelva	10	7.94%
Jaén	17	13.49%
Málaga	14	11.12%
Sevilla	1	0.79%
<b>TOTAL</b>	<b>126</b>	<b>100%</b>

Source: own research.

### 2.2.2. Tools

In order to carry out the study, a questionnaire was developed with 127 closed-ended multiple choice items, designated as *Escuela Rural Protocolo de Nuevas Tecnologías* – ERPNT (Rural School Protocol of New Technologies), which was categorized into four subjects:

- Identification of the school and its localization / zone of influence (ERPNT – 1);
- Initial and constant training of the rural teaching staff on ICT (ERPNT – 2);
- Usefulness of ICT inside and outside the classroom, according to the teaching staff of the rural schools of Andalusia (ERPNT – 3); and
- Satisfaction of the teaching staff of Andalusia with ICT (ERPNT – 4);

In order to validate its content and structure, ERPNT was submitted to the analysis of 15 experts: five in-service teachers affiliated with two different C.P.R. of Andalusia, five teachers of the Department of Methods of Research and Diagnosis in Education of the University of Granada (U.G.R.) and another five teachers of the Department of Didactics and School Organization of the same institution, all of them experts in Educational Technology. The evaluation by the experts resulted in posterior modifications to the instrument, leading to the definitive version that was forwarded to the educational centers.

In what concerns the computation of the internal degree of consistency of the scale, Cronbach's  $\alpha$  coefficient was used (0.865).

Following the generally accepted assumption according to which a value equal to or higher than 0.7 in this index means that the tool is coherent (Abad & Vargas, 2002; Sánchez, 2007; Latorre et al., 2003; Cardona, 2002), it can be concluded

that according to the statistics obtained (0.834), this questionnaire's internal consistency (83.4%) is statistically significant. This certifies the reliability of the results obtained as a basis for drawing scientifically valid conclusions.

Similarly, the reliability of the sub-scale relative to the satisfaction of rural teachers with ICT (ERPNT – 4) was established, and its results are the subject of this study. The value of Cronbach's  $\alpha$  amounts to 0.898, which also grants it solid internal consistency.

ERPNT – 4 consists of 18 Likert-type intensity items, grouped in two main domains: teaching and school organization. The former, composed of nine questions, concerns the satisfaction of teachers with aspects related to the application of and interest in ICT. The latter, structured into eight questions, is centered mostly in the level of satisfaction concerning the organizational and management factors of ICT for their use in the C.P.R. Teachers had to answer each question by assigning it a unique value between 1 and 5, with 1 representing dissatisfaction and 5 high satisfaction.

Moreover, at the end of the sub-scale an additional item of similar nature was added, which measured the general degree of teachers' satisfaction, both personal and professional, with ICT. This question was analyzed independently and was not included in any of the previous scopes of the questionnaire. Table 2 highlights the key issues of the study and the code used to identify them in their analysis.

**Table 2.** List of items of the sub-scale ERPNT-4

TEACHING SCOPE	
CODE	DESCRIPTION
IANT	STUDENTS' INTEREST IN ICT MAKES YOU FEEL...
IANTA	STUDENTS' INTEREST IN ICT AS A LEARNING TOOL MAKES YOU FEEL...
IACL	STUDENTS' INTEREST AND GENERAL ATTENTION IN CLASS DUE TO ICT MAKES YOU FEEL...
MANT	THE IMPROVEMENT OF STUDENT LEARNING DUE TO ICT MAKES YOU FEEL...
MDNT	THE POSSIBILITY OF IMPROVING YOUR TEACHING WITH THE USE OF ICT IN WHAT CONCERNS METHODOLOGY, SELECTION, ORGANIZATION AND PRESENTATION OF CONTENT AND OTHER CURRICULAR ASPECT MAKES YOU FEEL...
RPNT	THE PROFESSIONAL RELATIONSHIP WITH THE COLLEAGUES OF OTHER CENTERS, POSSIBLE THANKS TO ICT, MAKES YOU FEEL...
EPNT	THE POSSIBILITY OF PERSONAL AND PROFESSIONAL ENRICHMENT DUE TO THE USE OF ICT MAKES YOU FEEL...

<b>TEACHING SCOPE</b>	
GTNT	THE IMPROVEMENT IN THE MANAGEMENT OF DAILY WORKING TIME DUE TO ICT MAKES YOU FEEL...
SNTD	IN GENERAL, THE DEGREE OF SATISFACTION THAT THE USE OF ICT GIVES YOU IN PERFORMING YOUR TEACHING WORK IS...
<b>SCHOOL ORGANIZATION SCOPE</b>	
<b>CODE</b>	<b>DESCRIPTION</b>
GPNT	THE EXTENT OF THE PRESENCE OF ICT IN YOUR EDUCATIONAL CENTER MAKES YOU FEEL...
SONT	THE ORGANIZATION AND MANAGEMENT OF ICT IN YOUR EDUCATIONAL CENTER MAKES YOU FEEL...
PMNT	THE BUDGET OF THE EDUCATIONAL CENTER ALLOCATED TO FOSTER THE PRESENCE AND MAINTENANCE OF ICT MAKES YOU FEEL...
SMTEA	THE POSSIBILITIES OFFERED BY THE ORGANIZATION AND MANAGEMENT SYSTEM OF ICT IN YOUR EDUCATIONAL CENTER FOR IMPROVING THE TEACHING-LEARNING PROCESS MAKE YOU FEEL...
RTMEA	THE TECHNOLOGICAL RESOURCES AT YOUR DISPOSAL (E.G. COMPUTERS, NETWORK CONNECTIONS) IN THE CONTEXT OF THE TEACHING - LEARNING PROCESS MAKE YOU FEEL...
ODANT	THE ORGANIZATION OF THE TEACHING STAFF OF YOUR EDUCATIONAL CENTER TOWARDS THE FULL USE OF ICT AT YOUR DISPOSAL MAKES YOU FEEL...
OTANT	THE TIME-MANAGEMENT POLICIES IN YOUR EDUCATIONAL CENTER TOWARDS THE FULL USE OF ICT MAKE YOU FEEL...
SOENT	IN GENERAL, YOUR DEGREE OF SATISFACTION TOWARDS THE ORGANIZATION OF ICT IN YOUR EDUCATIONAL CENTER IS...
<b>GENERAL SATISFACTION CONCERNING THE MANAGEMENT OF ICT IN THE EDUCATIONAL CENTER</b>	
<b>CODE</b>	<b>DESCRIPTION</b>
SGNT	IN GENERAL, YOUR DEGREE OF PERSONAL AND PROFESSIONAL SATISFACTION WITH ICT IS...

Source: own research

The ERPNT was forwarded to the teaching staff of the 126 C.P.R. by post, along with a stamped envelope for returning the answer and a letter detailing the particularities of the study and administration of the questionnaire. A total of 217 surveys were received in response, from 68 of these educational centers. This constitutes a response rate of 53.97% and a representative percentage, therefore, of all the surveyed schools.

In all the provinces participation ranged from 38.3% to 100%, which makes the sample statistically representative at this level by surpassing the 30% minimum that the contemporary scientific literature on the topic advocates (Abad & Vargas, 2002; Sánchez, 2007; Latorre et al., 2003; Cardona, 2002). Concerning the number of the teachers that participated in the study, it amounted to 217 (53.97% of all Andalusia), a number slightly inferior to the one obtained by Corchón (2005), who, in similar conditions, was able to study 255 professionals.

On receiving the answers from the study sample, the data from the surveys were processed through the elaboration of a matrix of 217 rows by 127 columns in ASCII support, using version 20.0 of the SPSS statistics software. For data treatment, the following approaches were used:

- *Analysis of Frequencies and Average of Items:* The calculus of the absolute and relative frequencies of the answers to each of the items of the ERPNT-4 sub-scale was carried out, as well as the determination of its arithmetic mean and typical standard deviation.
- *Analysis of Pearson's  $\chi^2$ Contingency:* Used in order to verify the possible existence of statistically significant differences between the levels of satisfaction of the surveyed teachers according to their gender and age. The confidence level assumed for the interpretation of the bilateral asymptotic significance was 95% (Lilliefors test,  $\alpha = 0.95$ ,  $p < 0.05$ ).

Some of the most relevant results obtained from the necessary analysis of the data can be found in the following section.

### **3. Discussion**

For the treatment of the data, the calculus of the most common statistical parameters was carried out, as stated before, concerning the answers obtained for each item of the ERPNT – 4 scale (absolute and relative frequencies, arithmetic mean, standard deviation). Table 3 presents these findings.

Table 3 points out, for instance, that the levels of moderate or high satisfaction are higher in all the variables that constitute the teaching scope (IANT – STND), being the influence of the ICT in the improvement of the relationship with colleagues of other centers (RPNT) the one that, nonetheless, less pleases these teachers (47.6%) and causes more indifference (39.4%).

The aspects that, on the other hand, satisfy them the most, are the ones related to the potential of ICT for the improvement of teaching in aspects such as the methodology, selection, organization and presentation of content (MDNT). In

**Table 3.** Mean and frequency analysis of the items of the ERPNT-4 scale

ITEMS	HIGH DISSATISFACTION		MODERATE DISSATISFACTION		NO SATISFACTION NOR DIS-SATISFACTION		MODERATE SATISFACTION		HIGH SATISFACTION		ANALYSIS OF MEANS	
	N	%	N	%	N	%	N	%	N	%	$\bar{x}$	$\sigma_x$
IANT	3	1.4	8	3.7	36	16.6	113	52.1	54	24.9	3.97	0.83
IANTA	6	2.8	8	3.7	48	22.4	110	51.4	42	19.6	3.81	0.88
IACL	2	1	11	5.3	55	26.6	99	47.8	40	19.3	3.79	0.84
MANT	5	2.4	6	2.9	53	25.4	109	52.2	36	17.2	3.79	0.84
MDNT	4	1.9	8	3.8	25	11.8	120	56.6	55	25.9	4.01	0.83
RPNT	14	6.7	13	6.3	82	39.4	70	33.7	29	13.9	3.42	1.02
EPNT	3	1.4	4	1.9	29	13.6	108	50.7	69	32.4	4.11	0.8
GTNT	3	1.4	8	3.8	47	22.4	106	50.5	46	21.9	3.88	0.84
SNTD	3	1.4	3	1.4	40	18.9	130	61.3	36	17	3.91	0.73
GPNT	34	15.9	42	19.6	52	24.3	75	35	11	5.1	2.94	1.17
SONT	26	12.3	47	22.3	67	31.8	57	27	14	6.6	2.93	1.11
PMNT	33	15.7	55	26.2	59	28.1	54	25.7	9	4.3	2.77	1.12
SMTEA	21	10	50	23.8	70	33.3	61	29	8	3.8	2.93	1.04
RTMEA	50	23.5	56	26.3	40	18.8	57	26.8	10	4.7	2.63	1.23
ODANT	30	14.3	48	22.9	78	37.1	48	22.9	6	2.9	2.77	1.04
OTANT	37	17.5	53	25	68	32.1	48	22.6	6	2.8	2.68	1.09
SOENT	28	13.2	54	25.5	69	32.5	55	25.9	6	2.8	2.80	1.06
SGNT	5	2.4	13	6.3	40	19.2	124	59.6	26	12.5	3.74	0.85

Source: own research.

this item, the proportion of individuals that are satisfied to some degree reaches 82.5%. Likewise, the opportunity for personal and professional growth that the use of these tools encompasses (EPNT) was considered by 83.1% of the respondents as moderately or highly satisfactory.

Nonetheless, in opposition to these results, the levels of satisfaction concerning school organization (items GPNT – SOENT) actually drop to evident dissatisfaction. This happens when we consider the technological resources available in the C.P.R. meant for the Teaching – Learning processes of the students (RTMEA), in which almost half of the individuals surveyed (49.8%) is moderately or highly unsatisfied. The same also happens in what concerns the scheduling management in these centers for taking full advantage of the potentialities of ICT (OTANT), viewed negatively by 42.5% of the teaching staff.

More precisely, the two items better valued by the rural teachers of Andalusia in what concerns the organizational aspects are the degree of presence of ICT in the centers (GPNT), with 40.1%, and the possibilities that the current management system of these technologies bring towards the improvement of the Teaching – Learning process of students (SMTEA), with 37.8%. Nonetheless, even in these aspects, the level of dissatisfaction is visibly higher than in the items related to the teaching scope.

On the other hand, in what concerns the general satisfaction of these teachers with the activity and presence of ICT in their centers (SGNT), 72.1% find themselves moderately or highly satisfied with the role that these tools play in their schools, in opposition to the remaining 27.9%, of whom only 8.7% show moderate or high dissatisfaction versus the indifference of the remaining surveyed teachers. This points out that, to a large extent, in the C.P.R. of Andalusia the use of ICT has been welcomed by the professionals in what concerns educational tasks. Of marked importance are the new possibilities for the carrying out of work-related tasks and the professional growth that these technologies enable, although the teachers still worry about their degree of presence or the technological endowment in these institutions.

Despite what has been presented so far, the contingency analysis is carried out all the same, motivated by the necessity to determine the existence of statistically significant differences in the levels of satisfaction studied in function of the gender and age of the surveyed teachers. In that sense and, following the above-mentioned research methodology, for each item of the subscale ERPNT – 4 the value of Pearson's  $\chi^2$  non-parametric statistics was computed, as well as its  $p$ -value for the bilateral asymptotic significance of the Lilliefors results, with a confidence level of 95% ( $\alpha = 0.95$ ,  $p < 0.05$ ).

## **4. Conclusions**

From a general perspective and, according to the results obtained from the application of the appropriate statistical indicators, the following are the most significant conclusions of this study:

- Teachers of the C.P.R. of Andalusia are largely satisfied (72.1%) with the level of presence and role of ICT in their own centers. Only a scarce 8.7% of the surveyed individuals shows a manifest dissatisfaction concerning this topic;
- Concerning the teaching scope, although the scores are fairly high in almost all the items, two stand out particularly: (1) the satisfaction concerning the possibility of improving teaching through the use of ICT in aspects such as planning, content organization and other curricular aspects, confirmed by more than 82.5% of the surveyed individuals; and (2) the possibilities of personal and professional growth that the teachers see, with the use of ICT in the classroom, supported by 83.1% of the sample;
- In what concerns school organization, average satisfaction scores are lower, showing a generalized level of moderate dissatisfaction in the large majority of the items. Of these, the technological resources available in the center to be used in the teaching–learning process and the efficient scheduling of resources for the full use of the ICT potentialities present the lowest values (49.8% and 42.5% respectively). The aspects of the dimension that the surveyed teachers are most satisfied with are, on the one hand, related to the possibilities that the organization and management system of ICT offers towards the improvement of the teaching–learning process, confirmed by 37.8% of the sample. On the other hand, 40.1% of the individuals valued the degree of the presence of these technologies in the center. It must also be pointed out that there is a group of teachers who, in a general way, feel neither satisfied nor dissatisfied concerning these questions. The percentage of this group ranges from 18.8% to 37.1%;
- With respect to the existence of statistically significant differences, their largest number was found in the teaching scope in which, by gender, the women are more satisfied than the men concerning the interest of students in ICT as a way of learning. Considering their age, the teachers aged between 31 and 50 are the ones that feel more satisfied with the possibilities that these technologies bring to their daily work, but also with how much these technologies contribute to the establishment of professional relationships with colleagues of other C.P. Rs. In the scope of scholar organization, differences could only

be found when analyzing genders separately: despite a certain division of opinions, the women are slightly more satisfied than the men concerning the management of ICT in their centers. Nonetheless, this difference, to a large extent, is due to the large proportion of the women who feel neither satisfied nor dissatisfied: a proportion that is higher than in the remaining questions.

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## **Researching the Association between Teachers and School Outcomes (Based on TALIS Data and Lower Secondary School Examination Results)**

### **Abstract**

The purpose of this paper is to identify potential links between information about teachers and the academic achievement of schools. Data regarding teachers, collected by TALIS (Teaching and Learning International Survey), is analysed simultaneously with school examination scores. There are some general considerations and conclusions based mostly on the analysis of linear regression coefficients.

As the presented relations apply to averaged school characteristics rather than individual characteristics of teachers or students, they should be interpreted with caution, mainly as statistical ones. ‘Teacher’ data from schools do not differ much and do not provide firm grounds for the identification of relations between them and the lower secondary school examination scores- which vary considerably. We should investigate the teacher and student level rather than use averaged school characteristics.

*Keywords: TALIS, teacher qualities, school examination results*

### **Background**

For several decades, a number of countries have measured academic achievement using more complicated, but more objective, tools than traditional grading by teachers. This continuously improved system of assessment of student knowledge and skills has led to the establishment of institutions of international renown.

Researchers focus not only on identifying the achievements of students, schools, regions and countries, but also on explaining how and why the results vary and the underlying nature of this differentiation. Hence, international research projects, which involve students and teachers from several dozen countries, have gained growing interest. The most widely recognised study on student achievement and skills is PISA. As part of this programme, sample groups of 15-year-old students were assessed in more than 60 countries in 2012.

One of the newer projects co-ordinated by the OECD and IEA is TALIS (Teaching and Learning International Survey), which focuses on the working conditions of teachers, their attitudes towards teaching and classroom practices. The first survey, which was conducted in 2008, is followed by another one in 2013. Researchers and education officials analyse the results of various projects, to identify any links between the data gathered in one project and the findings of other projects carried out by different teams.

The purpose of this paper is to compare, on a smaller, national scale, the 'teacher' indicators and data from TALIS with the academic achievement data of schools involved in TALIS, namely scores of their students from the lower secondary school examination (LSSE).

For several years, the added value in education (AVE) has been assessed for lower secondary schools in Poland, and this is also accounted for in this analysis.

**This paper tries to answer the following question: are there any associations between 'teacher' indicators at the school level and the academic achievement data of schools?**

This manuscript is a changed and shortened version of the report which is placed on the OECD page (OECD/TALIS/TALIS in research: R. Piwowarski, (2012) Teacher and School Achievement).

## **I. Methods and Data Characteristic**

The main goal of the 2008 survey (2013 too), was to provide data and analysis of some key aspects of schooling, such as:

- Teachers' professional development;
- teachers' beliefs about teaching and teaching practices;
- the role and functioning of school leadership (Creating Effective Teaching, 2009).

In Poland, a representative sample was selected from among 5,310 lower secondary schools, the selection criteria being school location (urban/rural), ownership

(public/non-public) and number of students (small/large). As in other countries, all special schools, schools for adults and schools with fewer than four teachers were excluded from the sampling procedure.

As a result, data from 172 lower secondary schools (and thus 172 principals) and 3,184 teachers were considered for further analysis (Piwowarski and Krawczyk 2009).

It should be remembered that the TALIS survey results are based on answers provided (marked) by respondents and thus represent only the opinions, views and beliefs of teachers and school principals.

## **1. Teachers (according to TALIS data)**

### **General characteristics**

In Poland, 76.3% of the teachers surveyed were female. In all the participating countries, the majority of school principals were male (55%), which means that the female domination observed in teacher positions decreases at higher levels of professional career. In Poland, 69% of the principals of the schools surveyed were female, which means that the disproportion between the share of female teachers and female principals was relatively small.

In nearly all the participating countries, the teaching staff is getting older, Italy and Austria having the least favourable situation in this respect. Poland still has a relatively good teacher age structure, as 50% of the teachers from the schools surveyed were under 40 years of age. In Poland, only 0.3% of the teachers had not completed higher education. Furthermore, Poland and the Slovak Republic had the highest rate of teachers with the Master's degree at 94 and 96.2%, respectively.

### **Professional Development**

Almost 44% of the teachers surveyed in Poland stated that they would like to "achieve more" in terms of their professional development. The fact that their needs were not fully satisfied was declared more frequently by the women than men (45% vs. 39%) and by younger teachers (under 40) than older ones (50% vs. 37%).

Relations between financial support and undertaking professional development were not obvious. Data analysis implied a negative relation between time spent on development and the costs unpaid by teachers: generally, the teachers who covered the costs of professional development themselves, either whole or in part, spent the highest number of days on their own development. This relation might suggest that in the majority of countries free training was unsatisfactory for teachers, so they attended additional paid forms of development. It seems that

Poland belongs to this group. Further analysis of the data collected implies that the teachers who paid the costs of their professional development, in whole or in part, were more frequently dissatisfied and would like more benefit from the paid forms of development.

Alarming, 39% of the teachers in Poland (41% in TALIS) wanted to take part in professional development, but no suitable training was available. This leads to the conclusion that offers of professional training should be subject to constant monitoring by both representatives of teachers and educational authorities.

### **Teaching Practices, Attitudes and Beliefs**

Teachers' practices, attitudes and beliefs about teaching may be related to students' academic achievement reflected in test results, added value or student motivation indicators.

The TALIS analysis was based on the differentiation between two opposing ideas about teaching, namely direct transmission beliefs and constructivist beliefs.

In Poland, like in the majority of countries, teachers believe that their task is not only to present facts and demonstrate how to solve problems, but also to support students in their active acquisition of knowledge. Variation (measured with variance) was relatively low, which means that this belief was shared by the majority of teachers in each country.

Three scales were formed to determine classroom practices used by teachers: a) teaching structuring, b) student-oriented practices and c) enhanced activities.

Data analysis indicates that in all the participating countries, including Poland, classroom practices were structured. As declared by the teachers, enhanced activities were undertaken least frequently.

There was a statistically significant relationship between the teachers' age and professional experience and their teaching beliefs with preference for direct transmission of knowledge or constructivism. This relationship varied in different countries. In Poland, it was unique mainly in high indices among young teachers (especially regarding direct knowledge transmission). However, the highest rates of both types of beliefs were observed in Poland in the group of teachers over 40–50 years of age. In general, the teachers who strongly supported constructivist beliefs declared more frequent use of student-oriented and enhanced practices. It seems, therefore, that pedagogical constructivism should be supported and its methods cautiously promoted. However, this may be hampered by traditional beliefs about the effectiveness of direct knowledge transmission. Finally, it is worth remembering the discrepancy between declared constructivist beliefs and the actual classroom practice (generally structuring).

### **School Leadership and Management**

Factor analysis was used to determine the leadership and management styles of the school principals involved in the TALIS survey.

Using five scales of principals' management actions, two school leadership styles were defined. Techniques of test item response modelling and factor analysis were used again. These two leadership styles are as follows:

- Instructional style (dominated by management for school goals, instructional management and direct supervision of instruction in the school);
- Administrative style (dominated by accountable management and bureaucratic management).

In Poland, school principals significantly more frequently exercise instructional leadership as opposed to the administrative style and female principals tended to adopt instructional leadership more frequently than male ones.

### **2. Lower secondary school examination score**

As in previous years, students leaving secondary schools had higher scores in the humanities than in mathematics and science (the maximum score of either part was 50).

The schools differed in their exam scores, i.e. in the arithmetic means of the scores of all their students, though the differences between lower secondary schools in rural and urban areas were decreasing. The rural schools continued to have a minor advantage over the schools in small towns with the population of 20,000 and below. There was still a considerable difference between the scores of public and private schools. Understandably, the mean scores of the schools varied less than the student scores.

In the analysis of the schools whose principals and teachers were included in the TALIS 2008 survey, a more objective procedure for the appraisal of LSSE scores of schools was adopted. In order to mitigate the potential random fluctuations of the scores of all lower secondary schools in Poland (including TALIS schools) in 2008, the mean value for three subsequent years (2006, 2007 and 2008) was considered as the standardised average score equal to 100.

### **3. Added value in education**

The system of external examinations introduced in Poland in 2002 for lower secondary schools and subsequently for primary and higher secondary schools started a heated debate, which came down to the question of whether or not it was an objective measure of students' academic achievement.

For a number of people, especially some journalists and politicians, the exam score reflected exclusively the outcome of teachers' and schools' efforts. Others

believed that although the nationwide examination system greatly contributed to the objective appraisal of students' academic achievement and was a better metric than grades, it remained far from being perfect. Clearly, student skills and knowledge are the product of several groups of factors: (i) individual personal characteristics, (ii) social and family background, and (iii) school-related pedagogical factors. Therefore, researchers kept searching for some additional tools for the appraisal of academic achievement.

The history of 'Polish' AVE is short, yet fruitful and sufficiently interesting (at the school level). To a great extent, the AVE index eliminates personal, social and cultural factors in student scores. As a result, both good and poor exam scores are not fully attributed to schools or teachers.

The following procedure was developed for estimating AVE for lower secondary schools:

1. The expected LSSE score is estimated on the basis of student scores from the sixth grade examinations in primary schools.
2. A difference between the actual LSSE score and the expected student score ("the remainder") is calculated.
3. The mean remainder, i.e. AVE, is calculated for a particular lower secondary school.
4. The confidence interval is determined for AVE (to estimate the measuring error) (Dolata, 2007).

Added value in education provides information on the mean gain (if positive) or loss (if negative) in student/school score compared to the expected score based on sixth grade test results. Hence, its scale is the same as for the sixth grade examination. The standardised LSSE scores (Poland's average score = 100, SD = 15) for three subsequent years 2006–2008 are analysed further in this paper.

## **II. Results and discussion- investigating the association between the teacher data and LSSE score/AVE**

It was assumed that the dependent variable is the mean LSSE score attributed to each school, whereas the independent variables are teacher data derived from the answers provided by the teachers in the TALIS questionnaire. It is important to point out that the schools surveyed, i.e. the mean results attributed to them, vary considerably in terms of LSSE scores and AVE, whereas the percentage distributions of 'teacher' indicators are somewhat diverse. Consequently, treating them in the form of averaged constructs as independent

variables may not always be efficient with respect to LSSE scores treated as the dependent variable.

Thus, it is important to remember that the presented relations apply to average school characteristics rather than individual characteristics of teachers or students. The analysis of these relations is based on linear regression coefficients.

### **1. Teachers and Selected Teacher Work Indicators**

- Schools with higher median teacher age also had a slightly higher mean LSSE scores.
- There was some relationship between the LSSE score and the percentage of teachers with the permanent employment status.
- There was also a statistically significant relationship between the median years of teachers' work experience and the LSSE score.

### **2. Professional Development of Teachers**

- It emerged that only the percentage of the teachers declaring participation in observation visits and research had a statistically significant, though weak, relation with the mean LSSE score of the students from the given school.
- There was a distinct relationship between some of the declared reasons preventing participation in more professional development activities and the LSSE score of the schools. This was fairly obvious: in the schools where the rate of the teachers who did not have the pre-requisites, e.g. qualifications, experience, seniority, was higher than in other schools the mean LSSE score was lower. Similarly, lack of employer support corresponded to a lower score.

### **3. Teacher Appraisal**

- In the 'Teacher Appraisal and Feedback' section of TALIS, only a few 'teacher' indicators related in any way to the LSSE score of the schools. If the percentage of the teachers declaring that they received external appraisal of their work 'less frequently than once every two years' or 'never' was higher than in other schools, the mean LSSE score of the school was lower.
- There was a positive relationship between the LSSE score of schools and the percentage of the teachers declaring that the following aspects were considered with high importance in their appraisal: 'Innovative teaching practices' and 'Student discipline and behaviour'.

Such a survey should be repeated at the teacher and student level in order to verify whether external appraisal is more effective than teacher appraisal by the principal or other teachers.



- Only one out of ten statements regarding the effects of teacher appraisal included in the regression model and marked ‘Strongly agree’ corresponded to the school mean score to a similar extent. This single statement related to the LSSE score concerns persistently underperforming teachers. If the rate of teachers declaring that such teachers would be dismissed was higher, the LSSE score of the school was also higher.

#### 4. Teacher Beliefs about Teaching and Classroom Practices

- Most relationships between teacher declarations or characteristics (independent variables) and the LSSE score and AVE were identified in the section regarding teaching beliefs, attitudes and practices. It was the result of the most detailed questions and thus the largest pool of information received from teachers.
- Neither the direct knowledge transmission characteristics nor constructivist data show the highest magnitude of the relationship with the school score. There were a total of four such non-profiled statements in the survey. The LSSE score of schools had the strongest relationship with the rate of teachers agreeing with the statement ‘Good performance means performance that lies above the previous achievement level of the student.’ An almost equally strong relationship, though reciprocal, was identified with the percentage of teachers in the school who agreed with a corresponding statement on ‘poor performance’. The schools where the rate of teachers who strongly agreed with the statement ‘Poor performance is a performance that lies below the previous achievement level of the student’ was higher scored an average was lower at the LSSE.

In this section there were notable, but considerably weaker associations with added value in education which were generally the strongest for the variables/ characteristics discussed above.

There was a slightly weaker positive relationship between the percentage of teachers who strongly agreed with the statement ‘Teachers know a lot more than students; they should not let students develop answers that may be incorrect when they can just explain the answers directly’ and the mean LSSE score of the school. AVE is associated with this variable in a similar way, though to a lesser extent.

- The activities indicating teacher collaboration generally had very weak associations with the mean LSSE scores of schools. The exception was in the schools with a higher rate of teachers who frequently ‘ensure common standards in evaluations for assessing student progress’ or ‘discuss and

coordinate homework practice across subjects'. The mean LSSE score in such schools was higher.

- Out of four items constituting the basis for forming teachers' profile in terms of self-efficacy, only one emerged to be statistically related to the mean LSSE score of schools. The schools where the rate of teachers agreeing with the statement 'I feel that I am making a significant educational difference in the lives of my students' was higher, scored higher at the LSSE.
- Similarly, only one out of four statements which formed the teacher-student relation indicator was associated with the school score, but to a weaker extent. In the schools where the rate of teachers who strongly agreed with the statement 'In this school, teachers and students usually get on well with each other' was higher, the LSSE score was also higher.
- There was some relationship between classroom discipline and the LSSE score of the schools. In the schools where the rate of teachers who strongly disagreed with the statement 'When the lesson begins, I have to wait quite a long time for students to calm down,' the LSSE score was lower. Naturally, like in a number of other items, this might simply be a statistical relationship rather than a causal link, but it might also indicate that sometimes silence in the classroom may not contribute to better student achievement. In any case, this potential link was of small significance.

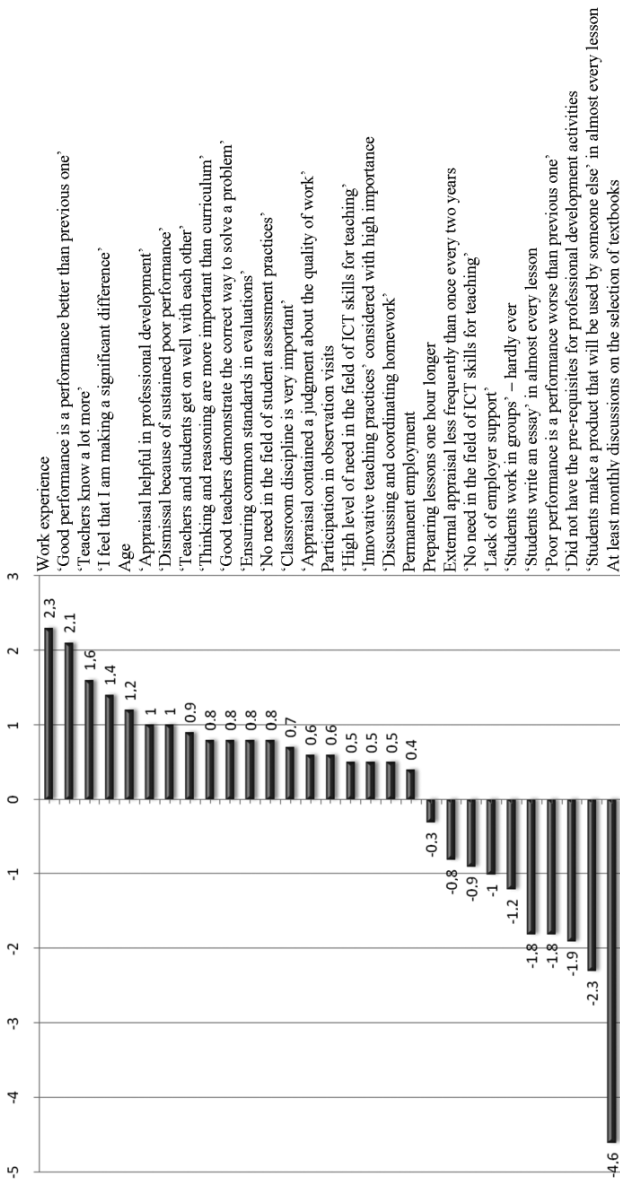
## **Conclusions**

An attempt to identify relationships between the information about Polish lower secondary school teachers obtained from the TALIS survey and the academic achievement of schools measured with the mean LSSE score has only partially met the researcher's expectations in terms of clear and strong associations which allow for firm conclusions.

The detailed analysis of statistical indicators demonstrated that the associations described are not numerous and generally weak. Nearly all of them are based on linear regression coefficients. These relations should not be interpreted as causal links also for another important reason: the presented relations concern averaged school characteristics rather than individual characteristics of teachers or students.

Since schools do not differ much in terms of teacher characteristics, 'teacher' data from schools do not provide firm grounds for identification of relationships between them and the lower secondary school examination score or added value

Figure 1. Magnitude of relationships between the teacher data and the mean LSSE score of schools



Source: prepared by R. Piwowski

in education. There are, of course, significant differences between schools in terms of LSSE scores and AVE.

Two statements, not mutually exclusive, can be made with respect to the observed facts:

- Firstly, more controversial: Teachers are not the main factor which differentiates the academic achievement of schools and students; this statement might be an important argument for the advocates of the theory dismissing the strong influence of the school, teachers, curricula, etc., and stressing the importance of personal characteristics and family, social and cultural background.
- Secondly, more of methodological nature: Such aggregated (averaged) teacher data may not 'form relations' with the student/school achievement. What is the meaning of this paper? In terms of methodology and, partly, research, it seems to be useful to a certain extent, as it clearly demonstrates that we should look for alternative methods to find a reliable answer to the question about the magnitude of the impact of teachers/schools on the student/school achievement. This leads to an important conclusion, though difficult to implement in methodological, organisational and political terms, **that in any such surveys we should investigate the teacher and student levels rather than use averaged school characteristics, which are an aggregate product of LSSE scores of numerous students and work of several teachers, as well as a number of other factors, sometimes even more important, which are often beyond teachers' control.**

The significance of the above-discussed relationships has been shown in an aggregate graph. Some of these relations are obvious and some may be interesting for researchers. However, there is also a number of relationships for which it is difficult to suggest a reasonable explanation. This applies especially to some reciprocal relations, plotted left of the vertical axis, that correspond to a negative impact on the academic achievement. One should also remember that the presented LSSE score increments/decrements refer to the mean level of 100.

### List of abbreviations used

AVE – Added value in education

IEA – The International Association for the Evaluation of Educational Achievement

LSSE – Lower secondary school examination

OECD – Organisation for Economic Co-operation and Development

PISA – Programme for International Student Assessment

SD – Standard deviation

TALIS – Teacher and Learning International Survey

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## Exploring EFL Teachers' Perspectives of Professional Knowledge and Teaching Efficacy in Vocational High Schools

### Abstract

The presented study was conducted to investigate vocational high school EFL teachers' professional knowledge and teaching efficacy from teachers' perspectives. Data were collected through a questionnaire and analyzed by frequency distribution, t-test, ANOVA, Pearson correlation and stepwise regression. The results indicated that teachers have higher performance on professionalism and attitude to professional knowledge; teaching and class management in teaching efficacy. A significantly positive correlation was found between EFL teachers' professional knowledge and teacher efficacy. Teachers reported that professional skills, professionalism, and attitude in professional knowledge were significant predictors of teaching efficacy. Professional knowledge helps to shape effective teaching.

**Keywords:** *vocational high school; EFL teachers; professional knowledge; teaching efficacy; Taiwan*

### Introduction

Even though learning English dominates most Western and Eastern countries and prevails in the EFL and ESL language teaching contexts (Hütter, Smit & Barbara, 2009), the English teacher's education has always been given importance in schools. Yet, the English teacher's education has always been connected with the certification and recognition of qualified teachers (Brumfit, 2006). Qualified

teachers play a significant role in the functioning of vocational education. They contribute to the development of the vocational education system by ensuring teaching quality and self-efficacy as well as students' learning and achievements (Güven, 2010). In today's modern society, teachers holding different characteristics and perspectives about teaching, teacher professional knowledge and teaching efficacy play a significant role in classrooms. Especially, in Taiwan's vocational education context, there are more than 100 vocational high schools of various types, such as High Schools of Industry, High Schools of Commerce, High Schools of Agriculture, etc. (Huang & Fu, 2010).

## **Research Problem**

Teacher professional knowledge has been bound to specific contexts and curricula, and has influenced cognitive processes in learners that can promote learning (Wette, 2010). Elbaz (1983) described the components of professional knowledge as self, the milieu of teaching, the subject matter, curriculum development, and instruction. Grossmann (1990) further categorized teacher professional knowledge into general pedagogical knowledge, subject matter knowledge, pedagogical content knowledge, and knowledge of context. The professional knowledge of EFL teachers is an important aspect of EFL teaching and teacher expertise, one that is often not acknowledged. Day and Conklin (1992) classified the professional knowledge of English teacher education into four major types: content knowledge, pedagogical knowledge, pedagogical content knowledge, and support knowledge. Huang (2004) indicated that English teachers' education must include professional knowledge, which means English ability training and TESOL courses including syllabus design, lesson planning, teaching methods, and multi-assessment ability. Lu (2005) analyzed the professional knowledge of the English teacher as general knowledge, professional knowledge, educational professional knowledge, and educational professionalism. Qing (2009) wrote that English teachers have to reflect, analyze, and adjust or change their practice whenever it is necessary in the English classroom. The purpose of this paper is to report the influences of vocational high school EFL teachers' professional knowledge on teaching efficacy in terms of teachers' perceptions. To sum up, the English teacher's professional knowledge in this paper involves basic English ability, which refers to four skills of English ability; professional knowledge, which refers to EFL teachers' being equipped with related knowledge and conception in English teaching; professional skills which refer to EFL teachers' familiarity with teaching ability, lesson planning, syllabus design,

and teaching methods or strategies; professionalism and attitude (the conception of counseling, teaching attitude, teaching beliefs, and teaching professionalism).

In addition to English teachers' professional knowledge, teaching efficacy is also a crucial factor for achieving success in EFL instruction. Bandura (1997) defined teaching efficacy as judgment of the teacher's capabilities so as to bring about the desired outcomes of student engagement and learning, even in those students who may be difficult or unmotivated. Pekkanliegelt (2009) also stated that teacher efficacy was related to teachers' beliefs about their ability to affect students' learning outcomes. Eslami and Fatahi (2008) reported that there were two types of teachers' perceived efficacy, Personal Teaching Efficacy (PTE) and General Teaching Efficacy (GTE). According to the above literature, the teaching efficacy of English teachers has generally been divided into three types: teaching design and method, teaching and class management, and teaching assessment. The inclusion of teaching design and method implies that teachers need to have strong concepts of teaching objectives, content, and strategies. Teaching and class management refers to teachers' necessity to know how to control their lesson plans and successfully manage classes as well as maintain good interactions between the teacher and students. Teaching assessment refers to students' being tested for their learning outcomes and teachers' helping students who may have difficulties learning and be unmotivated. Research on teaching efficacy has produced similar findings. For instance, Ashton and Webb in 1986 found that teachers with high teaching efficacy had a positive influence on teaching activity, effort, and productivity. Khairani and Razak's (2010) research showed that student teachers with high teaching efficacy beliefs were more productive, competent, confident, and successful.

## **Research Focus**

In Taiwan, college students who want to be EFL teachers in vocational high schools are required to complete education courses at colleges or universities. They have to complete rigorous training classes in order to promote higher professional and teaching quality according to the policy of Taiwan's Teacher Education. Based on Articles 7 and 9 in the Teacher Act of Law and Regulations Database of The Republic of China, college students who want to be EFL teachers in secondary education also have to pass examinations in the teacher education centers of universities. After completing these requirements, they have to work as intern teachers at a high school for six months before applying for an official teacher certification examination. However, the professional knowledge of vocational high school EFL



teachers and its relationship to teaching efficacy in Taiwan are often neglected. Therefore, the following research questions were posed to guide the study.

1. What type of professional knowledge do EFL teachers perceive as necessary for teaching vocational high school English?
2. What type of teaching efficacy do EFL teachers perceive as necessary for teaching vocational high school English?
3. Does the professional knowledge of EFL teachers have a significant impact on teaching efficacy in EFL classes in vocational high school?
4. What are the professional knowledge factors that predict variations in EFL teachers' teaching efficacy in vocational high school?

## **Research Methodology**

### **Research Sample**

There are 111 public and private vocational high schools with approximately 1,110 EFL teachers in Taiwan. Therefore, the cluster sampling technique was used in this study. Firstly, according to their location, vocational high schools were divided into northern, central, and southern ones. Secondly, vocational high school EFL teachers were phoned and asked to participate in this study. Then, questionnaires were sent to those teachers who had agreed to participate. All the participants were provided with written information about the nature and purpose of the research project. As a result, 484 questionnaires were sent and 353 teachers provided anonymous responses. The return rate was 72.93%. However, there were 28 invalid questionnaires. The final data set contained responses of 325 EFL teachers from 56 public and private vocational high schools spread throughout the island of Taiwan.

### **Instrument and Data Analysis**

This study used two scales consisting of 80 items on EFL Teacher Professional Knowledge Scale (ETPK) and EFL Teacher Teaching Efficacy Scale (ETTE). ETPK was revised from the Elementary School English Teacher Professional Knowledge Questionnaire developed by Huang (2004) and the Educational Professionalism in Teacher Professional Knowledge and Cognition Questionnaire developed by Yang (2005). ETTE was adapted from English Teacher Teaching Efficacy Scale developed by Lu (2005) and Class Climate in Teacher Teaching Efficacy Questionnaire developed by Hsieh (2004). The scales of ETPK and ETTE were examined by three experts to find inadequate items. Revised scales were then conducted in the pilot study.

The pilot study comprised 91 EFL teachers from 10 public and private vocational high schools. There were four factors in the scale of ETPK, including basic knowledge, covered by 8 items; professional knowledge, 18 items; professional skills, 10 items; and professionalism and attitude, 10 items. The results showed that the instrument content was valid for measuring EFL teachers' professional knowledge and teaching efficacy. After the pilot study, 2 items in the professional knowledge were deleted due to disturbingly low values in the item analysis of SPSS. The reliability of ETPK was 0.980 and 0.961, 0.962, 0.959, and 0.936 for each type, respectively.

There were three factors in the scale of ETTE, including teaching design and teaching method, covered by 15 items; teaching and class management, 11 items; and teaching assessment, 11 items. After the pilot study, 1 item from the teaching design and method was deleted due to disturbingly low values in the item analysis of SPSS. The reliability of the ETTE was 0.981 and 0.959, 0.959, and 0.958 for each category, respectively. In the formal study, these two scales were based on a 5-point Likert-type scale, ranging from 5 points for "strongly agree" to 1 point for "strongly disagree," which measured the participants' perceptions of their own professional knowledge and teaching efficacy. Data were collected through a questionnaire and analyzed by frequency distribution, t-test, ANOVA, Pearson correlation and stepwise regression.

## **Research Results**

### **Vocational High School EFL Teachers' Professional Knowledge**

As shown in Table 1, the vocational high school EFL teachers have a high perception on professionalism and attitude ( $M=3.87$ ) and low on professional knowledge ( $M=2.73$ ). It indicates that the teachers place a high value on the teaching attitude, teaching beliefs, and teaching professionalism and teacher professional knowledge was neglected, such as the theory and knowledge of English teaching, linguistic, and literature.

**Table 1.** Descriptive Analysis on English Teacher's Professional Knowledge

EFL Teacher's Professional Knowledge (ETPK)	Mean	SD
basic knowledge	3.28	0.72
professional knowledge	2.73	0.74
professional skills	3.02	0.80
professionalism and attitude	3.87	0.66

### Vocational High School EFL Teachers' Teaching Efficacy

As shown in Table 2, teaching and class management was the most regarded. The teachers have a high perception on teaching and class management ( $M=3.72$ ) and low on teaching design and method ( $M=3.55$ ) in teaching efficacy. The results showed that the teachers perform better on items in the category of class management and interaction between the teacher and students than a well-designed lesson plan before class.

**Table 2.** Descriptive Analysis on English Teacher's Teaching Efficacy

EFL Teacher's Teaching Efficacy (ETTE)	Mean	SD
teaching design and method	3.55	0.67
teaching and class management	3.72	0.68
teaching assessment	3.65	0.70

### Correlation Analysis of Vocational High School EFL Teachers' Professional Knowledge and Teaching Efficacy

The third research question of this study aimed to explore if vocational high school EFL teachers' professional knowledge and teaching efficacy had significant correlations. Therefore, the Pearson product-moment correlation coefficient was computed on ETPK and ETTE. The correlation matrix is presented in Table 3. The results indicate that the teachers' professional knowledge has a moderate correlation with the teachers' teaching efficacy. Obviously, EFL teachers need to be equipped with basic English ability, professional knowledge related to the theory of English teaching, teaching skills, and enthusiastic teaching attitude, teaching belief and professionalism.

**Table 3.** Correlations on ETPK and ETTE

ETTE	teaching design and method	teaching and class management	teaching assessment	Overall ETTE
ETPK				
basic knowledge	0.58**	0.51**	0.49**	0.57**
professional knowledge	0.63**	0.49**	0.52**	0.59**
professional skills	0.72**	0.57**	0.58**	0.68**
professionalism and attitude	0.71**	0.74**	0.68**	0.77**
Overall ETPK	0.76**	0.65**	0.65**	0.74**

$p < 0.1$  \*\*

Regression Analysis of ETPK on ETTE

The fourth research question aimed to explore if vocational high school EFL teachers’ professional knowledge has a significant impact on teaching efficacy in EFL classes in vocational high school. A stepwise multiple regression analysis was conducted to investigate which types of teacher professional knowledge significantly contributed to the prediction of English teachers’ teaching efficacy. Table 4 summarizes the results of the stepwise regression analysis.

**Table 4.** Stepwise Regression of ETPK for Overall ETTE and each ETTE type

Type 1: teaching design and method				
Predictor Variable	R	R Square	R2 change	F change
professional skills	0.730	0.533	0.113	77.916***
professionalism and attitude	0.807	0.652	0.119	109.545***
Type 2: teaching and class management				
professional skills	0.589	0.347	0.057	27.876**
professionalism and attitude	0.761	0.580	0.233	177.624***
Type 3: teaching assessment				
professional skills	0.594	0.353	0.062	30.705***
professionalism and attitude	0.721	0.520	0.167	111.008***
Overall ETTE				
professional skills	0.694	0.482	0.091	56.434***
professionalism and attitude	0.821	0.675	0.193	189.599***

N=325    \*\*p<0.01    \*\*\*p<0.001

Table 4 shows that only two factors, namely professional skills and professionalism and attitude, from the vocational high school EFL teachers’ professional knowledge contributed significantly to the prediction of the English teachers’ teaching efficacy. After the regression analysis, however, basic English ability and professional knowledge in the teachers’ professional knowledge did not show significant differences due to disturbingly low values. This result indicates that these two factors do not contribute significantly to the prediction of English teachers’ teaching efficacy.

## **Discussion and Conclusions**

The presented study was undertaken to address issues concerning (1) the professional knowledge and teaching efficacy of vocational high school EFL teachers, (2) the relationship between professional knowledge and teaching efficacy, and (3) the

professional knowledge factors that predict the variation in teaching efficacy. Concerning professional knowledge, as the results indicated, the participating teachers perform better on the professionalism and attitude. It implies that the vocational high school EFL teachers believe that they have a good level of knowledge on the self-teaching attitude, teaching belief, and professionalism to enhance teaching efficacy in the EFL class. This corresponds to the results of Wette's (2010) research, which confirmed the importance of the teacher's teaching ability in order to monitor and respond to feedback from learners about their developing understanding, and about any difficulties they have experienced with course content. Teachers must also have strong concepts of teaching ability and take responsibility for their own teaching career so as to promote their teaching efficacy to motivate students' learning.

In addition, we found a positive relationship between the vocational high school EFL teachers' professional knowledge and teaching efficacy. The two factors, teachers' professional skills and professionalism and attitude in EFL teachers' professional knowledge can be used as predictors of teachers' teaching efficacy. This implies that teachers with higher professional skills, professionalism and attitudes tend to have a higher level of teaching efficacy. This corresponds to Stansbury & Zimmerman (2002) and Halford's (1999) study, which confirmed the significance of establishing a strong belief in teaching efficacy when teachers enter the teaching profession, because they have to acquire theoretical knowledge to promote their professional teaching skills and create their own professionalism and attitude in order to have professional teaching ability to motivate students' learning. It can also be said that EFL teachers' professional knowledge is relatively effective in improving and developing EFL teaching efficacy.

This study has several recommendations for further research. First of all, it is to be noted that this is the first attempt at exploring the relationship between EFL teachers' knowledge and their self-efficacy in a national context. Thus, this study should be replicated to find out whether similar results can be obtained elsewhere. In addition, since this study was conducted only with vocational high school EFL teachers, further research needs to be carried out with EFL teachers at other levels in order to compare the results. Moreover, professional knowledge and teaching efficacy are multifaceted constructs, which vary across contexts and cultures. It would be of interest to compare the differences between native and nonnative EFL teachers for insight into research on EFL teachers' knowledge and their self-efficacy.

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## Pre-service Mathematics Teachers' Financial Literacy

### Abstract

Pre-service teachers' knowledge in the field of finances is crucial as it is a pre-requisite to the development of students' financial literacy. This paper describes a quantitative study focusing on testing pre-service mathematics teachers' financial literacy at the start of their studies. 47 pre-service mathematics teachers were assigned a test of financial literacy within the frame of this study.

**Keywords:** *financial literacy, financial education, pre-service teacher training*

### The need for improvement of financial literacy – background to the study

Over the last few years the number of indebted households has been continually growing in the Czech Republic. This growth goes hand in hand with the inability of these households to settle their debts, resulting in seizure or personal bankruptcy. The main cause of this unfortunate situation is often the low level of the debtor's financial literacy.

Governments all around the world have expressed concerns about the low level of financial literacy of their citizens. The potential magnitude of the consequences of lack of financial literacy has come to surface during the recent financial crisis. It comes as no surprise that the Czech government has also tried to address the issue of improvement of financial literacy. At the end of 2007 it published the document "The system of development of financial literacy in primary and secondary schools" (MEYS CR 2007). This document introduces concrete standards of financial literacy that establish the aims of financial education in primary and secondary schools in the Czech Republic. These standards have been implemented in cur-



ricular documents of the Czech education system, called Framework Educational Programmes (FEPs) for the particular type and level of school. The implementation of FEP in secondary general education (pupils aged 15–19) was carried out in the years 2008 and 2009 (MEYS CR 2008). The standards are reflected especially in the following two educational areas: 'Humans and the world of labour' and 'Mathematics and its application'.

"The area 'Humans and the world of labour' defines knowledge and skills related to management of financial resources, free market economy, national economy and the role of state in the economy, which are to be mastered by secondary school students. The area 'Mathematics and its application' introduces the mathematical apparatus prerequisite if the laws of operation of financial relations are to be grasped by the students and analysis of the offered products is to be possible." (Dvořáková et al. 2011)

The implementation of the standard of FEP in basic education (pupils aged 6–15) was carried out at the beginning of the year 2013 (MEYS CR 2013). The standards for basic education are classified in these areas: 'Humans and society' and 'Mathematics and its application'.

In 2009 representatives of faculties that train pre-service primary and secondary school teachers were called upon to incorporate the standards of financial literacy into the contents of relevant pre-graduate study programmes. The faculties answered this demand and implemented the issue in their study programmes. For instance, the Faculty of Education of the University of West Bohemia in Pilsen offers its students the subject "Financial mathematics", the Faculty of Education of Palacký University in Olomouc a course of "Personal and family finance" and the Faculty of Education at the University of South Bohemia a course of "Introduction to finances". Each of these subjects has a different conception, but their common goal is "obtaining competence of orientation in the field of money and price issue. The student is also able to manage his/her personal and/or family budget responsibly, including the management of financial assets and liabilities in consideration of changing life situations." (MF CR 2010). The students should also gain competence in improving the financial literacy of their future pupils.

The intention of this article is to briefly introduce the conception of the subject "Introduction to finances" and the results of the research. These results should contribute to the innovation of a digital tutorial environment within this subject. This could serve as an example of best practice to other universities. We asked the following questions for this purpose: What is the level of the newcomers' financial literacy in the study branch "Introductory teacher training course in mathematics"?

(“Introduction to finances” is a compulsory subject for students of this branch). Which of its components are developed sufficiently? Which components of financial literacy should be further developed in pre-service teacher training?

The need for the innovation of a digital tutorial environment has resulted from the fact that the students already familiarized with the world of finances at secondary schools started entering Czech universities in the 2011/2012 academic year. This means that their knowledge in the field of finance should be on a higher level than the knowledge of students entering universities in previous years.

The issue of the financial literacy of young people has been researched in many world studies (e.g., Lusardi et al. 2010, Regecová & Slavíčková 2010).

## **Pre-service teachers’ financial literacy – a study**

### **The conception of the subject *Introduction to finances***

There are two notions that form the background to our research: financial education and financial literacy. OECD materials from 2005 state the following:

“Financial education is the process by which individuals improve their understanding of financial products and concepts; and through information, instruction and/or objective advice develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being and protection.” (OECD 2005)

The definition of financial literacy as used in this paper was also developed by the OECD:

“Financial literacy is the combination of consumers’/investors’ understanding of financial products and concepts and their ability and confidence to appreciate financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being.” (OECD 2005)

The above-mentioned definitions and considerations on the teacher’s role at different school levels became the starting point for design of the course “Introduction to finances”. Special teaching materials were created based on the standards of financial literacy and with respect to the fact that most people including pre-

graduate students find it difficult to get insight into the basic notions of the world of finances, into their interrelations and functions. One of the reasons for our failure to understand the world of finances is the permanently changing offer of financial products. Moreover, descriptions of these products are often unclear, insincere and confusing. Our effort to find possibilities to help students understand resulted in the question whether this process could be supported by a special, designed for these purposes, learning environment. An environment that would be interactive, that would demonstrate to students all the various needed calculations, but that would also enable them to carry out these calculations repeatedly, e.g., with different initial parameters; an environment that would be flexible enough to be easily adaptable to the current state of offer of financial products.

A comprehensive set of hypertext materials was created with the purpose of getting a clearer insight into the aforementioned problems. The objective of these teaching materials is to develop students' ability to solve model problems in the field of financial management. The substantial elements of this set are such teaching texts that can be updated at any time to reflect the current situation on the financial market, supplemented by examples of problems from everyday financial practice solved in the environment of computer algebra programme Maple 13 (the so-called smart documents). These allow the user to carry out repeated calculations with the original or altered values of the input parameters. Examples of these documents can be found in Hašek, Petrášková (2008, 2009, 2010a, 2010b).

Although the subject "Introduction to finances" is intended to be taught to pre-service lower secondary school teachers (for pupils aged 11–15), its structure was created in accordance with the standards of financial literacy for upper secondary school (pupils aged 15–19). The reason is that lower secondary teachers must be oriented in this field and they should be capable of preparing pupils for the development of their skills in this branch.

It is obvious that financial literacy is closely linked to mathematical literacy. If the level of carrying out arithmetical computations (mathematical literacy) is deficient, the person cannot be expected to be successful in the world of finances. Huston argues that 'if an individual struggles with arithmetic skills, this will certainly impact on his/her financial literacy' (Huston 2010).

The standards of financial literacy testify that mathematical literacy is prerequisite. Financial literacy standards for upper secondary schools include the following areas (MEYS CR 2007):

- **Money**

*Content:* payment (in both domestic and foreign currency), price generation, inflation.

*Gained skills:* the student is able to use the most frequent payment tools, to change money according to the actual exchange rate, to generate a price as a sum of costs, profit and VAT (value added tax), to explain the price differences with respect to consumer, place, period, etc.; the student recognizes the usual tricks hidden in prices (a price without VAT, etc.) and various false advertisements; he/she explains the nature of inflation and its fallout on incomes, deposits, loans and long-range financial planning; gives examples of defense against inflation.

- ***Household management***

*Content:* household budget.

*Gained skills:* the student differentiates regular incomes and expenses from the one-off ones and draws up a simple household budget with respect to them; he/she can offer a solution of the deficit household budget and knows what to do with the surplus household budget.

- ***Financial products***

*Content:* surplus money, money shortage, insurance.

*Gained skills:* the student offers a way of handling surplus money (saving, offers which include a state contribution, bills of exchange, real estate, etc.); he/she chooses the best product in which to invest the surplus money and gives an explanation; the student finds the kind of credit that suits him/her best; the student considers the way of ensuring the credit and explains a way of keeping from insolvency; he/she explains the ways of interest rate definition and the difference between the interest rate and the annual percentage rate (APR); he/she chooses the best insurable product with respect to his/her needs.

- ***Consumer rights***

*Content:* consumer protection rules; patterns of arrangements.

*Gained skills:* through an example the student explains the possibilities of claiming consumer rights (purchase of goods and services, including financial products); he/she shows the possible effects of ignorance of an arrangement including its general conditions.

## **Methodology**

The survey was based on a questionnaire consisting of 5 questions (cf., Appendix). These questions were adopted from the national survey of financial literacy in the USA (FINRA 2011). Some of these questions were also used in national surveys of other OECD countries.

The questionnaire had a form of a multiple choice test. One of the options was always 'I don't know'. Only one answer was correct. No calculations were needed (with the exception of Question 1 – stating the proportion in percentage). The aim of the questions was to prove the following:

- Question 1 – Understanding interest rate and compound interest.
- Question 2 – Understanding inflation.
- Question 3 – Understanding the relationship between interest rate and bond price.
- Question 4 – Understanding the relationship among interest, maturity and amount of repayment (related to mortgage credit).
- Question 5 – Understanding diversification of risk.

The data were collected at the beginning of the course 'Introduction to finances'.

## **Studied sample**

The research was carried out with 47 pre-service lower secondary school teachers of mathematics (for pupils aged 11–15). The pre-service teachers were in their 1<sup>st</sup> year of the teacher training branch "Introductory teacher training course in mathematics" at the Department of Mathematics of the Faculty of Education of the University of South Bohemia in České Budějovice and they were registered for the course "Introduction to finances". Their age range was 19 to 21.

The students participating in the survey were familiarized with the financial issue in the field corresponding to the demands of the Czech curricular documents for secondary schools. The subject matter is in accordance with the aforementioned standards of financial literacy for upper secondary schools.

## **Data processing**

The study was quantitative. Data processing was carried out in the following steps:

- stating the absolute and proportional relative frequency of correct answers to each question,
- stating the mode of the random variable which is represented by the number of correct answers,
- stating absolute frequency of all combinations of correct answers,
- error analysis.

## **Results and observation**

Table 1 shows absolute and proportional relative frequencies of correct and incorrect answers to the questions. It is easy to see that the respondents were most successful in answering question 1. Producing the correct answer to this question required that the students understood the principle of compound interest, but also a sufficient level of mathematical literacy – work with percentages. The respondents were also relatively successful in questions 2 and 4. Question 2 is based on their understanding of the concept of inflation and its relation to interest rates. If these variables are given in percentage, or as decimal numbers, they are easy to compare. Question 4 expected the students to have some idea of a repayment plan of a mortgage, or any loan. They should know: (a) what proportion of each payment goes to paying of the interest and which to repayment of the debt; (b) that prolongation of the payback period leads to a decrease in monthly instalments, but increase in the interest paid; (c) lowering of instalments is not directly proportional to the increase in interest. The successfulness in answers to questions 1, 2 and 4 may be attributed to the fact that secondary school students spend considerable time (in the curricular topic arithmetic and geometric sequence) deriving formulae for simple and compound interests, saving and for calculation of instalments when paying off a given debt. When deriving these formulae they start from real life situations and proceed to the common model. Thus, the students gain a general idea of functioning of some areas of the world of finances.

What the students found most difficult were questions 3 and 5. Both these questions are related to securities. It can be assumed that problems to find a correct solution are connected with the lack of the students' experience with these financial products. Their experience is most often limited to the use of student bank accounts and internet banking, choice of the best telephone operator or use of debit or credit cards.

**Table 1.** Test evaluation

Question	Number of correct answers (Percentage results)	Number of incorrect answers (Percentage results)	Answer 'Do not know' (Percentage results)
1 Compound interest	42 (89.4%)	5 (10.6%)	0 (0%)
2 Inflation	33 (70.2%)	11 (23.4%)	3 (6.4%)

Question	Number of correct answers (Percentage results)	Number of incorrect answers (Percentage results)	Answer 'Do not know' (Percentage results)
3 Bond price	5 (10.6%)	38 (80.9%)	4 (8.5%)
4 Mortgage credit	33 (70.2%)	13 (27.7%)	1 (2.1%)
5 Diversification of risk (share)	28 (59.6%)	9 (19.1%)	10 (21.3%)

Table 2 shows the number of students in proportion to the correctly answered questions. We can see that most frequently the students answered correctly 3 out of 5 questions. Number 3 corresponds to the mode, median and average of the random variable, which is in this case the number of correctly answered questions in the questionnaire. It is quite interesting to mention here that the average number of correctly answered questions was 3 also in the national survey in the USA (FINRA 2011), which worked with 28 146 respondents (approximately 500 per state, plus D.C.) of different age, sex, ethnic origin and education. However, the difference in the composition of the respondents in the two surveys makes any objective comparison impossible.

**Table 2.** Absolute frequency of the number of correctly answered questions

Number of correctly answered questions – Number of students					
0–0	1–3	2–10	3–20	4–12	5–2

Table 3 shows that the most frequent triad of correctly answered questions was 1, 2, 4. The number of students who answered this way is presented in Table 3. Table 3 shows all the possible combinations of correct answers and the number of students who answered in each particular way.

**Table 3.** Combination of correct answers and the number of students

Correctly answered questions	Number of students	Correctly answered questions	Number of students	Correctly answered questions	Number of students
1, 2, 3, 4, 5	2	1, 4, 5	4	2, 5	0
1, 2, 3, 4	0	2, 3, 4	0	3, 4	0
1, 2, 3, 5	1	2, 3, 5	0	3, 5	0

Correctly answered questions	Number of students	Correctly answered questions	Number of students	Correctly answered questions	Number of students
1, 2, 4, 5	10	2, 4, 5	3	4, 5	2
1, 3, 4, 5	1	3, 4, 5	0	1	2
2, 3, 4, 5	0	1, 2	5	2	0
1, 2, 3	0	1, 3	0	3	0
1, 2, 4	7	1, 4	3	4	0
1, 2, 5	5	1, 5	0	5	1
1, 3, 4	1	2, 3	0		
1, 3, 5	0	2, 4	0		

## Error analysis

As the students were relatively successful in questions 1, 2 and 4, the following error analysis will focus on questions 3 and 5. The absolute frequency of incorrect answers is shown in Table 4. Symbol \* indicates the correct answer.

**Table 4.** Evaluation of wrong answers

Question	Answer- Number of answers				
3	(a)- 24	(b)*- 5	(c)- 6	(d)- 8	(e)- 4
5	(a)- 9	(b)*- 28	(c)- 10	-	-

Question 3: If the students marked the wrong answers (a), (c), they seemed to understand the effect of interest rate on the price of investment tools. But they did not know the direction of the change in price. Selecting the wrong answer (d) was more serious. One of the reasons why students chose this wrong answer can be the fact they have no idea of how financial markets work. It must also be taken into account when analysing these mistakes that it is possible the respondents do not understand the notion of bond.

Question 5: Incorrect answers signal that 40% of the students have no idea of how mutual funds function (diversification of risk). Again these problems might have been caused by ignorance of the notion of stock and shares and the notion of mutual fund. This hypothesis is supported by the relatively high frequency of answers (c) I don't know.



## **Conclusions of the survey**

Let us now answer the questions posed at the beginning of the survey:

*What is the level of the newcomers' financial literacy in the study branch "Introductory teacher training course in mathematics"?*

The level of financial literacy of the mathematics students at the beginning of their studies at the Faculty of Education at the University of Bohemia is average. It can be assumed that this level corresponds to their experience with financial products – use of student bank accounts, debit and credit cards, payment for some services (e.g., for mobile phone). All these cases involve interest rates, inflation, ability to pay off a loan (credit card).

*Which of its components are developed sufficiently?*

The following components are sufficiently developed: (a) knowledge of the principle of simple and compound interest; (b) knowledge of the impact of inflation on savings; (c) principle of paying off a debt.

*Which components of financial literacy should be further developed in pre-service training?*

The results of the survey clearly show that it is necessary to focus the training of pre-service mathematics teachers on stock markets. As the existing interactive hypertext aid includes no interactive documents with model situations from the area of investments into stock and shares, they must obviously be created. Although there are some interactive documents tackling trade with debenture bonds, they presuppose that the student is aware of the fact that any change in the interest rate affects the price of the bond. The survey clearly shows that this is not always the case. In consequence, the existing documents must be appended by new documents showing solutions to model situations showing the factors influencing the price of a bond.

## **Conclusion**

Nowadays everybody must face the ever increasing offer of financial products and services that are often not transparent and confusing. Only a person with a satisfactory level of financial literacy is able to make the right decisions in this situation. Furthermore, the young generation, in contrast to the generation of their parents, must be more responsible in their decisions about investments in order to secure their pension and necessary healthcare. This puts demands on teacher training in this area as teachers must understand how the world of finances

functions. Only then are they able to prepare their students for being successful in the financial world.

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## **Appendix – Test of Financial Literacy**

1. Suppose you deposit CZK100 on a savings account with a guaranteed interest rate of 2% per year. You neither deposit nor withdraw any money after that. How much will there be in your account in five years? (a) More than CZK110. (b) Exactly CZK110. (c) Less than CZK110. (d) I don't know.
2. Suppose that the interest rate in your savings account is 1% per year and inflation is 2% per year. How much will you be able to buy with the money on your account in one year time? (a) More than today. (b) Exactly the same. (c) Less than today. (d) I don't know.
3. If interest rates rise, what will happen to bond prices? (a) Rise. (b) Fall. (c) Stay the same. (d) No relationship. (e) I don't know.
4. A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less. (a) True. (b) False.  
(c) I don't know.
5. Buying a single company's stock usually provides a safer return than a mutual fund.  
(a) True. (b) False. (c) I don't know.

## Subjective Evaluation of Demands on Performance of Teacher Professional Activities

### Abstract

The paper presents partial results of the research identifying demands on the performance of professional competences in the school practice in teachers<sup>1</sup> with various length of practice and in student teachers. Results are compared with the findings and results of the national report in the OECD international report TALIS 2008.

**Keywords:** *professional standard, functional literacy, professional competences, educational activities, subjective demands on performance, international research studies*

### Introduction

In the 90<sup>s</sup> of the 20<sup>th</sup> century the essence of teacher professionalism in the creation of school curricula began to be identified through *key competences*. We perceive them as the means and goals of education, enabling individuals to successfully involve in social interactions while preserving their own independence in a familiar environment, but also in new unforeseen situations. Today, current preparation of future teachers accentuates a shift from the traditional model of *minimum competence* (transfer of content to pupils) to the model of broad professionalism (*the reflective practitioner*), considering the teacher as the basis

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<sup>1</sup> Due to the common use of the terms pupil, student and teacher in the masculine gender also to designate female teachers, pupils and students, we do not use a gender-sensitive language.

for improvement in the quality of education, considering him self-developing, self-reflecting, able to analyse his own activity, pupil needs and to respond to them properly (Korthagen, F., 1992; Schön, D.A, 1987; Lasley, T.J., 1992). Teacher training is competence-based in the context of functional literacy so that state contents of education are compatible with the goals of education in EU and OECD countries. In this context, we are aware of the fact that the competence-based approaches have their limits and are specific in their context.

### **Professional Competences in the Teacher's Work**

The new approaches also change requirements on teachers, related to the level of the development of their *professional competences* defined as observable and demonstrable competences in the teaching practice, required for qualified performance of educational activities. Within their practical training, students of the teaching profession should encounter activities directly effecting formation of their professional competences in behaviour, cognition and experience, with the aim to match the emerging professional competences with the requirements of a proposed and discussed professional standard created academically, thus possibly including errors arising from idealization of the teaching profession.

### **Professional Activities of the Teacher**

The Slovak model of professional competences is simple and contains clear designations and contents of professional competences further elaborated into specific skills observable in specific *educational activities* (what the teacher does).

In general, older and current opinions of experts in teacher professional activities also agree with foreign authors (Portner, H., 2008; Jones, J., 2010; Cooper, J.M., 1995) that examination of teacher professional activities requires analysis of the teacher's real activities constituting his performance. We define some common educational activities in the system of educational activities, in the performance of which teachers of different school types and grades as well as future teachers (students of education faculties) declare various levels of difficulties. Some of them are analysed in the paper. We proceed from findings of the pedeutological research into the profession and professiography of the primary education teacher (B. Kasáčová – P. Tabačáková, 2010), the objective of which was to identify specific professional activities of primary education

teachers within the conditions of educational reality, to record and discover their structure, and to determine the ratio of particular activities in relation to full professional performance and to outline a professiogram draft. In their further research of the pre-primary and primary education teaching profession (2011), the author with the project team were looking for answers to the questions what teachers really do, how they can identify their professional activities and how they perform them during and out of their working hours and how much time they spend doing them.

### **Demands on Performance of Educational Activities in the Context of Research Findings**

The body of the paper presents some results of our own research in 2012 (Rovňanová, L., 2013), the purpose of which was to find out how respondents with various length of teaching practice perceive and assess demands on the performance of specific educational activities in the conditions of school reality. Due to the limited size of the paper, only the results of the first ten, in the respondents' opinion the most demanding educational activities, are presented out of the list of 31 educational activities assessed by the respondents and out of them, in more detail, those where the respondents agreed and which were also comparable with the results of other research.

### **Research Sample and Method**

The research sample (N=318) was not representative and consisted of respondents with teaching practice of different lengths: full-time students in the 2<sup>nd</sup> year of the Master's course without experience (only that within various types of practical training attended during their studies) from various branches of study at the Faculty of Education (n=66), Faculty of Humanities (n=57) and Faculty of Natural Sciences (n=35) of Matej Bel University in Banská Bystrica (N=158) and teachers (N=160) of secondary education ISCED2 (n=100) and ISCED3 (n=60) from various regions of Slovakia, with prevalence of the region of Banská Bystrica. Qualifications were neglected. The sample was composed mostly of women (67.61%). Two questionnaires of our own design were used for both respondent groups.

## Results

For comparison, Table 1 shows the order of 10 most demanding educational activities according to the research findings of S. Bendl (1997) and O. Šimoník (1994). Matching results of the compared studies are in bold letters.

**Table 1.** Demands on Teachers' Educational Activities

	S. Bendl (1997, N = 177)	O. Šimoník (1994, N = 141)
1	working with non-achievers	working with non-achievers
2	<b>maintaining discipline in the classroom</b>	<b>maintaining discipline in the classroom</b>
3	applying individual approach	<b>retaining pupils' attention</b>
4	<b>retaining pupils' attention</b>	diagnosing pupil personality
5	evaluating and marking pupils	<b>motivating pupils</b>
6	selecting methods for upbringing	individual communication with pupils' parents
7	<b>dealing with disciplinary offences</b>	conducting meetings with parents
8	<b>motivating pupils</b>	adequate responses to unexpected development of lessons
9	working with above-average pupils	<b>dealing with disciplinary offences</b>
10	meeting obligations of upbringing	activating pupils

P. Urbánek (1997) conducted research into students after their continuous teaching practice. He found out educational activities in which they had difficulties and compared their opinions with their mentors' opinions on their performance. We arranged the results in the order in Table 2. They match the compared studies in four activities.

**Table 2.** Demands on Students' Educational Activities according to P. Urbánek

	P. Urbánek (1997, N = 85)
1	curriculum timing
2	evaluating pupils
3	properly formulating learning tasks and questions
4	maintaining pedagogical documentation
5	adjusting teaching to the pupil's age
6	<b>retaining pupils' attention</b>
7	<b>dealing with disciplinary offences</b>
8	<b>maintaining discipline</b>
9	<b>motivating pupils *</b>
10	organizing individual work of pupils *

\* added by mentors

For our research, 31 educational activities were processed (also those occurring in the above results) and presented to the respondents to identify a subjective level of demands on specific educational activities, regularly performed within the teaching practice, on the scale from 0 to 6, where: 0- I perform always without difficulties, 1- I have difficulties only exceptionally, 2- sometimes, 3- often, 4- very often, 5- I perform always with difficulties, 6- I perform with difficulties and need help. On the basis of their opinions, educational activities were identified which they manage without difficulties within the practice and in which, on the contrary, they have difficulties and need support in their further development. Table 3 shows the first ten in the order. The majority of the difficulties concerned the social, relation-forming aspect of the process of education. We obtained similar results as the compared research, only with the activities in a different order. It is surprising that some of them, considered demanding by the theory of education (explanation of the teaching stuff, evaluation...), were marked as little demanding by the students. We agree with j. Průcha (1997) and O. Šimoník (1994) that it is a case of a simplified understanding of such activities, relating to insufficient experience and self-reflection.

**Table 3.** Demands on Educational Activities- original research by L. Rovňanová (done in 2012)

	Teachers ( n = 160)	Students (n = 158)
	1 work with pupils with special educational needs	work with pupils with special educational needs
	2 work with non-achievers	timing the curriculum throughout the whole school year*
	3 dealing with disciplinary offences	individual communication with parents*
	4 not only to teach, but also to bring up, develop personality through the content	maintenance of school documentation *
order	5 maintaining discipline during lessons	dealing with disciplinary offences*
	6 selecting methods for upbringing	work with non-achievers*
	7 retaining pupils' attention	exercising pedagogical supervision*
	8 activating pupils	diagnosing the pupil's personality
	9 diagnosing the pupil's personality	not only to teach, but also to bring up, develop personality through the content
	10 applying individual approach to pupils	selecting methods for upbringing

\* Students have **minimum or no experience** in the activities: 10.76% of the students had no experience in dealing with disciplinary offences and as many as 40.51% had no experience in exercising pedagogical supervision of pupils.

The comparison results of both groups of respondents' opinions are presented, together with descriptive statistics, in Table 4 including those opinions where both



groups agreed (6): 1- work with pupils with special educational needs, 2- work with non-achievers, 3- dealing with disciplinary problems and offences, 4- using content as a means of upbringing and development of the pupil's personality, 5- selecting methods for upbringing, 6 – diagnosing the pupil's personality.

**Table 4.** Demands on Educational Activities (1-6)- Descriptive Statistics

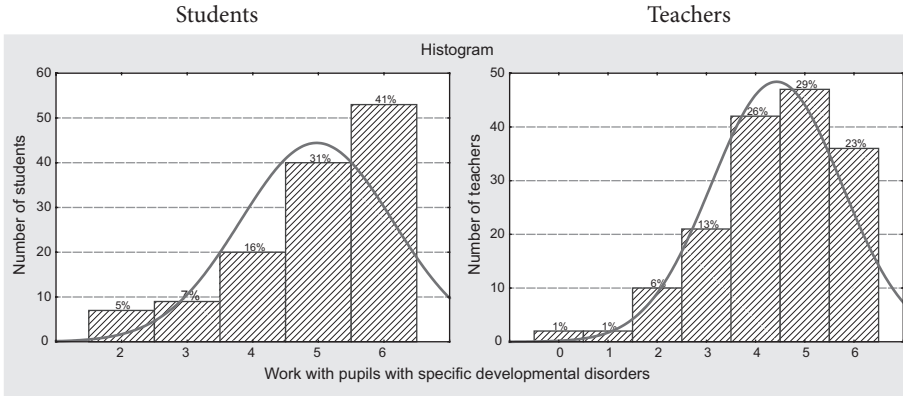
ED activities	Teachers n=160						Students n=158						Mann-Whitney U test <i>p-value</i>	Spearman's correlation <i>rs</i>		
	mean	median	mode	number. mode	variance	standard deviation	original order	mean	median	mode	number. mode	variance			standard deviation	original order
1	4.40	5	5	47	1.738	1.318	1	4.95	5	6	53	1.342	1.158	1	0.00020	-0.19617
2	2.89	3	3	57	1.409	1.187	2	3.10	3	3	54	1.455	1.206	6	0.20638	-0.05763
3	2.48	2	2	62	1.031	1.015	3	3.26	3	2	37	2.534	1.592	5	0.00002	-0.20853
4	2.27	2	2	67	1.078	1.038	4	2.47	2	2	65	1.321	1.149	9	0.19939	-0.05057
5	2.16	2	2	80	1.013	1.007	6	2.36	2	2	57	1.310	1.144	10	0.12370	-0.06224
6	1.93	2	2	73	0.945	0.972	9	2.63	2	2	57	1.191	1.113	8	0.00000	-0.29853

In both groups of respondents, the first place on the list of activities difficult to perform was occupied by the **work with pupils with special educational needs** (1).

The value of  $p = 0.00020$  indicates the occurrence of a statistically significant difference and the value of Spearman's correlation  $r_s = -0.19617$  a correlation of the length of teaching practice and demands on performance in that activity- the longer the practice, the fewer the difficulties. University training in inclusive education is still insufficient. Graphic comparison is given in comparative histograms, Graph 1.

Today, classes are common in the school practice, with individual integration of pupils subject to special-education diagnostics, with various difficulties- from developmental learning disorders, physical handicaps to ADHD Syndrome, or Asperger's Syndrome and other behavioural deficits. This group includes also talented and gifted pupils. There is an increasing number of classes with a high number of children from marginalized Romany communities and socially disadvantaged environments. Working with them requires specific competences that are, according to V. Belková (2010), still insufficiently developed during the university training of future teachers- despite more than twenty years of effort by experts accentuating the need for education of all teaching staff (those in training for the profession as well as those already in service).

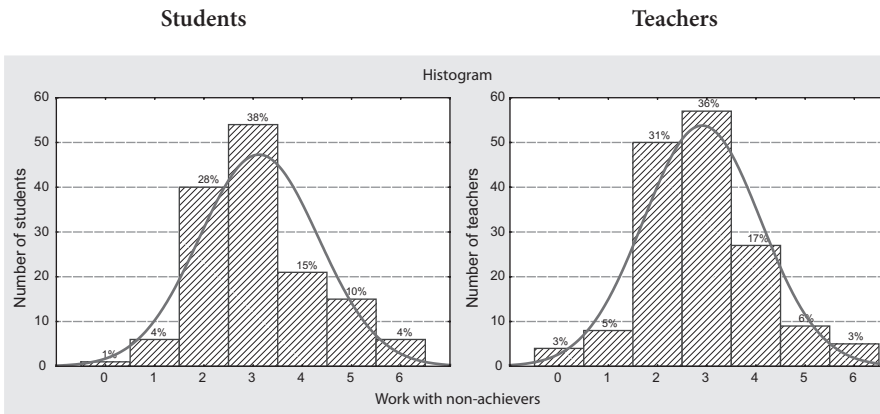
**Graph 1. Comparative Histograms: Work with Pupils with Special Educational Needs**



A special group of pupils are non-achievers (2). Both groups of respondents, but particularly the teachers, state that work with them is demanding- this activity is in the second place in the overall order. We see the cause in the everyday experience of the teachers confronted with the problem of choice of effective teaching strategies supporting the shift of non-achievers to achievement that would match their developable dispositions. Success in this activity is directly connected with the teacher’s reflection, self-reflection, diagnostic competences and preparedness for using them in the school practice as effectively as possible (Kouteková, M., 2007; Hupková, M., 2006).

There are neither statistically significant differences in the above activity, nor connection of demands on the activity with the changing length of teaching practice (Table 4). Graphic comparison is shown in the comparative histograms, Graph 2.

**Graph 2. Comparative Histograms: Work with Non-Achieving Children**



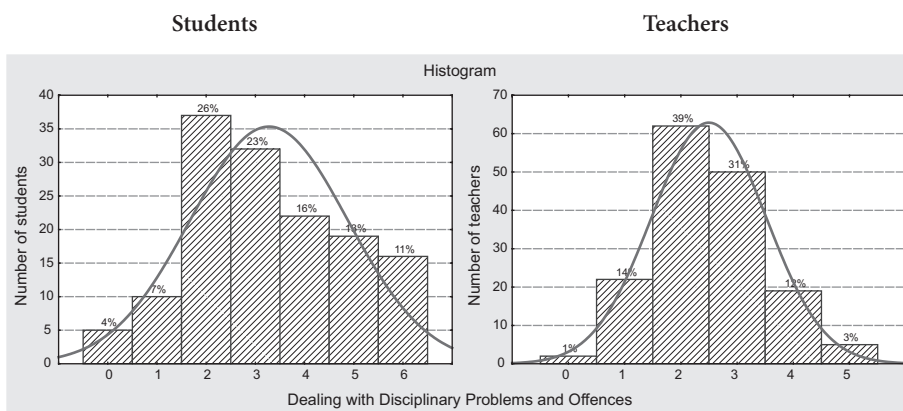
School teachers' serious problem is pupil discipline. It is perceived by parents, teachers, but also by pupils, and maybe even more critically than by the teachers. Activities connected with pupil discipline belong to the important areas of educational needs of teachers in practice, as well as student teachers.

This fact is also supported by the results of the international research by OECD TALIS 2008 (2010). We state, in agreement with the authors of the national study (Koršňáková, P., Kováčová, J., 2010) that discipline has a significant influence on the course and effectiveness of teaching; it affects the climate in the classroom and mutual relations between the teacher and the pupils, as well as among the pupils.

Maintaining discipline in the classroom and during breaks involves dealing with disciplinary problems and offences (3). The difference is at a high level of statistical significance ( $p = 0.00002$ ) and there is also a connection between the length of teaching practice and demands on the performance of this activity- the longer the practice the lesser the difficulties (the value of Spearman's correlation  $r_s = -0.20853$ ).

Graphic comparison for this educational activity is in the comparative histograms, Graph 3.

**Graph 3.** Comparative Histograms: Dealing with Disciplinary Problems and Offences



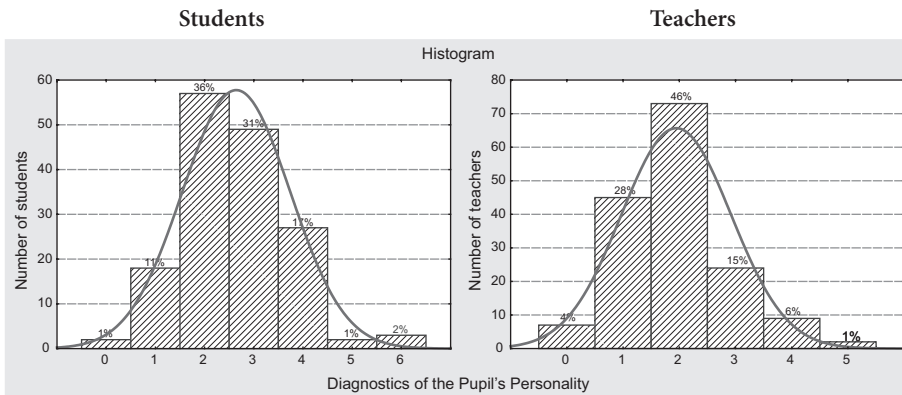
Maintaining discipline in the classroom is considered one of the most demanding educational activities not only by teacher graduates, but also by teachers with various length of teaching practice. According to S. Veenman (1984), up to 85% of the respondents from western countries, the USA, Canada and Australia, positioned *maintaining discipline in the classroom* in the first place of problematic activities in the teacher's work. J. Vašutová (2007, p. 58) states that before attending practical training, student teachers are concerned the most about not being

able to win respect, maintain discipline in the classroom and respond properly to non-standard situations. Guiding pupils during lessons and breaks is connected with the teacher’s personality type, while, according to S. Kariková (1999), the same have more dimensions and various effects on the development of the pupil’s personality. A successful teacher has reasonable authority in the classroom, uses appropriate upbringing strategies, methods for a particular situational educational context and structure of the classroom. Pupils’ behaviour at school is not an isolated phenomenon, to regulate which a few strategies and procedures suffice, but a complex process requiring excellent diagnostic competences in teachers to learn about their pupils, enough time and other factors considerably influencing the climate in the classroom. School discipline is the goal, means and result of education. It is influenced by requirements on pupils in the family and at school, mainly in the management of self-control and conscious discipline. If they mutually synergically complement each other, the teacher’s work is simpler. If there is a discrepancy in the requirements on discipline between the family and the school, the teacher’s work at school is much more demanding. The importance of preventive socio-educational work with pupils was indicated also by I. Emmerová (2012), accentuating the need to capture mainly problem pupils and subsequently to work with them intensely.

Diagnostic competences (6) belong to the most demanding activities, on which success in the performance of all other activities depends. Graphic comparison for this activity is presented in the comparative histograms, Graph 4.

The difference is statistical at a very high level of significance ( $p = 0.00000$ , in round figures) and there is also a connection between the length of the teaching

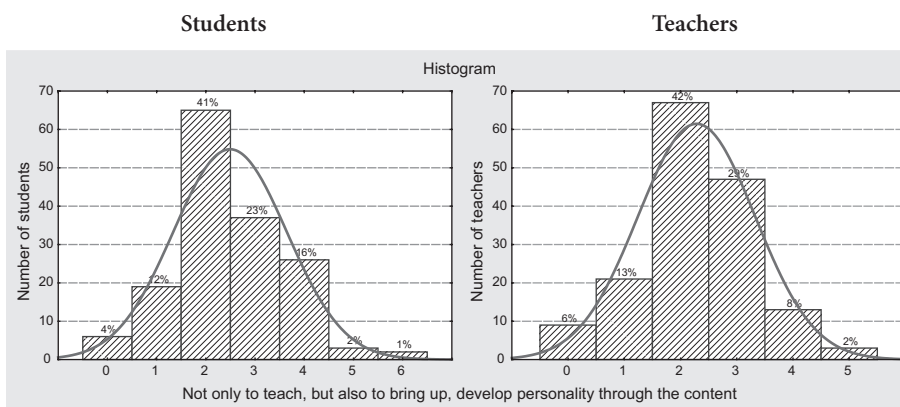
**Graph 4.** Comparative Histograms: Diagnostics of the Pupil’s Personality



practice and demands on the performance of this activity: the longer the practice, the fewer the difficulties (value of Spearman's correlation  $r_s = -0.29853$ ).

Diagnostic competences in the context of learning about the pupil make it possible to create optimum conditions for pupils' effective learning. Diagnostic competences are closely connected with the selection of an optimum method of upbringing. The following histograms, Graph 5 and Graph 6, illustrate our findings in the use of content as a means of upbringing and the development of the pupil's personality (4) and selection of methods for upbringing (5). Neither statistically significant differences, nor any connection between demands on the performance and changing length of teaching practice were found there. It is important to realize that the contents of qualification subjects are also means for upbringing and the development of the pupil's personality. By proper didactical use of the content a creative teacher is able to create a favourable working climate in the classroom and to prevent disciplinary problems.

**Graph 5.** Comparative Histograms: Content as a Means for Upbringing and Development of the Pupil's Personality

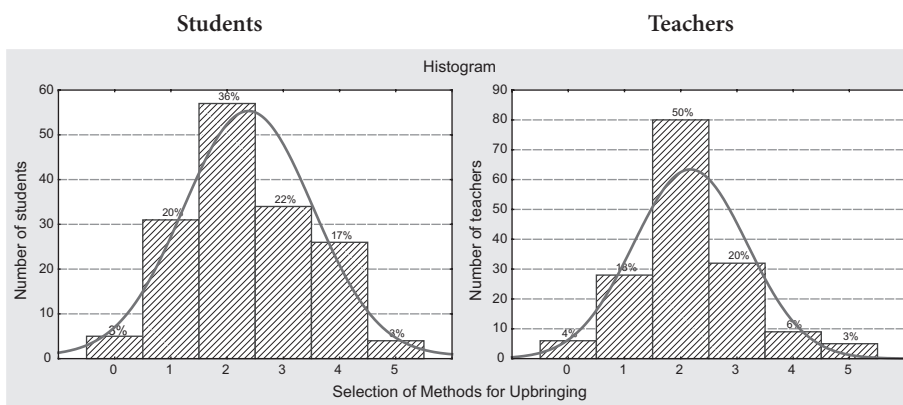


Based on the values of Spearman's correlations in Table 5, we state that a connection between the decline of difficulties in the performance of an educational activity and the increasing length of teaching practice was confirmed only in the educational activities no. 1, 3 and 6. All educational activities also positively correlated with each other: difficulties in the performance of one educational activity were confirmed by difficulties in the one with which it was compared.

The above-mentioned research findings reflect some difficulties of the respondents in practice, at the same time confirming and supplementing other similar

research. Their analysis indicates some shortcomings in the current teacher training and in continuing education.

**Graph 6.** Comparative Histograms: Selection of Methods for Upbringing



**Table 5.** Correlation Table (Spearman's Correlations): Educational Activities 1- 6, age, length of the respondents' practice and the activities with each other

	Age	Practice	1	2	3	4	5	6
Age		0.9255	-0.2216	-0.0908	-0.2447	-0.2706	-0.0711	-0.3127
Practice	0.9255		-0.1962	-0.0576	-0.2085	-0.2518	-0.0622	-0.2985
1	-0.2216	-0.1962		0.4836	0.4023	0.3649	0.3156	0.3739
2	-0.0908	-0.0576	0.4836		0.4550	0.4675	0.4502	0.4977
3	-0.2447	-0.2085	0.4023	0.4550		0.4866	0.4418	0.4673
4	-0.2706	-0.2518	0.3649	0.4675	0.4866		0.4418	0.4673
5	-0.0711	-0.0622	0.3156	0.4503	0.4418	0.6616		0.5619
6	-0.3127	-0.2985	0.3739	0.4977	0.4673	0.5737	0.5619	

Legend: 1 – work with pupils with special educational needs, 2 – work with non-achievers, 3 – dealing with disciplinary problems and offences, 4 – using content as a means of pupil upbringing and personality development, 6 – pupil personality diagnostics

## Conclusions

The research findings lead us to the inevitable orientation of teacher pre-graduate training to the development of developable dispositions of the teacher, real skills linked to a specific context of educational situations so that they manage

to deal with and reflect on new, non-standard situations flexibly and creatively. It is a way of teacher functional literacy formation. It does not appear automatically or suddenly, but is built in a gradual process of the teacher's career development (K. László, 2010).

It would be naive to think that we will create perfect teachers only by a well-thought out organization of pre-graduate and post-graduate training. No matter how we try to train graduates, the final form of their change into teachers is in the sole power of the real practice and the teachers themselves. In this process, health and fitness, intelligence, motivation for the teaching profession, personality traits and working conditions play an important role.

It follows from the above that future teachers should be led to a deeper knowledge of educational situations and arrive at their understanding based on professional reflection and self-reflection of their educational activities under the supervision of experienced instructors and teacher trainers during their studies, later, in service, under well-trained mentors' supervision, and a good offer of educational programmes in continuing education.

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**Special  
Pedagogy**



## **Assessment of Science in Special Education Schools: Teachers' Perceptions and Practice**

### **Abstract**

A shift from traditional methods of teaching science to modern and better suited to pupils can be noticed in Slovenian primary schools. They should also be followed by assessment both in regular primary schools and special education schools. The purpose of this study was to find out the perceptions of special education teachers about their own practice of science assessments and their actual practices. A questionnaire and authentic written tests were used for the research. Comparative analysis revealed considerable inconsistency between perceptions and practices. The greatest differences were found in the cognitive levels of knowledge and process skills. The research results raise teachers' awareness and thus enable changing of their practices.

*Keywords: assessment, process skills, cognitive levels, science education, special education.*

### **Introduction**

Until 1991, science was taught in Slovenia using a traditional approach, with a distinct emphasis on knowing facts. However, science teaching in primary schools started to change considerably with the TEMPUS: Initial Science Development international project. Fact-based knowledge was joined by process skills. The constructivist conception of learning and teaching, active forms and methods of work, and the development of process skills and abilities (Hus, 2012) started to

be enforced. The changes were also demonstrated by international comparative studies.

There are many definitions of science knowledge or scientific literacy. Even significant and comprehensive international comparative studies, such as TIMSS and PISA, have no uniform definition. The most basic is the division into knowledge of facts and process knowledge, whereby the knowledge of facts refers to scientific concepts and process knowledge refers to various process skills. The concepts are formed on the basis of individual facts and are upgraded to principles (Goldston & Downey, 2013, p. 40). Bloom's taxonomy (1956) is most frequently used to determine cognitive levels. It specifies six different levels: knowledge, comprehension, application, analysis, synthesis, and evaluation. Although revised taxonomies exist as well (Anderson & Krathwohl 2001), Bloom's taxonomy was used in this research since it is best known to Slovenian teachers. Goldston and Downey (2013) divided Bloom's categories into lower cognitive levels (knowledge, comprehension, and application) and higher cognitive levels (analysis, synthesis, and evaluation). Similarly, there is no uniform definition of process skills. Based on Harlen (1992) and Goldston and Downey (2013), a list comprising 13 process skills was formed for this research: observing, collecting, recording and interpreting data, comparing, sorting, classifying, ordering, measuring, investigating, predicting, experimenting, hypothesising, inferring, and communicating. The list includes many different process skills, since their diversity needs to be presented to teachers to enhance their awareness of process skills.

Teachers, however, can also see modern forms of learning and teaching as a problem that a Slovenian teacher described as follows: *"If I encouraged pupils to develop process skills rather than accumulate facts I encountered problems when I wanted to assess the pupils' knowledge. The pupils did enjoy various activities, but all of a sudden I asked myself what my pupils actually knew at all. Previously I was used to pupils learning primarily facts and I knew how to assess them."* (adapted according to Skribe-Dimec, 2007, p. 67). The described case is a good illustration of the need for a paradigm shift (Gipss, 1994), which is characterised by giving the assessment a considerably broader and more significant role. Recently, high importance has been attached to formative assessment (Harlen & James, 1997, Hall & Burke, 2003, Bell, 2007). The significance of formative assessment is well illustrated by the following thought: *"Formative assessment is a central feature of the learning environment of the 21<sup>st</sup> century. Learners need substantial, regular and meaningful feedback; teachers need it in order to understand who is learning and how to orchestrate the learning process."* (Dumont, Istance, Benavides, 2010, p. 17). The efficiency of formative assessment was verified by Black and William (2005, 2009), who clearly proved that it enhanced learning.

The European Commission's report on science education shows that the curricula of only about half of 31 European countries include assessment and evaluation guidelines, which can provide assistance to teachers – and even those are mainly at the level of general recommendations (Eurydice, 2011). In Slovenia, the assessment of science is mainly left to teachers, their personal experiences obtained during schooling, and largely to their subjective theories on the understanding of scientific literacy.

Many researchers are engaged in teaching and assessing science in regular primary schools, but very little attention is paid to science classes in special education primary schools. The USA was clearly aware of the need for science education of all pupils as early as at the end of the 1980s when the Science for all Americans project was developed (Rutherford, Ahlgren, 1990). In Slovenia, 6.45% of the primary school population are defined as children with special needs, approximately 2% of whom attend specialized institutions – primary schools with lower educational standards (Opara, et. al, 2010). Pursuant to the Placement of Children with Special Needs Act (2011), an educational programme with lower education standards, adapted with respect to the type and degree of disability, is adopted for children who cannot achieve the education standard according to the primary school education programme. Special education primary schools with lower educational standards are attended by pupils with minor impairments in mental development. Compared to their peers, these children have different cognitive skills, and therefore both teaching and assessing need to be adjusted to them.

### **Research Problem**

The purpose of the research was to ascertain the science assessment method in special education schools, to determine if perceptions of teachers differ from their actual practice, as well as whether and how assessment is adapted to children with science-learning difficulties. Attention was focused on: a) cognitive levels of knowledge; and b) process skills.

### **Research Focus**

This research identified teachers' methods of assessing science and the ways of adapting assessment to pupils with learning difficulties in science. The research was focused on the conformity between written tests and the teachers' opinions. In view of the purpose of research, the following research questions were asked: (1) What is teachers' attitude to teaching science; (2) Which assessment methods are used by teachers in science classes and how often, and which assessment methods

they consider to be the most important; (3) Which cognitive levels of knowledge and which process skills are most frequently included by teachers in written tests; (4) Are teachers' opinions concerning the cognitive levels of knowledge considered in written science tests consistent with their actual practices; and (5) Are teachers' opinions concerning the process skills included in written test tasks consistent with their actual practices?

## **Methodology of Research**

A questionnaire was produced for this research to identify teachers' perceptions concerning science assessment and the ways of adjusting assessments to pupils with special needs. Authentic written tests were also collected to determine the actual teachers' practice in special education schools. Bloom's taxonomy was used to define the cognitive levels of knowledge, and a special list of process skills was developed.

A non-probability sampling method was selected for this research, which included 10 special education teachers, hereinafter referred to as teachers, who teach science in two Slovenian special education primary schools in classes with lower education standards. The initial sample of teachers was larger, but many schools and teachers refused to participate, as they did not wish to present their written tests. Both schools are located in small towns (between 12,000 and 35,000 inhabitants). All the teachers had completed a higher (university) degree of education, and had 11 years of service on average. In the 2011/2012 academic year they taught classes to the first to ninth grades (between 6 and 15 years of age).

Two instruments were used in the research: a questionnaire and authentic written tests. The first part of the questionnaire collected basic teacher data, and comprised six questions. Five of them were multiple choice questions with a measurement scale from 1 to 4 (in one question it was necessary to explain the choice), and one was an open question. It was decided to use a 4-point scale in order to avoid the selection of the middle reply. The question about the cognitive levels of knowledge offered six options ("knowledge," "comprehension," "application," "analysis," "synthesis," and "evaluation"). The question about knowledge assessment methods offered seven options ("written assessment," "oral assessment," "performance assessment," "written work," "observing children's actions," "group work," and "other"). The teachers indicated how often they used any of these methods, the reason for the most frequently used method, and which method is consid-

ered the most important. The question about the frequency of including process skills in written tests offered 13 options (“observing,” “collecting, recording, and interpreting data,” “comparing,” “sorting,” “classifying,” “ordering,” “measuring,” “investigating,” “predicting,” “experimenting,” “hypothesising,” “inferring,” and “communicating”). The question about adapting assessment was of an open type. Forty authentic written tests composed by the responding teachers (each teacher submitted four tests) were analysed. The research took place in two Slovenian special education primary schools in March and April 2012.

### **Data Analysis**

The questionnaires showed the teachers’ opinions on how much they took cognitive levels of knowledge into consideration and on their use of process skills, while the written tests reflected their actual consideration. Two researchers analysed the written tests. Each researcher determined their cognitive level and type of process skills for each task. If their definitions differed, they jointly determined the best possible option. The frequency of cognitive levels of knowledge and process skills in all four tests was defined for each teacher using a 4-point measurement scale. If a cognitive level or process skill appeared in only one of four tests, the frequency was marked by number 1, and by 4 if it appeared in all four tests. All the collected data were statistically processed by OriginPro 8 software. One-sample t-test (one-tailed) was used to determine the statistical significance of differences between the teachers’ opinions and their actual practice. Number 0 in Figures 2 and 3 represents perfect consistency between a teacher’s opinion and their actual practice. If, however, a teacher selected 3 (often), and 4 (always) in written tests, the difference was of one frequency level which, in line with our classification, corresponds to 25%. In both figures, this corresponds to the value over the marginal value 0, and vice versa if a teacher selected 3 (often), and the tests were graded 2 (rarely), the difference was of minus one frequency level or – 25% (under the marginal value 0 in the figures). The average deviation is denoted by a solid square. Box size represents standard error and whiskers represent standard deviation. Median is denoted by a vertical line.

### **Results of Research**

Table 1 shows basic teacher data. In the case of some teachers several options are indicated as the most frequently used assessment method since they selected the same frequency for different methods.

**Table 1.** Basic teacher data with respect to grade, number of years of teaching, attitude toward teaching science (+ = likes, ++ = likes very much), and methods of assessment (w = written, o = oral, p = performance assessment, g = group work)

Teacher	Grade taught	Years of teaching	Attitude toward teaching science	Most frequent methods of assessment	Assessment method of maximum importance for the teacher
1	6 <sup>th</sup> , 7 <sup>th</sup>	1–3	+	w, o	w
2	8 <sup>th</sup>	1–3	++	w, o, p	w
3	3 <sup>rd</sup> , 5 <sup>th</sup>	11–20	+	o	o
4	8 <sup>th</sup>	4–10	+	w, o, p	w
5	1 <sup>st</sup>	>31	++	o	w
6	8 <sup>th</sup> , 9 <sup>th</sup>	4–10	+	o	p
7	7 <sup>th</sup> , 8 <sup>th</sup>	4–10	+	g, p	p
8	5 <sup>th</sup> , 6 <sup>th</sup>	11–20	+	o	o
9	7 <sup>th</sup>	1–3	+	w	w
10	8 <sup>th</sup>	1–3	+	w, o	w

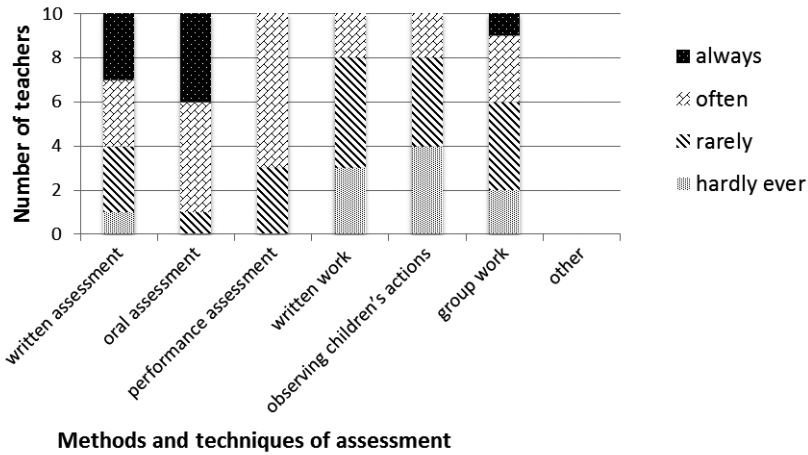
Half of the interviewed teachers teach in combined classes with pupils of different ages. Younger teachers with 11 years of teaching experience on average prevail; only one teacher has more than 31 years of teaching experience. All the teachers “like” to teach science, two of them even “like (it) very much.” The most frequently used methods of assessing science are “written” and “oral assessment”; only three teachers stated “performance assessment” as the most frequent method. The teachers with the least teaching experience most often use “written assessment” and also attach the highest importance to this method of assessment. With increasing experience, “oral assessment” proved to be the most frequent method of assessment. Teacher No. 5 and teacher No. 6 most frequently assess science by “oral assessment,” but teacher No. 5 attaches the highest importance to “written assessment,” and teacher No. 6 to “performance assessment.” All other teachers attach the highest importance to the method of assessment which they most frequently use. It is interesting that teacher No. 5 attaches the highest importance to “written assessment” although he teaches 1<sup>st</sup> grade, where the pupils cannot write yet. Teacher No. 6 and teacher No. 7, who teach higher grades, stated “performance assessment” as the most important method of assessment.

Figure 1 shows which methods of assessment are used by the interviewed teachers in science and their frequency of use.

Figure 1 shows that the teachers most frequently use “oral assessment.” “Written assessment” is always or often used by six teachers, “performance assessment” is



**Figure 1.** The frequency of the methods of assessment in science education

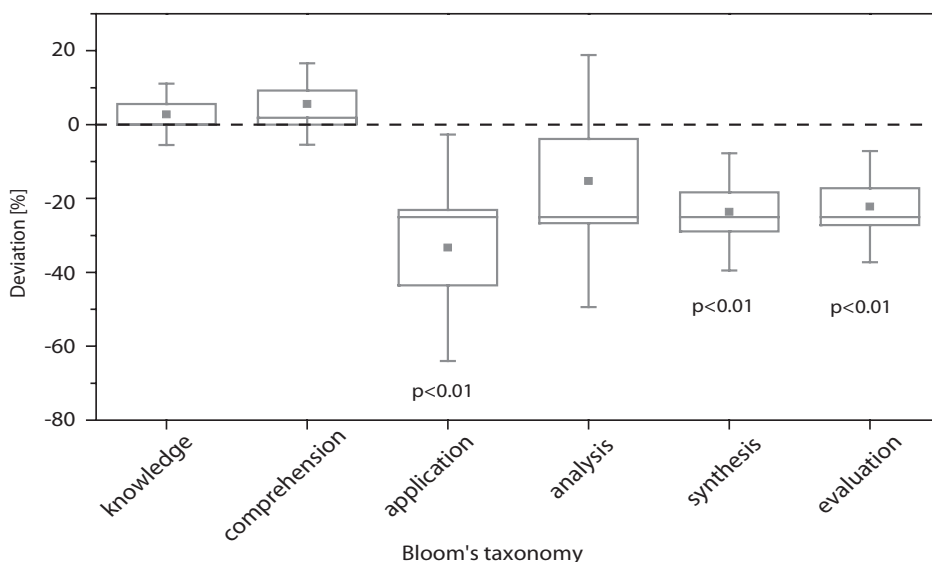


often used by seven teachers and “group work” is always or often used by four teachers. The teachers least frequently assess knowledge by “written work” and “observing children’s actions.” None of the teachers added any other method or technique of assessment. For “written assessment” the teachers most frequently wrote that such an assessment method was the most objective one. For “oral assessment” the teachers stated that pupils most easily explain the subject, that according to the Rules on the Assessment of Knowledge and Promotion of Pupils in the Elementary School (2008) it was necessary to collect more grades from oral than written assessment, and that it enables a comprehensive insight into the child’s knowledge and understanding.

Figure 2 shows differences between the opinions of the teachers and their actual assessment of the cognitive levels of knowledge in written tests of science. It was found that all the written tests included tasks requiring a lower cognitive level. Tasks requiring a higher cognitive level appeared very rarely.

Figure 2 shows that “knowledge” and “comprehension” assessing tasks correspond to the teachers’ responses quite well. In the case of tasks assessing the “analysis” there is an almost 20% difference between the teachers’ opinions and the actual appearance in the written tests. The greatest variations can be noticed in tasks which assess “application,” “synthesis,” and “evaluation.” In these tasks there is an average difference of 25% between the teachers’ opinions and actual appearance. So, the difference amounted to one degree. In assessing the “application” tasks there is a 35% difference which equals one and a half degrees. The t-test

**Figure 2.** Comparison of the teachers' opinions and their written tests of science with respect to the cognitive level of knowledge

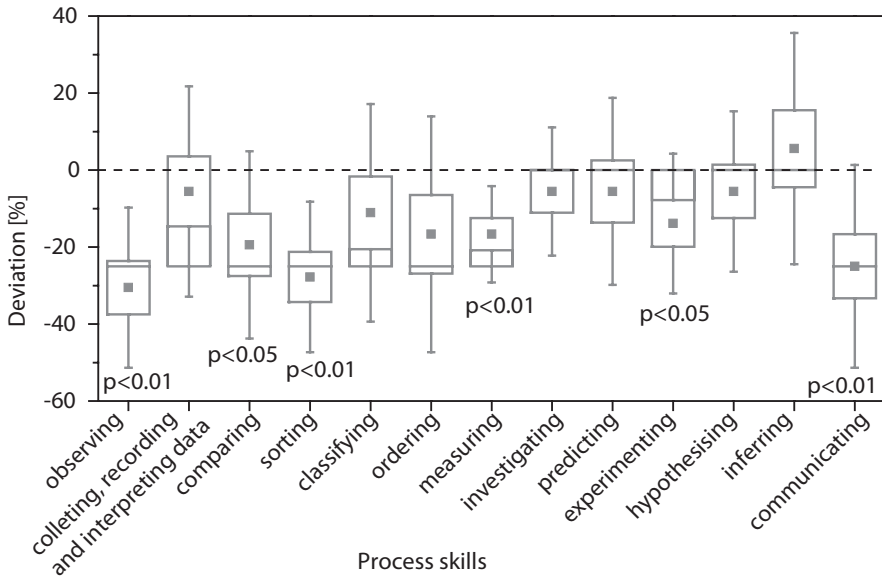


showed the statistic significance of differences in tasks which assess “application” ( $t = -3.26599$ ,  $df = 8$ ,  $p = 0.00571$ ), “synthesis” ( $t = -4.46442$ ,  $df = 8$ ,  $p = 0.00105$ ), and “evaluation” ( $t = -4.4376$ ,  $df = 8$ ,  $p = 0.00109$ ). Standard deviation is high in “application” and “analysis.” Particularly in the case of tasks requiring “application” and all higher cognitive levels the teachers’ opinions differ considerably from the actual use.

In the questionnaire, the teachers answered which process skills they include in written tests of science. Their opinions were compared to their actual practices as shown in Figure 3. It was established that the process skills very rarely appear in the written tests. Most frequent are tasks requiring “collecting, recording, and interpreting data,” “classifying,” and “inferring.” No “observing,” “investigating,” and “experimenting” was found in any written test.

Figure 3 shows that with respect to “collecting, recording, and interpreting data,” “investigating,” “predicting,” “hypothesising,” and “inferring” the teachers’ opinions and their actual use of process skills correspond considerably. Only for tasks which assess “inferring” did the teachers believe that they were less frequent in written assessments than it proved to be the case. Maximum deviations were found in “observing,” “sorting,” and “communicating,” since the teachers’ opinion compared

**Figure 3.** Comparison of the teachers’ opinions and their written tests of science with respect to process skills



to the written tests differed by 30% on average or more than one degree. So, the teachers were convinced that they used these process skills in written tests more frequently than was actually established. Similar is true for “comparing,” “classifying,” “ordering,” “measuring,” and “experimenting.” In this case, the difference between the teachers’ opinions and written tests proved to be around 15%. Using a t-test, statistically significant differences between the teachers’ opinions and their actual use of process skills were found in the case of “observing” ( $t = -4.4$ ,  $df = 8$ ,  $p = 0.00114$ ), “comparing” ( $t = -2.4010$ ,  $df = 8$ ,  $p = 0.02156$ ), “sorting” ( $t = -4.2640$ ,  $df = 8$ ,  $p = 0.00137$ ), “measuring” ( $t = -4.000$ ,  $df = 8$ ,  $p = 0.00197$ ), “experimenting” ( $t = -2.2942$ ,  $df = 8$ ,  $p = 0.02547$ ), and “communicating” ( $t = -3.0000$ ,  $df = 9$ ,  $p = 0.00748$ ). Standard deviations are rather high, so there are considerable differences among the teachers. In most cases, the teachers’ opinions on the use of process skills do not correspond to their actual practices, since they use process skills in their written assessments a lot less frequently than they stated in the questionnaire.

## **Discussion**

Based on the questionnaire results, it was established that the teachers have a positive attitude toward science education. This finding was a pleasant surprise since it is known that teaching science is demanding, particularly with children with special needs. The most frequently used assessment method in science education is “oral assessment,” and the teachers attach the highest importance to “written assessment,” which is not surprising since such a form of assessment is the most objective, equal for all pupils, and least time-consuming for them. It was surprising, however, to find that assessment is still very traditional. Written tests most frequently include tasks requiring a lower cognitive level, while tasks requiring a higher cognitive level appear very rarely. Perhaps, the teachers are of the opinion that children with special needs cannot achieve a higher cognitive level because of their lower intellectual abilities. The teachers’ opinion was that they more frequently included tasks assessing “application,” “synthesis,” and “evaluation” in their written tests than the analysis actually showed. Although the teachers had 13 process skills available in the questionnaire, they chose only a few. Tasks assessing process skills also appeared very rarely in written tests. Most frequent were tasks requiring “collecting, recording, and interpreting data,” “classifying,” and “inferring.” The teachers thought that they more frequently included tasks assessing “observing,” “comparing,” “sorting,” “measuring,” “experimenting,” and “communicating” in their written tests than was actually shown in the analysis. The majority of the interviewed teachers expressed concern regarding the questionnaire and written tests as they apologized in advance both for their answers in the questionnaire and for the written tests attached. Everybody wanted immediate feedback about their work. This fact indicates a possibility of changing teacher practices with this kind of work.

## **Conclusions**

The aim was to find out whether teachers take into consideration various cognitive levels of knowledge and to what extent they include process skills in written tests they use for science assessment. Special education teachers teaching in special education primary school took part in the research. All of them had a positive attitude toward science education. They stated “oral assessment” as the most frequent assessment method while attaching the highest importance to “written assessment.” Their “written assessment” most frequently consisted of

tasks with a lower cognitive level, and there are very few tasks assessing process skills. The teachers' opinions about their consideration of the higher cognitive level and some process skills differ considerably from their actual practices. A positive consequence of this research is that the teachers have become aware of their practices in science assessment.

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**Sociology**





## Importance of the Institution of Marriage for Polish and Slovak Students

### Abstract

The article presents a selected aspect of broader sociological empirical research into the issues of family and the phenomenon of cohabitation conducted among the students of the University of Constantine the Philosopher in the Republic of Slovakia and of the University of Silesia in Katowice, Poland. The presented analysis of the survey research results focuses on the determination of the importance of the institution of marriage for the youth belonging to academic environment. The results of the research have proven that in spite of the increasing level of liberalisation of marriage and family life a large percentage of students both from Poland and Slovakia perceived marriage as a valuable institution of high importance to the questioned individuals.

**Keywords:** *family, marriage, cohabitation.*

### Introduction

Family constitutes one of the basic social institutions in all societies and, as was rightfully stated by E. Durkheim, it is an institution within which individuals feel socially integrated and that is crucial for the welfare both of the family itself and of society (cf., B. Powell, C. Bolzendahl, C. Geist, L.C. Steelman, 2010, p.1). Moreover, as stated by W. Świątkiewicz (W. Świątkiewicz, 1998, p. 10) family also constitutes “the smallest and simultaneously the most important particle of social life”. Throughout centuries it has been assumed that families are responsible for the production, distribution and consumption of goods and also for the reproduction

and socialisation of the subsequent generations. It was also believed that families not only pass down possessions, but also cultural assets, they provide biological, social and cultural continuity (a. Kwak, 2005, p. 9).

Both common-sense observations and scientific research, frequently interdisciplinary in character, indicate enormous changes occurring in the most important area of social life, which is family. A. Giddens (A. Giddens, 2010), A. Toffler (A. Toffler, 1986), U. Beck and E. Beck-Gernsheim (U. Beck, E. Beck-Gernsheim, 2002) claim that we are witnessing a global resolution occurring in nearly all corners of the world. Obviously the intensity of the occurring changes depends on multiple social and economic determinants (mainly the level of economic development), as well as religious and cultural ones. There are barely a few countries in the world where the discussion concerning the changing forms of marital life, decomposition or evolution of family in a new direction – generally the future of family is not being held. The transformations of family, the differentiation of its forms and the exposure of the emphasis on the quality of relations, familiarity, intimacy and sexuality undoubtedly constitute a challenge both to societies and to their social policies as we are faced with the emerging of new subjects and new areas of family life, which previously were not affected by the functioning of family. These transformations trigger a vibrant social discourse between the supporters of the liberalization of marital and family life and the opponents thereof – the conservatives. The characteristic, broadly understood transformations of contemporary societies have a considerable influence – which will become even more intensive – on the socio-psychological and demographic image of family (K. Slany, 2006, pp. 13–14).

Currently, family undergoes, and will undergo in the future, transformations due to the fact that the social reality within which we function also undergoes constant changes – the norms and values as well as their hierarchy change. Also, social opinions tend to change and society demonstrates an increasingly more liberal attitude towards new social phenomena (such as cohabitation, living alone, single-parenthood, divorce, remarrying). The development of economy in Poland and Slovakia, as well as in other Western European countries, in the Scandinavian countries and the United States of America, alongside the continuously occurring processes of industrialisation, IT implementation, urbanisation and the decreasing attachment to religious values result in the fact that the transformations occurring within family will be continuous in their character. The more urbanised and industrialised a society is, the larger the changes (more liberal and individualistic attitude, freedom-oriented – possibility to choose) we will observe within family.

Hence a question arises: What is the importance of the institution of marriage for young people in relation to the transformations of family? Is marriage an old-fashioned institution which gives way to liberal forms of marital and family life such as cohabitation? Or is marriage still of high importance to young people? Will young people from Poland and Slovakia enter into marriages relatively frequently in comparison with their peers from Scandinavian countries despite the progressing secularisation and liberalisation of family life? This issue has been subjected to analysis in the empirical survey research concerning family and the cohabitation phenomenon.

### **Methodological assumptions**

The comparative research was conducted among the students of various majors and various years both at Silesian University in Katowice (Poland) and the University of Constantine the Philosopher in Nitra (Slovakia). The survey research was conducted among the test group of the total number of 1237 students from Poland and Slovakia. The realisation of this international research was possible thanks to the fact that the author was granted a scholarship from the Visegard Fund.

The basic tool used during the research was a survey questionnaire (L.A. Gruszczyński, 1999) containing 43 questions, introduction with information on the purpose of the research and the personal data section including social and demographic data of the surveyed individuals. The tool questions were formulated in compliance with the position of P. Daniłowicz and P. Sztabiński (P. Daniłowicz, P. B. Sztabiński, 1986, pp. 60–85), who believe that detailed questions should be used as they allow for obtaining more credible results/replies than global questions.

At the initial stage of the research the tested group was selected purposefully and at the subsequent stage the surveyed individuals were selected randomly. The purposeful selection referred to the choice of the community of students from two state-owned universities, namely the University of Constantine the Philosopher in Nitra and the University of Silesia in Katowice; the students were from similar departments and studied similar majors. The sociological diagnosis consisted in obtaining data on the opinions and attitudes of the students of the first and third years of the first cycle studies and of the second year of the second cycle studies of the following majors: sociology, pedagogy, political science, mathematics, physics, computer science, technical education/information technology and occupational health and safety in Poland and Slovakia. Yet, the selection of individuals from among the students of the above-mentioned departments and years was performed

randomly in such a manner that the members of selected detailed test groups had a similar set of certain features within the analysed class. These features included: sex, age, place of residence and the frequency of participation in religious practices. Similar test groups were selected to facilitate the empirical diagnostic research of comparative character.

The gathered data has undergone statistical analysis with the use of the statistical software SPSS. The collected research material proved sufficient to allow for the performance of analyses and to search for answers to the formulated research questions.

### **Analysis of research results**

The analysis of the results of the conducted research showed that marriage is and will be of great importance for the tested students from both countries – such an opinion was expressed by 70.6% of the total number of students. Surprisingly enough, the Slovak students proved to be more decided about this issue (77.3%) than their Polish counterparts (64.2%). Despite the fact that Slovak society is more liberal (cf., R. Inglehart, Ch. Wenzel, 2010, p. 72) than Polish one and the tested students more frequently approve of cohabitation relationships, which may indicate that in their awareness the institution of marriage is slowly losing its importance, they still more often tend to consider this institution as a valuable one. From the statistical analysis it seems clear that the differences in the percentage value between the Polish and Slovak students in the scope of the perception of the institution of marriage are characterised by a high level of statistical importance (the results of the test  $\chi^2=26.501$ ;  $df=2$ :  $p=0.000$ ) (cf., Table 1). On the basis of the research entitled The European Values Survey (L. Halman, R. Luijkx, M. Zundert, 2005, p. 30) it can be concluded that 90% of Polish society do not agree with the statement that ‘marriage is unfashionable’. However, for Slovak society this percentage is slightly lower as it fluctuates around 85%. The above-mentioned percentage values are very similar, therefore on such a basis it can be assumed that the institution of marriage is and will be of great importance to the examined individuals. Nevertheless, it is worth emphasizing that the research entitled The European Values Survey (L. Halman, R. Luijkx, M. Zundert, 2005, p. 30) was conducted among a test group of representatives of a given society and nearly a decade has lapsed since the performance of the said examination, hence the results of both types of research may vary. Still we need to bear in mind the fact that the contemporary young generation is the one that will have the biggest influence on the formation of family and demographic behaviours.

**Table 1.** Importance of the institution of marriage in the contemporary world vs. the country of residence

Importance of marriage in the contemporary world:		Country		Total
		Poland	Slovakia	
It is an old-fashioned institution	N	82	57	139
	%	12.9%	9.5%	11.2%
It is and will be of considerable importance	N	407	466	873
	%	64.2%	77.3%	70.6%
I have no opinion	N	145	80	225
	%	22.9%	13.3%	18.2%
Total	N	634	603	1237
	%	100.0%	100.0%	100.0%

Source: own research and calculations

International research conducted in seven countries of various cultures and different levels of economic development (namely Chile, Spain, South Korea, Lithuania, Germany, Poland and Ukraine) in the period between 2004 and 2006 at the initiative of F.W. Bush and W-D. Scholz, in Poland conducted by L. Dyczewski and J. Szukich-Kałuża (L. Dyczewski, 2009, p. 76) also indicates the fact that marriage is ranked among the highest values desired by the youth alongside family. In spite of the fact that within the recent decades, especially in highly developed countries, marriage has become a relatively fragile and unstable institution as confirmed by the ever growing divorce rates and increasingly popular and socially accepted forms of living such as single life, living apart together (LAT) and cohabitation relationships, the vast majority of the young generation wants to live within marriage and therefore enter into one. This research also shows that for the examined youth marriage is and will be of great importance. Marriage proved most important for the Koreans (85.0%) and the Lithuanians (83.3%). The Poles were ranked as third among the examined nationalities and the percentage value of those believing in the high importance of the institution of marriage amounted to 78.6%. The most divided opinions in this area were manifested by the Spanish, among whom 38% qualified marriage as an institution of high importance, while an almost equally large number, 41.0%, declared lack of opinion on the matter and 21% stated it was an old-fashioned institution (cf., Table 2).

The research conducted by P. Biernat and T. Sobierajski (T. Biernat, P Sobierajski, 2007, p. 62) also proves that the examined youth approved of the institution of marriage and declared that it is currently of great importance for them and will continue to be so in the future (73.4%).

In the conducted research the women, who constituted 73 % of the examined group, proved to be much more decided in this question than the men – 66.2%. Thus, the statistical analysis of the conducted research shows that the institution of marriage is of greater importance to women than to men.

**Table 2.** Importance of marriage in the contemporary world

Importance of marriage in the contemporary world	Country				
	Poland	Germany	Spain	South Korea	Lithuania
It is an old-fashioned institution	6.8%	13.9%	21.0%	7.0%	3.4%
It is and will be of great importance	78.6%	69.4	38.0%	85.0%	83.3%
I have no opinion	14.6%	16.8%	41.0%	8.0%	13.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Research conducted by L. Dyczewski and *Familienvorstellungen zwischen Fortschrittlichkeit Und Beharrung*. Hrsg. F.W. Busch, W.-D. Scholz, Würzburg: Ergon 2006 (See: L. Dyczewski, 2009, p 77).

Similarly, in the research conducted by P. Biernat and T. Sobierajski (T. Biernat, P. Sobierajski, 2007, pp. 62–63), women more frequently than men attributed great importance to marriage. In our own research, a considerable percentage of men declared lack of opinion on that matter (19.9%). More men (13.9%) than women (9.3%) expressed the opinion that marriage is an old-fashioned institution. On this basis we may conclude that men are more liberal and open to new forms of marital and family life. These differences are characterised by a high level of statistical importance (the result of the test  $\chi^2=9.648$ ;  $df=2$ :  $p=0.008$ ) (cf., Table 3).

**Table 3.** The importance of marriage in the contemporary world vs. sex

Importance of marriage in the contemporary world:		Sex		Total
		female	male	
It is an old-fashioned institution	N	67	72	139
	%	9.3%	13.9%	11.2%
It is and will be of considerable importance	N	531	342	873
	%	73.8%	66.2%	70.6%
I have no opinion	N	122	103	225
	%	16.9%	19.9%	18.2%
Total	N	720	517	1237
	%	100.0%	100.0%	100.0%

Source: own research and calculations

Moreover, statistically important differences between different age groups of students have been observed (test result  $\chi^2=17.019$   $df=4$ ;  $p=0.002$ ). The largest differences were noticed between the 18–19 and 20–22 age groups, which was excellently manifested by the result of the conducted NIR test (cf., Table 5). The majority of students who believed that marriage is and will be of great importance to individuals belonged to the 20 to 22 age group (74.8%). On the other hand, the students of the youngest age group (between 18 and 20) more frequently than the other students declared that marriage is an old-fashioned institution (15.8%) (cf., Table 4).

**Table 4.** The importance of marriage in the contemporary world vs. age

Importance of marriage in the contemporary world:	Age			Total	
	18–19	20–22	23–25		
It is an old-fashioned institution	N	30	70	39	139
	%	15.8%	9.9%	11.5%	11.2%
It is and will be of considerable importance	N	121	529	223	873
	%	63.7%	74.8%	65.6%	70.6%
I have no opinion	N	39	108	78	225
	%	20.5%	15.3%	22.9%	18.2%
Total	N	190	707	340	1237
	%	100.0%	100.0%	100.0%	100.0%

Source: own research and calculations

**Table 5.** NIR test conducted between dependent variable: the importance of marriage in the contemporary world and the independent variable: age of the tested individuals

NIR Test	Importance	
age 18–19	20–22	0.006
	23–25	0.067
age 20–22	18–19	0.006
	23–25	0.061
age 23–25	18–19	0.067
	20–22	0.061

Source: own research and calculations

The frequency of participation in religious practices tended to be an independent variable which indicated differences with a high level of statistical importance between the categories of individuals declaring various frequency of participation

in religious practices or their lack in relation to the institution of marriage (test result  $\chi^2=106.230$ ;  $df=8$ ;  $p=0.000$ ; Cramer's  $V =0.207$ ). The following relation may be concluded from the analysis of the research results: the less frequent the participation in religious practices, the higher the percentage of the respondents considering marriage as an old-fashioned institution. The results of the conducted research indicated that every fifth student who does not participate in religious practices considered marriage to be old-fashioned (20.9%). Subsequently, the more frequent the participation in religious practices, the larger the number of the students believing that marriage is and will continue to be of considerable importance to individuals (cf., Table 6).

**Table 6.** Importance of marriage in the contemporary world vs. participation in religious practices

Importance of marriage in the contemporary world:	Participation in religious practices					Total	
	several times a week	once a week	once or twice a month	several times a year	I don't participate		
It is an old-fashioned institution	N	2	17	8	34	78	139
	%	3.4%	5.5%	6.8%	9.0%	20.9%	11.2%
It is and will be of considerable importance	N	52	264	94	263	200	873
	%	88.1%	85.2%	79.7%	69.8%	53.6%	70.6%
I have no opinion	N	5	29	16	80	95	225
	%	8.5%	9.4%	13.6%	21.2%	25.5%	18.2%
Total	N	59	310	118	377	373	1237
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: own research and calculations

The results of the conducted research show that the students living in big cities and small towns, as well as those living in the country did not have a uniform attitude to the question of whether marriage is an old-fashioned institution or whether it still is of great importance. The respondents were divided into three groups: one group believed that marriage is of great importance, the second that it is an old-fashioned institution, and the third group had no opinion on the matter. However, the students living in big cities most frequently considered marriage to be an old-fashioned institution; this opinion was shared by 51.8% of the respondents. The reasons for it might include, among other things, the urbanisation process, higher popularity and common occurrence of the phenomenon of cohabitation,



the greater importance of liberal values for the residents of large cities, larger openness, tolerance and acceptance of alternative forms of marital and family life (cf., Table 7). Thus, the place of residence constitutes an independent variable which in a statistically important manner differentiates the opinions of students in this area (test result  $\chi^2=22.567$ ;  $df=4$ ;  $p=0.000$ ).

The major area of studying proved to be an independent variable which indicated a considerable statistical difference in the perception of the institution of marriage manifested by the examined students (test result  $\chi^2=35.532$ ;  $df=14$ ;  $p=0.001$ ;  $V$  Cramer=0.120). The greatest percentage of the students who declared that marriage is and will be of great importance was constituted by the students of pedagogy (82.7%) and mathematics (75.2%). The percentages of the students of other departments fluctuated around 70% and 60%. Almost a third of the students of physics (28.3%) and computer science (31.7%) expressed no opinion on this matter (cf., Table 8).

**Table 7.** Importance of marriage in the contemporary world vs. place of residence

Importance of marriage in the contemporary world:	Place of residence			Total	
	big city (N>50 000)	small town (N<50 000)	country-side		
It is an old-fashioned institution	N	72	45	22	139
	%	51.8%	32.4%	15.8%	100.0%
It is and will be of considerable importance	N	369	237	267	873
	%	42.3%	27.1%	30.6%	100.0%
I have no opinion	N	113	70	42	225
	%	50.2%	31.1%	18.7%	100.0%
Total	N	554	352	331	1237
	%	44.8%	28.5%	26.8%	100.0%

Source: own research and calculations

**Table 8.** Importance of marriage in the contemporary world vs. field of studying

Field of study	Importance of marriage in the contemporary world:			Total	
	It is an old-fashioned institution	It is and will be of great importance	I have no opinion		
sociology	N	20	113	29	162
	%	12.3%	69.8%	17.9%	100.0%
pedagogy	N	16	186	23	225
	%	7.1%	82.7%	10.2%	100.0%

Field of study	Importance of marriage in the contemporary world:			Total	
	It is an old-fashioned institution	It is and will be of great importance	I have no opinion		
political science	N	28	155	43	226
	%	12.4%	68.6%	19.0%	100.0%
physics	N	6	27	13	46
	%	13.0%	58.7%	28.3%	100.0%
mathematics	N	15	100	18	133
	%	11.3%	75.2%	13.5%	100.0%
Information technology	N	5	38	20	63
	%	7.9%	60.3%	31.7%	100.0%
OHS	N	19	107	26	152
	%	12.5%	70.4%	17.1%	100.0%
Computer science	N	30	147	53	230
	%	13.0%	63.9%	23.0%	100.0%
Total	N	139	873	225	1237
	%	11.2%	70.6%	18.2%	100.0%

Source: own research and calculations

## **Summary**

To sum up we need to conclude that in spite of the ever greater liberalisation of marital and family life a large percentage of students both from Poland and Slovakia believes that marriage constituted a valuable institution of high importance. Within the structure of the tested individuals in terms of sex, the women more frequently than the men expressed the opinion that marriage is of great importance and will be so in the future. Thus, despite the growing social acceptance and common occurrence of alternative forms of marital and family life, such as cohabitation relationships, marriage is still ranked very highly among the values respected by academic youth of Poland and Slovakia and they attribute high importance to this institution. The conducted research also indicates that the examined students will precede entering into marriage with cohabitation, which is mostly due to the fact that the latter offers a possibility to get to know each other better doing daily activities and chores, thus also verifying the strength of the relationship in critical situations. Similarly, even though the institution of marriage has ceased to constitute a stable relationship, which is reflected by high divorce rates, young people from Poland and Slovakia are still willing to choose living in a formalised relationship

offering a greater sense of safety for both parties and simultaneously providing a vast variety of legal benefits in their countries in comparison with the cohabitation relationships. The attractiveness and huge importance of the institution of marriage for the examined students also results from the national configurations of accepted social and cultural values in Poland and Slovakia, where the institution of marriage is still of great importance due to the high level of religiousness of the societies in comparison with the societies of Western Europe and Scandinavia.

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