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Stanisław Juszczuk
Editor in Chief

The New Educational Review

Editor's Preface

The first number of *The New Educational Review* in 2013 is the thirty-first issue of our journal since the start of its foundation in 2003. Our journal has a small jubilee: it is ten years old. In this issue there are mainly papers from: China, the Czech Republic, Korea, Malaysia, Nigeria, Pakistan, Poland, Serbia, Slovenia, Spain, Taiwan, Turkey, Ukraine, and the USA, because our journal is open for presentation of scientific papers from all over the world.

In the current issue the Editors' Board have proposed the following subject sessions: Didactics, Pedeutology, Social Pedagogy, Chosen Aspects of Psychology, and Review.

The subject session "Didactics" consists of four articles. In their article, Sufiana K. Malik and Muhammad Ajmal Chaundry explore the differential concept building by teaching students of the elementary level through activity-based instruction. The main purpose of the paper by Maria del Carmen Cejudo and Julio Cabero Almenara is to get to know the attitudes, satisfaction, and academic performance of undergraduate students who participate in Blended Learning courses as well as their use of online communication tools. The study by Chin-Fei Huang, Chia-Ju Liu aims to explore the effect of chemical element symbols in students' identification of 2D chemical structural formulas. In the study by Wei-Zhao Shi, the data from the Programme for International Student Assessment (PISA) are used to investigate whether the PISA science test score is a good indicator of competence in science and technology.

The subject session "Pedeutology" presents six articles. The paper by Nadelijko Rodić and Vesna N. Rodić Lukić attempts to determine the latent structure of the curriculum for primary school teacher education in the first cycle of studies at Serbian teacher training and education faculties. The purpose of the study by Simona Prosen and Helena Smrtnik Vitulić is to establish the types of emotions that are expressed by primary school teachers, their frequency, and the situations

that trigger them. Kunle O. Oloruntgebe, Gazi Mahabubul Alam, and Sharifah N.A. Syed Zamri investigate the nature of conflicts that are generated in the science classroom. The study presented by Olga Šušoliaková, Jindra Šmejkalová, Markéta Papršteínová, and Milan Reboš aims to compare occupational mental stress assessment of elementary school teachers and firefighters. The main objective of the study by Mariola Chomczyńska-Rubacha and Krzysztof Rubacha is to verify the hypothesis about the relationship between a sense of efficacy and educational strategies for teachers, conceptualized as a heteronomy-autonomy dimension. In her article, Milena Gucma presents the results of the research into the types of consciousness of English teachers in lower secondary schools according to the types distinguished by Paulo Freire.

The subject session "Social Pedagogy" consists of eleven articles. Jasmina Arsenijević and Milica Andevski describe the correlation of leadership with professional characteristics of principals in Serbian schools. The article by Joanna Augustyniak focuses on the analysis of the language competence of Polish grammar school students in Ireland. Metin Toprak, Armağan Erdoğan, and Ömer Açıkgöz in their paper describe the field architecture of the scientific family of program qualifications. The purpose of the study by Huam Hon Tat, Chuah Boon Kai, Aslan Amat Senin, Amran Md Rasli, and Richard P. Bagozzi is to examine the motivations of impulse buying behaviour and to investigate the relationship between each set of motivation and decisions which lead to university students' impulse buying behaviour. The research aim of the study by Olivera Knežević Florić and Stefan Ninković is to provide empirical data on the existence or non-existence of a connection between doing sport and prosocial behaviour of the young. In her paper, Eva Machů describes qualitative research analysing causes and consequences of labelling gifted pupils. Yunus Emre Karakaya, Çağrı Özdenk, and Özgür Karataş characterise the leadership roles displayed by physical education teachers working in primary and secondary education institutions in Turkey. The article by Alicja Leix deals with the question of the influence of international exchange programmes on reducing ethnic prejudice in their participants. Murat Ozel characterises gifted students' perceptions of scientists and stereotypical images of scientists. The results of the research by Myroslava Hladchenko prove that the mission statement of universities must be developed in an open discussion with the participation of the members of university. Yong-Lyun Kim investigates the effect of learning preparedness on female school administrators' career development.

In the subject session "Chosen Aspects of Psychology" there are two texts. Katarzyna Markiewicz and Bożydar Kaczmarek concentrate, in their article, on the knowledge of graduates about ongoing changes and tendencies in the labour

market, and their ability to communicate their needs in this respect. Referring to the results of the previous research published in *The New Educational Review*, Dorota Turska explains differences in the perception of a mathematics teacher by Polish male and female students in view of a popular stereotype that mathematics is a domain for males.

The subject session "Review" presents two texts. The first of them is a review by Zdeněk Friedmann of a book by P. Hlado, entitled "Career Orientation of Adolescents: Findings from Theories and Research", Brno: Konvoj, 2012. The second one by Zdena Kráľová characterises the international and interdisciplinary journal *Acta Technologica Dubnicae* published by the Dubnica Institute of Technology in Dubnica nad Váhom (Slovakia).

We hope that this edition, like previous ones, will encourage new readers not only from the Middle 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*.

New Educational Review



Didactics

Sufiana K. Malik,
Muhammad Ajmal Chaudry
Pakistan

Concept building of Elementary Level through Activity-Based Instruction

Abstract

The presented article was an attempt to explore the differential concept building by teaching students of the elementary level through activity-based instruction. An experiment was conducted in a public sector secondary school on students of grade 6 in teaching of social studies. The major finding of the current showed that concept building was made easier and understandable by teaching students with the use of activity-based instruction as compared to lecture-based instruction in teaching of social studies. It was further explored that the academic achievement of students taught with the use of activity-based instruction was significantly better than that of students taught with the use of lecture-based instruction. Therefore, it was suggested that the effects of activity-based instruction can be investigated by teaching other subjects using this method and teachers may be trained in how to teach their respective subjects with the use of the activity-based teaching method.

Keywords: *activity-based instruction, elementary level, students, social studies, concept understanding*

Introduction

Teaching is a practical human activity in which two individuals are involved: the teacher and the learner, i.e., the senior (the teacher) and the junior (the learner/student). Certainly, it is an interaction between the teacher and the learner for the purpose of learning. In this interaction the teacher helps the learner in the learning process. The teacher selects a lot of learning experiences for the purpose of learners'

learning. In one lesson he/she may adopt more than one teaching method in order to enhance students' learning. It is the requirement of the education system that at different levels of education different subjects are taught. Some of them are core subjects whereas some are electives. Core subjects are common and essential for every student to study whereas in the elective subject system the student selects subjects according to his/her own needs and interest. At the elementary level social studies is one of the subjects that students have to study as a core subject and they have no choice to opt for it.

Teaching and Learning of Social Studies

Teaching and learning are both active processes in which the teacher is functioning in order to present the content material in class, on the other hand, students are active as they have to incorporate new knowledge, behaviors, and skills the teacher presents and instructs in. Therefore, both entities interact with each other toward the attainment of their common goals of learning. Learning cannot happen in a passive environment since it is itself an active process. At the same time, learning through activity/by doing has a lasting effect on students' and it is helpful in modifying students' thinking and behaviour. Learning is a process through which thinking and behaviour of individuals is changed in the desirable direction in order to achieve the national objectives of education and this learning can be conveniently achieved by teaching them by conducting practical activities.

Activity-based instruction is based on the philosophy of learning by doing. A popular Chinese proverb describes the theme of activity-based learning: "I hear, and I forget. I see, and I remember. I do, and I understand" (Confucius)

Janicki, Peterson (1980), and Swing conducted a study to investigate the naturally occurring aptitude-treatment interaction with three teaching approaches in social studies: lecture-recital, inquiry, and public issue discussion. The results of the experimenter-constructed test outcomes showed the lecture-recitation approach was superior. Different approaches were good for different abilities. (Source: www.eric.ed.gov/ERICwebportal retrieved on March 20, 2010).

Dr. Bob Kizlikn (2009) claims that Social Studies that should be part of the curriculum for the purpose of helping students understand human interactions that occurred in the past, are occurring now, and that are likely to occur in the future. The reason for this understanding is that they may help students develop and nurture values that will make it more likely for them to be able to determine what is the right thing for any situation and do it, especially when doing the right thing is hard.

One of the objectives of school is to make students productive members of society, to teach them to be responsible citizens of society, social values, and to make them adjust to the environment. For this purpose some specific subjects are taught at the school level. Among these subjects, social studies is the subject in which students learn about social values, their duties as responsible citizens and manners of living within society. The objectives of teaching social studies can be fully achieved if this subject is taught through students' active involvement in conducting practical activities because active participation in learning enhances its effectiveness in concept building. Social studies is a subject expected to cover the following topics/areas:

- Character education
- Law related education
- Current events
- Citizenship/civics education
- Values/Moral education
- Literacy and social studies
- Technology and social studies
- Humanities
- Student Service projects (social action) Global Education (reference: www.csus.edu/ retrieved on September 24, 2009).

Beeghly and Prudhoe (2002, p. 139) maintain that most social studies curricula are still influenced by an approach known as expanding environment. This suggests that young children need to first study topics with which they have personal connections with. Today leading social studies educators suggest that while the approach is still relevant, topics need to include a global perspective, so that early on children are cognizant of the wider world.

Zarillo (2000) suggests that primary children not only need to learn about houses found in their immediate environment, but also about those in the larger world and about different kinds of dwelling in the world and reasons for the differences.

Generally, a lecture is considered as the most classical and tradition method of instruction. The lecture method is considered as a traditional approach to teaching. According to Hunter (1982), lectures have a bad reputation; "Telling not teaching" as the saying goes.

Sharif Khan and Akbar (1997) are of the opinion that it is a very traditional method. Its history goes back to the period when there was no printing; knowledge communicated by the teacher to the student orally.

Teaching social studies by relating text material to students' real life can enhance their concept understanding. Problem solving is one of the best methods used

in the teaching of social studies for developing thinking skills, problems solving skills and for imparting content related to students' real life. Students find solutions to problems posed by the teacher. They think, argue, discuss facts and concepts and come to solutions gradually by thinking out their various dimensions and systematically come to a conclusion. According to Nickerson (1994), there are three approaches to problem solving:

Polya's Four Steps

- Understand the problem
 - Devise a plan
 - Carry out the plan
 - Look back

Hayes' Six Steps

- Find the problem
- Represent the problem
- Plan the solution
- Carry out the plan
- Evaluate the solution
- Consolidate gains

Bransford and Stein's IDEAL

I=Identify the problem

D=Define and represent the problem

E=Explore possible strategies

A=Act on the strategies

L=Look back and evaluate the effects of your activities.

A field trip or field study is also a good instructional strategy where students learn the theoretical material in class and then they personally visit the place or the situation in the field, which is how their concept understanding is enhanced. Deutschman (1992) reports that field study is a planned learning experience which involves an educational trip to places where students can observe first hand and study directly in a real life setting.

Tuning Fork, Violin and Clarinet (2005) paper on Activity-based Teaching For Effective Learning, presented at the ITE Teacher Conference (2005), showed that learners participated actively in creating their own knowledge rather than being passive knowledge consumers. At the end of this interactive session, both the teacher and the students had a feeling of achievement and contentment. Incorporating activities in the lesson provided a hope in tackling practical problems by using one's own resources. A significant increase in the results was observed in terms of an increased understanding of the topic and improved interpersonal

skills. This approach was well appreciated by both the students and the staff, as the final result of teaching and learning was achieved.

Rationale

Current methods of social studies teaching in Pakistan are mostly based on the talk and walk method, in which the teacher only tells students about some concept. He/she may read from the textbook or ask some student to read the passage from the textbook and at the end students may be asked to write down that lesson in their notebook as homework. In this way, the whole process of teaching and learning goes on until the book is finished and students have learnt orally some part of it for the purpose of passing an examination. It is observed that through the teaching of social studies the desired/set objectives for this subject at the elementary level are not being achieved through the talk and walk method of teaching. That is why desirable social changes that are expected from students are almost invisible in students. It has been observed in Pakistan that generally students of the elementary level do not take interest in the subject of social studies. It has been generally observed that it is common practice that social studies is a subject taught using the textbook reading method or through the lecture method. There is a need to teach social studies through activity teaching methods.

The researcher herself has more than twenty two years of experience in the field of teaching and educational administration. Her own experience in the teaching of social studies, her discussions with her teaching staff and an analysis of students' academic performance during various years in social studies, made her explore the reason why students' score in social studies are low. For this purpose she planned to conduct a pilot study in order to give directions to her study according to students' needs and interests. Therefore, she directly approached a group of students of the 6th grade to find out the reasons for their low scores in social studies and to learn their views about the current teaching methods of social studies (SS) and the suggested methods/activities in the teaching of SS. At the end of a session with the students of the 6th grade she was able to give directions to her study and she decided to conduct experimental research in the subject of SS and explore the effectiveness of the traditional instruction and activity-based instruction with reference to students' academic performance in social studies at the elementary level.

The main purpose of social studies teaching is to promote the knowledge of the individual about himself, the country and the world around him, the significance of national problems, the development of social and moral consciousness and the

values that should lead to healthy living in an egalitarian society. Pakistan's national education policies, especially the national education policy, lay emphasis on character building and critical thinking development in students. This objective can be better achieved by teaching students with the use of different kinds of practical activities.

After going through the literature on social studies available in books and research reports, the researcher realized that no research has been conducted into this problem in Pakistan, therefore the researcher decided to conduct a research study to find out the effect of activity teaching method on students' concept understanding.

Statement of Problem

The research problem was to explore the effectiveness of the activity-based teaching method and the lecture teaching method in concept building understanding at the elementary level.

Objectives of the Study

The following were the objectives of the study:

1. to find out the effectiveness of the activity-based teaching method in concept understanding;
2. to measure differences in students' academic achievement in classes taught with the use of the activity-based method and the lecture method.

Hypotheses of the Study

The following were the hypotheses of the study:

1. There is no difference in the concept understanding of students taught with the use of the activity-based and lecture teaching methods.
2. There is no difference in the academic achievement of students taught with the use of the activity-based and lecture teaching methods.

Delimitation of the Study

The study was delimited to the:

1. assessment of the effectiveness of the activity-based teaching method;
2. female public sector elementary schools only;
3. female students in grade 6 in the sample institution
4. teaching of social studies for grade 6 only.
5. measuring differences in the achievement of students taught with the use of the activity-based and lecture teaching methods.
6. exploring differences in concept building of students taught with the use of the activity-based and lecture teaching methods.

Population of the Study

All the students studying in the public sector institutions in grade 6 and the teachers teaching the 6th grade social studies subject were the population of the study.

Sample of the Study

The sample for conducting the experiment for the study was selected randomly from students studying in grade six at a public sector girl's secondary level school at Mianwali (Punjab, Pakistan). 50 female students studying in grade six were selected randomly from the sample institution in order to conduct the experiment.

Two elementary school teachers were randomly selected, who were teaching social studies to grade six. These teachers were selected on the equal basis of their academic B. A, professional qualifications C. T (Certificate in Teaching) and 6–8 years of teaching experience.

Research Instrument of the Study

The researcher developed a teacher-made test in order to collect data for the study. This test had two parts. One part was for measuring the students' achievement in the subject of social studies and the second part was for assessing the students' concept building ability in the subject of social studies taught with the use of the activity-based teaching method and the lecture method.

Validation of Research Instrument

The teacher-made tests were developed by the researcher bearing in mind the objectives of the study. One was pretest and the other was posttest. Both tests were validated through experts' opinion and through try out. The team of experts from the National University of Modern Languages, Islamabad, examined the developed test. A try out was taken on a small number (10 students) not included in the sample for the study. Cronbach's alpha was .87. Some items in the tests were modified in the light of the experts' opinions and in the light of the test results. After the experts had validated them for the sample, they were administered to the target sample.

Procedure of the Study

The study was experimental in nature. For achieving the objectives of the study the posttest control group design was adopted for conducting the experiment. For this purpose, 60 students were selected randomly from the students of grade 6 of a public sector secondary school. The selected students were divided into

two groups comprising 30 students in each. One group, who was to be taught with the use of the activity-based teaching method, was the experimental group, whereas the group who was to be taught with the use of the lecture method was the control group. The students were randomly assigned to the experimental and control groups. The teachers were randomly assigned to teach the experimental and control groups. The teacher who was to teach using the material designed by the researcher was trained in the teaching of that particular content by the researcher. For treatment purpose, the researcher designed activities for the content of chapter one and two of social studies for the 6th grade. These activities were designed according to the nature of the content. The following activities were included:

1. Mind mapping
2. Map reading
3. Problem solving
4. Multiple choice questions
5. Showing pictures related to content
6. Drawing
7. Presentations

Data Analysis and Results

The data for Social Sciences (SPSS) were analyzed using Statistical Package; one sample t. test was applied for data analysis.

Results of Hypothesis 1

There was no difference in concept understanding of the students taught with the use of the activity-based and lecture teaching methods.

Table 1.

Group	N	Mean	df	t	Sig. (2-tailed)
Control group	30	47.10	29	24.541	.000
Experimental group	30	69.16	29	30.093	.000

Level of Significance = .05

Results and Interpretation

Table 1 shows that the performance of the experimental group (activity-based teaching method) was significantly better than that of the control group (traditional

teaching method). The mean score of the experimental group was significantly higher (69.16) than the mean score of the control group (47.10). Hence, hypothesis 1 was rejected and it was concluded that the activity-based teaching method had a better impact on the students' concept understanding as compared to the traditional, lecture teaching method.

Results of Hypothesis 2

There was no difference in the achievement of students taught with the use of the activity-based teaching and lecture methods.

Table 2.

Group	N	Mean	df	t	Sig. (2-tailed)
Control group	30	49.24	29	25.273	.000
Experimental group	30	64.09	29	29.104	.000

Level of Significance= .05

Results and Interpretation

From data analysis it is evident that the performance of the experimental group (activity-based teaching method) was significantly better than that of the control group (lecture teaching method). Hence, hypothesis 2 was rejected and consequently it was concluded that the mean scores in the teacher-made achievement test was higher (64.09) in the experimental group than in the traditional group (49.24), which indicated that the activity-based teaching method had a better impact on the students' learning achievement in the subject of social studies as compared to the traditional group.

Recommendations:

Bearing in mind the major findings of the present study, the following recommendations are suggested for teachers and curriculum planners:

1. Learning becomes more effective and a playful activity when teachers involve students in practical learning activities, when the content is presented not orally, but is enriched by various types of learning activities. Active participation in learning activities enhances the effectiveness of the instruction method.
2. In the activity-based teaching method students actively participate and hence learn by doing and learning by doing enhances their understanding of concepts.

3. Students' involvement in classroom activities may raise students' interest in learning and it can further enhance their learning achievement.
4. It is apparent from the results of the present study that the activity-based instruction method is more effective for concept understanding in the teaching of social studies. A further experiment can be conducted on the teaching of general science, mathematics, and English at the elementary level using the activity-based instruction method.
5. The same methods may be tried out for teaching of secondary level subjects and differences may be investigated.
6. Teachers training workshops and seminars may train teachers in how to teach in their respective subject areas through the activity-based instruction method. In addition, they may be encouraged to teach with the use of the activity-based instruction method by offering special incentives.
7. More research should be carried out to explore the effectiveness of the activity-based instruction method on students' motivation in learning, and developing the passion for team work in students.

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Blended Learning: Attitudes, Satisfaction, Academic Performance and Online Communication in Processes of University Training

Abstract

The main purpose of this study/paper is to get to know the attitudes, satisfaction, and academic performance of undergraduate students who participate in Blended Learning courses as well as their use of online communication tools. A quantitative and qualitative methodology of the collection and analysis of data (questionnaires, discussion groups and analysis of online communication) was used to understand how this new training method was developed in 334 undergraduate students. Students showed a positive attitude toward the internet and the method was presented as satisfactory for students and it appeared to increase academic performance. Results showed that the uses made by students in discussion forums were fundamentally focused on social and informal aspects.

Keywords: *blended learning, students' attitudes and satisfaction, online communication.*

1. Introduction

The gradual, but in turn indispensable, incorporation of ICT in a university context is creating new necessities that focus on the appearance of new decisive variables in the teaching-learning process, as well as the necessity of studies that guide and establish theoretical-practical models to approach these new formative methods supported in telematic nets.

Diverse studies (Donnelly, 2010; George-Walker and Keeffe, 2010; Motteram, 2006) have been made around B-Learning training methods, showing high student satisfaction. This satisfaction is related to time-space flexibility and good access to all course materials. A stronger assumed sense of community was also observed among participants, and improvement was provided in tutorship systems. Among diverse studies we can observe that, in a general way, blended learning is presented as an option with a great quantity of positive valuations. Through a blending-learning study at Sheffield Hallam University, where the main objective was to investigate student learning and its development, Aspden and Helm (2004) considered this methodology and wanted to find out if it influenced relationships between students and other aspects of their own learning. Their results showed that this modality was a viable methodology in different situations, allowing students to fulfill different proposed activities in a more flexible way, depending on the peculiar circumstances of each one. If it is used in an appropriate way, the effectiveness of a mixture of face-to-face sessions and online sessions gives students the opportunity to establish connections between their learning experiences and their particular necessities. If for any reason it is impossible for some students to go to campus they can develop their work in an independent way and, at the same time, they can maintain contact with their partners and with the institution. The present article investigates B-Learning modality and how it influences students' attitudes, satisfaction, academic yield and online communication, and also whether it is perceived as positive / beneficial from the professors' point of view.

2. Methodology

The first thing necessary to point out is that the study was carried out during four months of the 2006/2007 academic year, more concretely, between February and June, in different subjects selected for the experimental part of the research, specifically those of New Applied Technologies to Education, of Faculty of Education, University of Seville (Spain).

Participants

The selected subjects were studying using the B-Learning modality, always under supervision. A total of 332 students were enrolled in subjects developed under the B-Learning modality during the 2006/2007 academic year in different specialties: Elementary education (45), Childhood Education (152), Musical Education (63), Special Education (54), and Physical Education (38). It is necessary to point out

that approximately 50% of the students were aged between 19 and 21, and that 80% of them were female, while 20% were male. Most of them had had no previous experience of online training (91.7%) and 79.9% had internet access at home.

Data Sources:

The procedure for collection of information was structured by the following instruments:

- Students' attitudes toward the internet: Through Osgood's Scale of Attitudes with semantic differential construction, using a seven-point scale (1 = extremely positive; 7 = extremely negative). Examples of bipolar adjectives include: quick-slow, expensive-economical, necessary-unnecessary, useful-useless.
- Academic performance: objective type tests were designed, composed of 21 items, 18 in relation to memory objectives, 3 related to understanding, and 3 to application, with two application times: pretest and posttest.
- Students' satisfaction: an "Undergraduate student satisfaction questionnaire toward the blended theory" was created, which contained 38 items using a four-point scale (4 = Strongly Agree, 3 = Agree, 2 = Disagree, 1 = Strongly Disagree), and different open-ended questions.
- Discourse Analysis: messages submitted to online discussion forums were analyzed through the construction of a system of categories based on different models used in similar studies (Cataldi, 2005; Cataldi and Cabero, 2006; Perera, 2007).
- Professors' perceptions: to find out teachers' opinions concerning the B-Learning modality, we ran a discussion group, a protocol / discussion guide using for this purpose.
- Finally, students were asked to provide demographic information about their age, sex, specialty, previous experience in online training, and the possibility of having a computer with internet access at home.

Methods of Analysis:

To analyze the variables that were the object of the study, we carried out an analysis of diverse studies; that is to say, we developed different studies regarding the same sample to analyze the effect of the mentioned main variable: academic performance, grade of satisfaction, attitudes toward the internet, etc. In general, this type of study is characteristic of the first stages of the development of research and, according to Bisquerra (2004, 197), it prepares the way for configuration of new theories or research, it centers its performance on determining the "whats"

of an educational phenomenon, and it is not limited to a mere collection of data, but rather it tries to respond to questions on the present state of any educational situation with implications that go beyond the limits set by the studied elements. On the other hand, a correlational study seeks to establish and to evaluate the existing relationships among different variables that we have identified starting with different studies that can be influential in the process of acquisition of information, and can also end up establishing significant relationships in an online training context. We also develop a qualitative study referred to as analysis of interaction that students establish with tools of asynchronous communication of training in net. And lastly, an experimental method was used, referring to the effect that e-learning has on the academic performance of students. Therefore, we should point out that, as Arnal, Del Rincón and Latorre (1992, 102) suggest, with this type of study the ideal goal of the researcher is that changes or variations in values of dependent variables (in this case, academic performance) are due to manipulations of independent variables (online training) and not to other variables.

3. Results

The following sections summarize the results of our study through different analyzed variables, which, as pointed out previously, were: students' attitudes toward the internet, undergraduate students' satisfaction with B-Learning training, students' academic performance in B-Learning training, and teachers' perceptions about B-Learning modality.

Findings from Students' Attitudes toward the Internet:

The fundamental purpose of this study was to investigate the undergraduate students' attitude towards the internet, identifying if this had changed between their initial and final one, and if correlations could be made with satisfaction and with academic performance. Concerning the initial CAAI, we could see that, in general, there was a positive attitude towards the internet, with a mean of 5, and a typical deviation of 1.441. Therefore, it is possible to affirm that students, before beginning their training in hybrid modality, had had a favorable attitude towards the internet. This positive attitude towards the internet can be observed in descriptions using adjectives such as Useful, with a mean of 6.03, Necessary with 6.01, or Informative with a mean of 5.99. In the same way, the lowest values, and therefore a less positive attitude, were shown when students used adjectives such as Addictive, with a mean of 3.71, Expensive with a 3.83, and Dispensable with a mean of 4.58. Regarding

the results obtained between relationship attitudes and academic performance, that data demonstrated to us that there was no relationship among these variables, as 91% of the students in the sample declared they had not had any previous experience with training through the internet.

Students' Academic Performance in B-Learning:

In the study, we understand as academic performance memory capacity, understanding and application, so much visual as conceptual of different contents presented in different topics of formative experience through net, supporting in Bloom (1979) and D'Hainaut (1985) classifications about them, and that revolved around the first three categories: knowledge, understanding and application. The results obtained allowed us to affirm that the students who participated in our experiment had acquired learning from the three main established categories, which allowed us to confirm one of our fundamental objectives and point out that training strategies in B-Learning modality help students to improve academic performance.

On the other hand, analyses carried out allowed us to confirm another of our high-priority objectives, namely that the performance of the students in different analyzed dimensions increased once formative experience through the B-Learning modality was carried out; it was even completed for all and each one of the specialties that constituted the sample of the research (Childhood, Musical, Special, Elementary and Physical). Summarizing, what we can infer from this data is that significant differences in the increment of the students' learning exist if they have participated in B-Learning, and in addition, this increment has nothing to do with the professor who teaches the subject.

Findings from Students' Satisfaction in the B-Learning Modality:

First of all, we want to point out that six high dimensions were contemplated in the questionnaire proposed to identify the students' satisfaction ratings in our B-Learning formative experience: a) Students' general aspects; b) General aspects of the subject; c) Aspects related to the online professor-tutor; d) Aspects related to contents; e) Aspects related to online communication; and f) Aspects related to the platform.

To continue, we show the most significant results found for each of the above-mentioned dimensions.

First, with regard to the students' expectations, although at first the students had low expectations of the new modality of learning, subsequently these were modified towards more positive values. On the other hand, these positive values

were established once the students were consulted after having completed the training process.

With respect to general evaluation of the subject, the first thing we have to point out is that values near 3 show that, in regard to general questions on the subject (more concretely, on the adaptation of the program, as well as on the usefulness/utility of essays and of practical work), the students were very positive, with means of 2.91 and 2.97, and where modal punctuation was in both items of 3.

Questions linked to the teacher obtained a very high punctuation, except in one of the items analyzed, namely the one that made reference to this idea “The Professor-tutor carried out an appropriate animation and it stimulated participation”. However, the students showed average values of around 3 or above, which means that their answers were focused on the option “Agree” and, in some cases, near “Strongly Agree”. This clarifies that, taking into account that all items highlighted the online professor-tutor’s positive functions, the data show that the faculty were valued in a very positive way.

Students’ satisfaction with regard to the contents of the B-Learning formative experience was positive, with high values above the mean of 2, near to 3. It is noteworthy that they were the lowest values in relation to the other dimensions and that in accordance with the students’ perceptions the problems were not so much in the quality of the contents, but possibly in its structuring and volume.

The dimension “Aspects related to Communication” obtained a value of 3.06, with a typical deviation of 0.737. This denotes, again, a high level of student satisfaction.

Aspects related to platform (WebCT) with a mean of 3.07, and with a typical deviation of 0.647 were valued positively by the students. Consequently, the students considered appropriate technical elements of the environment.

Findings from Computer-Mediated Communication in Discussion Forums:

A total of 4,599 messages sent by the students following different subjects in our study were analyzed. These messages were analyzed with a system of categories based on Garrison & Anderson (2003), Cataldi (2005), and Perera (2007), and we proceeded to generate our own categorization system using four high dimensions: Social, Cognitive, Didactic and Technological. Interventions made by the students were analyzed in two high sections: those sent to general discussion forums, and those corresponding to thematic discussion forums. Table 1 shows dimensions, categories and subcategories for each of these as well as the obtained appearance frequency.

Table 1. Category system

Dimension	Category	Subcategory	Frequency	
			General forum	Thematic forum
COGNITIVE	Initiation	Recognize the problem	4	0
		Sense of puzzlement	47	27
		Initiating arguments	19	3
	Exploration	Divergence from group	6	2
		Divergence from message	2	2
		Information exchange	2	1
		Reconsideration of suggestions	3	1
		Request information	101	98
		Facilitate information	46	17
		Contents problems	8	26
		Facilitate bibliography, webs	6	4
	Integration / Construction	Agreements with partners	52	39
		Agreements with a message	2	0
		Specify ideas	39	39
		Propose solutions	20	20
		Contribute ideas	155	161
		Contribute metaphors, examples	4	15
		Accept ideas	3	0
		Extract conclusions	6	2
		Appreciate solutions or explanations	69	57
	Problem Solved	Apply solutions to the real world	2	0
SOCIAL	Affective	Expression of emotions	24	8
		Use of humor	173	23
		Risk-free expression	276	12
		Critic	4	2
		Play jokes on partners	3	1
	Interactive	Use "replay" to a message instead of beginning	994	534
		Formulate questions	18	0
		Congratulate and value writings of others	7	4
		Express agreement with somebody	21	1
		Encourage participation or present challenges	10	2
		Appreciate answers or offer solutions	2	0

Dimension	Category	Subcategory	Frequency	
			General forum	Thematic forum
SOCIAL	Cohesion	Mention own name in the messages	317	139
		Salute	34	2
		Support	2	1
DIDACTIC	Organiza- tional and Instruction- al Design	Establish the program	4	3
		Establish parameters of time	4	0
		Use media	2	0
		Establish norms	1	0
	Facilitate Discourse	Encourage, recognize, reinforce a student's contribution	3	0
		Promote participation, discussion	2	0
		Value process effectiveness	17	2
	Task	Clarification	140	122
		Demands	85	101
		Support	3	0
		Scheduling	10	10
		Evaluation	15	1
	Instruction- al Manage- ment	Formulate and replay questions	121	3
		Intervention reaction	3	0
		Correct, express authority	0	7
		Reaction to valuation of the intervention	1	1
		Support	0	1
		Focus on discussion	4	13
		Summaries discussion	0	1
		Confirm that it has been understood	5	20
		Diagnose mistakes	0	11
		Re-plan technical questions	4	2
TECHNO- LOGICAL	Use of tools	Problems and difficulties with use of tools	57	31
		Propose solutions for problems or difficul- ties with use of tools	36	18
		Negative valuations of platform and tools	1	3
	Net or System	Problems and difficulties	3	2
		Negative valuations	1	0
TOTAL			3.003	1.596

Several points to highlight are:

- a. The number of messages obtained in “General Forum” duplicates the number of messages obtained in “Thematic Forum”, which suggests the importance that the students attached to this category.
- b. The students frequently used forum tools to address social aspects of character more than cognitive or didactic aspects.
- c. Overall, the students frequently used forum tools to Request information and Facilitate information, just as we can observe in the following example: “Hello, I am unsure about the first task of theme 9: the valuation that is made of the two uses of the Net. It’s not like in the questionnaire of topic 3 where it was necessary to make a kind of numeric valuation. Thank you” (General Forum.txt – 1:116)
- d. We think it is worth making a remark about the social dimension. We refer concretely to Narration of daily life aspects and Use of humor, which had much more significant and higher values regarding the other ones.
- e. To conclude, the subcategory that obtained the highest index of frequency and percentage of appearance ($f = 994$; $\% = 94.48$), and also had the widest margin of difference compared to the other subcategories was *Uses “replay” to a message instead of beginning*. We can obtain different answers environment to questions that they think about as a continuation of initiation of a sent message, such as: answers after a question to resolve doubts – of a professor as well as of a student – respond to topics of activities –with a high appearance frequency – answers from partners about organization, about platform, or to corroborate some intervention.

Findings from Professors’ Perception of B-Learning processes in their Subjects:

The professors, through a discussion group, gave us qualitative and significant information on diverse elements that encouraged or hindered formative action, as well as to know teachers ones perceive utility of imparting the subject in a virtual environment of low teaching-learning blended modality. We highlight some of the significant results:

- a. Categories with the highest percentages in interviews were: “Valuation” with 37.32%, “Suggestions” with 14.44%, “Attitude” with 12.04%, and “Difficulties and Limitations on incorporation of mixed methodology”, with 10.82%.
- b. The teachers said that the students went into this experience with little knowledge about B-Learning or e-learning training modality, as well as with insufficient skills in the use of virtual environments: “*P 1: transatlás*.”

txt – 1:81 (393:394) Codes: [CPrevios]. There were students that in 99% had not done an online course before and entering in a digital platform is to simplify it”.

- c. The tutors perceived an attitude change by the students during the course, and if at the beginning attitudes were not completely positive, at the end the great majority felt positively.
- d. The teachers highlighted two issues: in the first place, the high participation of the students through communication tools; and in the second place, the professor was not only “responsible” for solving doubts, but rather among the same partners solved many doubts.

4. Conclusions

As many students as professors showed a positive attitude toward the training processes of the Blended Learning type in university teaching (Llorente, 2008; Precel et al, 2009; So and Brush, 2008). When the students’ and professors’ attitudes toward the hybrid model were studied, in general, the results allow us to say that there was a positive attitude toward this modality, although with certain limitations in regard to links between working on the net and actions related to entertainment and leisure, or to the necessity of having an internet connection at home.

It is relevant that it was impossible to find significant differences between men and women in relation to the attitudes shown toward the internet; this is a finding that coincides with (Henríquez, 2005) and differs (Cabero et al., 1991) from other studies in relation to the same topic. Also, the fact that the initial attitudes of the students were inferior to the final ones allows us to conclude that participation in internet formative experiences is an appropriate resource to training, improves attitudes that undergraduate students show towards a given subject.

On the other hand, the academic performance of the students increased at all the cognitive levels studied (knowledge, understanding and application), but it was not possible to establish significant relationships with other variables such as students’ attitudes or satisfaction (Wu and Hsia, 2010).

Regarding how students use asynchronous communication tools it was proved that basically they were employed in a social way or to request and facilitate information about doubts or problems that arose in the development of the subject, with lower use in relation to contents aspects.

The presented study has certain limitations that need to be taken into account, e.g., whether the students had adequate skills to study and work with and through

the computer screen and, of course, with a resource that they associated with entertainment, i.e. the internet. In the same way, we think that it would be convenient to repeat the study with different samples, in other subjects, and in different universities.

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The Effects of Chemical Element Symbols in Identifying 2D Chemical Structural Formulas

Abstract

This study aims to explore the effect of chemical element symbols in students' identification of 2D chemical structural formulas. A chemical conceptual questionnaire, event-related potential experiments and interviews were administered to fifty university students in this study. The results revealed that high achieving students performed different brain activities and strategies to identify 2D figures (without chemical elements symbols inside) and 2D chemical structural formulas. However, low achieving students ignored the existence of chemical element symbols and performed similar brain activities and strategies when identifying 2D figures and chemical structural formulas. This paper discusses implications for new education.

Keywords: *chemical element symbols, chemical structural formulas, event-related potentials (ERPs)*

1. Introduction

Chemistry is a difficult subject for students because of the abstract concepts, unobservable objects, and unfamiliar specific terms used by the chemistry community (Gilbert & Treagust, 2009; Tsaparlis, Kolioulis, & Pappa, 2010). One of the most important and difficult topics in chemistry is that of chemical structures (Korakakis et al., 2009; Mayer, 2001). Learning about chemical structures must

start with identifying chemical structural formulas. Unfortunately, many students fail to identify 2D chemical structural formulas (Huang & Liu, 2012).

The possible reason why students cannot identify 2D chemical structural formulas successfully could be a lack of both cognitive ability, such as mental rotation, and knowledge of chemical structures (Huang & Liu, 2012; Mayer, 2001). Huang and Liu (2012) mentioned that some of students' difficulties in identifying 2D chemical structural formulas are due to their inappropriate strategies of mental rotation. In their results, they found that the students of low achievement in identifying chemical structural formulas always used the same strategies to identify 2D geometric figures and chemical structural formulas. Thus, we wanted to find out the meaning of chemical element symbols to those students. Do they recognize these chemical element symbols in these 2D representations?

Answers to the research questions are not easy to measure simply using questionnaires and interviews. Wang, Chiew and Zhong (2010) suggested that many cognitive processes are difficult to explain verbally and many students do not even recognize what kind of cognitive ability they are applying in problem solving tasks. Hence, they suggested that this kind of research must combine neurophysiological methods with questionnaires and interviews (Wang, Chiew, & Zhong, 2010).

Huang and Liu (2012) combined event-related potentials (ERPs), a kind of neurophysiological methods, with questionnaires and interviews to provide physiological evidence to explain the effects of mental rotation in identifying 2D figures and chemical structural formulas successfully. Therefore, in this study, we also combined ERPs, a questionnaire and an interview to explore the effects of chemical element symbols when students identified 2D figures and chemical structural formulas. According to the principle of ERPs, humans show similar trends of brain wave when responding to the same task (Lai et al., 2010). The details will be discussed in the next section.

2. Theoretical Framework

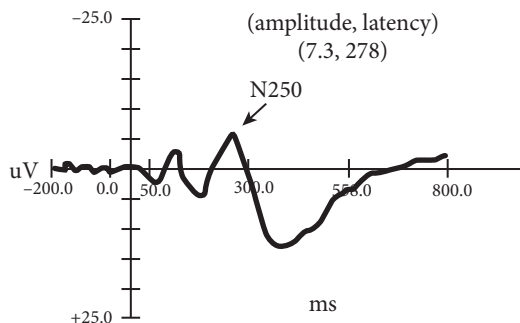
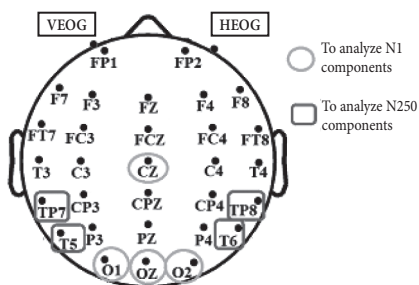
When a visual system delivers signals from the physical world to the brain, the neuronal networks of the brain integrate the new information with personal experiences and establish new information structures (Moè, 2009). It means students' scientific knowledge and their response to scientific explanations are often influenced by their prior experiences in daily life (Frailich et al., 2009). The notion of constructivism demonstrates that each individual learner constructs his/her knowledge by making sense of the world and prior experiences, and by

integrating new information with his/her existing cognitive structures (Frailich et al., 2009). However, many of the ideas generated by what students experience in daily life are significantly different from those of scientific explanations (Gilbert & Treagust, 2009). In terms of chemical structural formulas, many teachers and textbooks use balls and sticks for illustration (Stevens, Delgado, & Krajcik, 2010). Unfortunately, based on the model of balls and sticks, many students believe that a chemical bond is a real physical entity (Boo, 1998) and ignore the meaning of chemical elements.

Students use their daily life experiences about balls and sticks to develop a conceptual understanding of atoms and chemical bonds (Stevens et al., 2010). The identification of figures by students predisposes them to apply the same strategies in identifying chemical structural formulas (Stieff, 2007). Therefore, this study hypothesized that chemical element symbols are meaningless for the students of low achievement in identifying chemical structural formulas.

This study adopted the ERP technology to provide physiological data for explaining the effects of chemical element symbols when students identified 2D figures and chemical structural formulas. ERP is a procedure used to collect data on the electrical activity of the brain through the skull and scalp (Coles & Rugg, 1996). The procedure comprises many events that include several experimental trials. When participants recognize or apply the specific cognitive abilities, such as recognition, identification or mental rotation, in response to events, the corresponding electrical activities of brain are induced (Huang & Liu, 2012). The averages of these corresponding electrical activities are integrated as specific ERPs components (Coles & Rugg, 1995). In this study, the main set of specific ERPs components was the N250 component.

The N250 component occurs with a latency between 220–250 ms after stimulus onset (Figure 1) and it is always found in occipito-temporal electrode sites including TP7, TP8, T5, and T6 (Figure 2) (Caharel et al., 2009). Past research has found out that a larger amplitude of N250 component of ERPs will be induced when the participants identify different contents of two similar figures consisting of the same contours but different internal elements. (He, Liu, Guo, & Zhao, 2011). For example, the N250 component has been referenced in studies on the recognition of faces, letters and the contents of plausible models, and it has been defined as an individual repetition effect (Duñabeitia, Molinaro & Garreiras, 2011; He et al., 2011). To sum up, the students who have a greater recognition of chemical element symbols within chemical structural formulas will reveal a larger N250 amplitude than those who do not recognize the differences between 2D figures and chemical structural formulas well.

Figure 1. N250 components in ERPs analysis**Figure 2.** The locations of electrodes in brain map

3. Methodology

Research Population and Instrument

This study was conducted at an urban university in Taiwan. Fifty university students majoring in chemistry ($n=50$, 31 males, 19 females; mean age \pm S.D. = 20.9 ± 2.0 years) participated in the study.

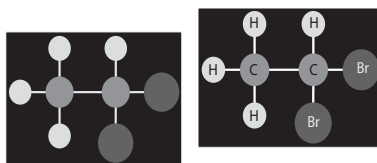
A questionnaire, developed by the authors and based on previous research (Chiu & Fu, 1993; Frailich et al., 2009), was administered to the participants. The questionnaire (perfect score = 100) included ten questions (perfect score for each question = 10). These questions were used for understanding the students' learning performance related to chemical structure. The questionnaire was constructed using the Delphi method and was determined by reaching consistency. The expert panel consisted of two science educators, two science teachers, one chemist and two psychologists. Then, the constructed questionnaire was tested by thirty university students to validate the content, reaching the Cronbach's α value of .935.

The participants completed the test within 50 minutes without conversing with others. After the test, one science teacher graded the questionnaires, and the other science teacher confirmed the grading. Based on the scores of the questionnaire, the students with upper and lower 27% of total scores (Kelly, 1939) were grouped into the high score (HSG, $n=9$; mean age \pm S.D. = 20.7 ± 2.7 years) and low score (LSG, $n=9$; mean age \pm S.D. = 20.4 ± 1.9 years) groups respectively. All the participants were healthy, without a history of neurological or psychiatric disorders, and all gave voluntary consent to participate in the ERPs experiments. This study conformed to The Code of Ethics of the World Medical Association (Declaration of Helsinki) and was approved by the ethics committee of the National Kaohsiung Normal University.

ERPs Experiments

Based on the research questions, this study designed two types of ERPs experiments, which included 2D geometric figures (2D figures) and 2D chemical structural formulas. 2D figures were presented by a similar shape to 2D chemical structural formulas, but without any chemical element symbols inside (Figure 3). Each experiment included a short guideline and 62 trials. A pair of matched ($n=31$) or unmatched ($n=31$) figures was presented in each trial, and the participants were asked to respond by recognizing whether the pair of figures was matched or not by pressing the appropriate buttons (matched: press ○; mismatched: press ×).

Figure 3. Examples of experimental tasks (Huang & Liu, 2012)



A guideline message appeared on the screen for 10000 ms before each experiment. Then, the sequence of each trial began with a red fixation point that was presented at the centre of the screen that remained in view for 100 ms. The red fixation point could help participants to refresh their memory from previous trials and to pay attention to the centre of the screen. Furthermore, the target slide of a trial was presented for either 4000 ms or until the participants pressed a response button.

Data Collection

All the electroencephalogram (EEG) signals (Figure 4) from the participants were collected when they were manipulating the experiments.

Figure 4. An example of EEG signals

The EEG was amplified (band pass, 0.01–40Hz) by the SynAmps/SCAN 4.4 hardware and software (NeuroScan, Inc., Herndon, VA); using the commercial electro-cap (Electro-Cap International, Eaton, OH) which was placed at 32 scalp locations based on the 10–20 international system. The noise signals collected could be filtered out automatically. The electrode impedance was kept below 5 k Ω . The averaging epoch was 1024 ms, including 200 ms of pre-stimulus baseline.

EEG channels were continuously digitalized at a rate of 1000 Hz by a Syn-AmpTM amplifier. The signal was analogue filtered (0.1–200 Hz), and digitally filtered in the range 0.1–30 Hz.

Data Analysis

The correct scores and the ERPs data were collected for analysis. The score for correct response in each trail was one point, and the total score was 62 points. Because each participant needed to perform the same experiment twice, the highest possible score was 124 points. For the ERPs data, the N250 amplitudes were obtained from the TP7, TP8, T5 and T6 electrodes (Caharel et al., 2009). The extracted data were analyzed by *t*-test (SPSS version 6.0).

Interviews

After the students completed the ERPs experiments, semi-structured interviews were conducted to investigate their explanations and understanding of the chemical representations. Explanations from both the HSG and LSG student groups were coded as object explanations, partial explanations, and scientific explanations.

The interview for each student lasted 40 minutes. The interview data were used to triangulate the findings of the ERPs data and the scores of the questionnaire.

4. Results and Discussion

Behavioral data

The results in Table 1 show that there was no statistical difference between the HSG and LSG students in their response scores for identifying 2D figures. In contrast, the scores of the HSG students were significantly higher than those of the LSG students for identifying 2D chemical structural formulas. These results suggested that there were no differences of cognitive ability in identifying geometric figures between the high and low achieving students, but the high achieving students did perform better in identifying 2D chemical structural formulas than the low achieving students.

Table 1. *t*-test analysis of the response scores between and within HSG and LSG

Variable	Experiment	Group	Mean \pm S.D.	<i>t</i>	Cohen's <i>d</i>
Scores	2D	HSG	124.0 \pm 0	1.5	0.707
		LSG	123.8 \pm 0.4		
	2Dchem	HSG	118.9 \pm 3.9	10.7***	5.059
		LSG	93.0 \pm 6.1		

* $P < .05$; ** $P < .01$; *** $P < .001$; 2D: 2D figures; 2Dchem: 2D chemical structures.

The low achieving students often performed similar brain activities and strategies to identify 2D chemical structural formulas and 2D figures

The results of *t*-test on the N250 amplitude of the HSG and LSG students (Table 2) showed that there were no statistical differences between the HSG and LSG students in the N250 amplitude induced by the identification of 2D figures. However, the N250 amplitude of the HSG students was significantly larger than that of the LSG students when identifying 2D chemical structural formulas.

He et al. (2011) found out that when the participants recognized the differences between two similar figures which consisted of the same contours but with different elements inside, the larger amplitude of N250 component from brain activities was induced. In other words, the results of this study indicate that the HSG and LSG students exercised similar brain activities to identify 2D figures. However, the HSG

students exercised more brain activities than the LSG group in the identification the internal content of 2D chemical structural formulas. This finding indicated that the meanings of chemical element symbols in 2D chemical structural formulas were different between the HSG and LSG students.

Table 2. Differences in N250 amplitude between the HSG and LSG groups

Variable	Group	Mean \pm S.D.	<i>t</i>	Cohen's <i>d</i>
N250 amplitude (2D figures)	HSG	0.5 \pm 0.7	0.1	0.090
	LSG	0.4 \pm 1.4		
N250 amplitude (2D chemical structures)	HSG	8.5 \pm 3.7	5.4***	2.565
	LSG	0.4 \pm 2.5		

*** $P < .001$; 2D: 2D figures; 2Dchem: 2D chemical structures

Further, we collected a paired *t*-test data on the N250 amplitude from the HSG and LSG students. The results showed that for the HSG students the N250 amplitude obtained from identifying 2D chemical structural formulas was significantly larger than that from identifying 2D figures ($t=11.6$; $P < .001$; **Cohen's $d=2.953$**). But, for the LSG students, there was no statistical difference in N250 amplitude ($t=-0.07$; $P=0.944$; **Cohen's $d=-0.020$**).

The results of this study indicated that the HSG students could recognize the differences of contents between 2D figures and 2D chemical structural formulas well, but the LSG students could not. The LSG students performed similar brain activities to identify those two representations. This finding implied that the LSG students ignored the meaning of chemical element symbols when they identified the 2D chemical structural formulas. The interview data also supported this implication.

The interview data showed that the HSG students recognized the chemical element symbols well and used some analytical strategies of the chemistry background knowledge to identify 2D chemical structural formulas. In contrast, the LSG students imaged the chemical element symbols as some specific 2D round shapes and used the same strategies to identify 2D figures and chemical structural formulas.

(Students explain how they identify the 2D representation in Figure 5)

HSG 5: I compared the location of specific balls in the left pictures with the right pictures to check the match or mismatch of different 2D figures. But in the 2D chemical struc-

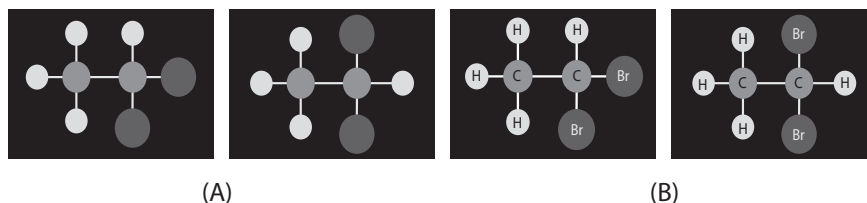
tural formulas, the “Br” atoms were connected to the same “C” atom; therefore I could determine that these two chemical structures are the same.

HSG 9: To recognize 2D figures, I check and compare two specific balls. But in chemical structural formulas, I need to calculate the numbers of “Br” atom first and check the location of “C-Br” single bonds. These two chemical structural formulas are the same because the single bond could rotate, therefore, the spatial structures are the same.

LSG 2: You can image “Br” atoms as specific balls and a single bond as sticks in 2D figures. And you can compare these 2D chemical structural formulas as 2D figures.

LSG 3: I think there are some rules to identify 2D chemical structural formulas and figures, because the chemical bonds are the same as the sticks of objects, I think I can use the same strategies to identify 2D chemical structural formulas.

Figure 5. An example of comparison between
A) 2D figures; B) 2D chemical structural formulas



As shown in Figure 5, obvious mistakes occurred if the students determined 2D chemical structural formulas to be the same as 2D figures. The 2D figures in Figure 5 (A) are different, but the 2D chemical structural formulas in Figure 5 (B) are the same. The interview data show that the HSG students applied different strategies when identifying 2D figures compared to identifying 2D chemical structural formulas. The finding agrees with previous studies (Gilbert & Treagust, 2009; Stieff, 2007). In contrast, the LSG students applied similar strategies to identify 2D figures and chemical structural formulas. In other words, the chemical element symbols of 2D chemical structural formulas are meaningless to the LSG students. The LSG students just identified those representations by considering their contours.

5. Conclusion

Previous research by Huang and Liu (2012) indicated that the students of low achievement in identifying chemical structural formulas always used the same strategies to identify 2D geometric figures and chemical structural formulas. The question of this study was that if the low achieving students used the same strategies to identify 2D figures and chemical structural formulas, what was the meaning of chemical element symbols to those students?

The behavioural data and the physiological data from N250 amplitude of ERPs indicated that chemical element symbols were meaningless for the students of low achievement in identifying chemical structural formulas. The physiological data from brain activities and interview data implied that those low achieving students ignored the chemical elements symbols when they identified the 2D chemical structural formulas in their cognitive processing because they had an alternative conception about ball and stick models of chemical bonding. They thought the 2D chemical structural formulas were the same as 2D figures. Based on the findings, this study suggested that science teachers must avoid only introducing the ball and stick models when teaching chemical structural formulas, and they need to emphasize the meaning of chemical element symbols through the use of multiple representations and analytical strategies.

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New Educational Review



Pedeutology

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Latent Structure of the Curriculum for Primary Teacher Education in Serbia

Abstract

This paper attempts to determine the latent structure of the curriculum for primary school teacher education in the first cycle of studies at Serbian teacher training and education faculties. By applying the factor analysis into the first level of teacher education, four latent dimensions could be identified that could be nominated as General Education, Basic Education, Methodological Education, Specific Education, and one bipolar factor. The results indicate that learning outcomes and competences in certain fields of instruction should be re-examined and re-directed in line with the experience of the EU countries in order to harmonize and modernize the curriculum for primary teacher education in Serbia.

Keywords: *education, class teacher, latent structure.*

Introduction

One of the objectives of the Bologna Declaration is the promotion of the necessary European dimensions in higher education, particularly regarding the development of curriculum, inter-institutional cooperation, mobility schemes and integrated programs of study, training and research. Teachers in Europe are educated in a wide variety of institutes and by a wide range of curriculum models. The quality of teachers in Europe varies from country to country. Certain countries have developed and implemented education standards (or related concepts), while other countries do not yet have official standards (ATEE, 2006). The main aim of teacher education throughout Europe is the same – the education of teachers.

However, the underlying ideas and the contexts differ, leading to significant differences between teacher-education curricula (Eurydice, 2002). Teacher education systems in developed countries are based on the concept of lifelong learning and consist of initial teacher education and continuous further training of teachers. It is in this process where dilemmas and challenges related to transnational education appear. For some, the content of education is seen as a means for the creation of European cultural identity. For others, the curriculum represents the ultimate defence of national and, indeed, sub-national identities which the European Union must respect (McLean, 1995, 29).

All over the world, curriculum development is seen as an ongoing process, embedding stages of profound change, stages of implementation and stability of the curriculum, and stages of revision and further improvement. The 'Curriculum', which is a broadly used term worldwide, designates the systematic and gradual process of learning based on clear learning objectives (why should students learn), careful selection and organisation of contents (what, when and in what order students learn), methods of teaching and learning (how should students learn) and the assessment and evaluation of learning outcomes (what did students learn/acquire/achieve/develop, or how effective learning really is).

Education has been a prime mover in changing the quality of life of an individual and society throughout the history of mankind. Currently, teacher education in the education systems of South-East Europe is experiencing a radical change: the challenge consists in aligning the curricula of teacher-education to the European education area and effectively modernising structures such as models and methods in teacher education.

By programming and profiling primary studies at teacher-training and related education faculties in Serbia, namely the curricula that represent the core essence of all work, the goals set in the concept of education are achieved. Solutions that have been sought in changing or partial reductions in the syllabi ended without solving the problem as a whole. Thus, for example, due to partial negligence of the relationship that existed between a scientific discipline and basic study courses, the number of courses in the curricula was increasing from year to year. In recent years, there has been a trend to expand the volume of contents students need to master in order to acquire knowledge and skills, and develop abilities for a professional title of a class-teacher (graduate primary teacher), and at the same time the duration of undergraduate studies (Bachelor's level), remained the same four years (Rodić, N. 2002a). Master's studies last one year, whereas doctoral studies last three years.

The problem is the convergence of basic studies on the whole to the reality of school practice, especially to the so-called classroom instruction. In the cur-

riculum for training teachers to perform class teaching, the ratio between the contents of professional and educational science and instructional methodology contents is approximately 50% to 50%. The structure of the curriculum can also vary in the way that schools are involved in the curriculum. There is a variety of models for cooperative partnerships between schools and teacher education institutes (Maandag et al., 2007). The real test of the competence of individuals is possible only in school, which means that there is a problem of scientifically-based verification of basic faculty studies. The question is what competences, knowledge and skills are required for a teacher as an important factor of school practice, which indicators assess the so-called “teaching” capability. One of the key goals of research activity in this field is to study the model of student teachers’ capability (performance) in the basic studies. In addition, teachers’ qualifications include specific qualifications acquired in basic studies in order to perform better in the classroom teaching practice.

However, teacher education institutes in the various European countries face similar challenges, such as how to support the development of teacher identity, how to bridge the gap between theory and practice, how to find the balance between subject studies and pedagogical studies, how to contribute to a higher status of the teacher, and how to prepare teachers for the needs of pupils in the 21st century (European Commission, 2007a).

The development of the primary studies in Serbia was not uniform in all segments due to the lack of a long-term global concept. Some of its parts can be recognized by a practical approach, which resulted in irrational solutions and oscillations in the domain of practical changes in certain elements of the system. On the other hand, certain system solutions were brought at the micro level without adequate prior research done. This is the reason why some of the solutions did not have the exact background, hence they were but of provisional character. This meant a lack of pace in building the system according to the concept of a long-term education (Rodić, N. 2002b). What we need is a systematic change, not only curriculum or pedagogical change; we need a new driving vision for the system and not only a new paradigm for curriculum design and its classroom implementation.

The curriculum of teacher training and related studies in the world consists of four components: (1) Study of instruction subjects (scientific field, professional speciality), (2) Study of educational sciences (educational psychology, educational sociology, educational philosophy, pedagogy, didactics), (3) Study of methodological instruction (curriculum design, curriculum and teaching), and (4) School practice.

The curriculum focused on competencies sees educational objectives as expected learning outcomes or professional competences. Learning outcomes are described as competencies acquired by students after they have met all study requirements, i.e. as values (competencies) that students, in preparation for school practice, must achieve or accomplish for the so-called “classroom-based” teacher education for the profession. In regard to this, the study of teaching areas is structured, according to program structure, into: Basic, General and Instructional methodological education.

According to the available literature, there have been no previous studies on the latent structures of the competence (success) of students who graduated from teacher training and related education faculties in our country and in the world. In their attempts to evaluate competences or success achieved in undergraduate study subjects (fields of instruction), the authors in our country generally applied only descriptive or comparative analyses.

The aim of the research is to identify the latent structure of the curriculum for primary teacher education in the first cycle (Bachelor’s level) studies at the teacher training and education faculties in Serbia. The recent division of subject areas of study indicates that the hypothesis in this paper refers to the number and measure structures of “teacher” competence in the curriculum, to determining the optimum settings and practical solutions in order to build a functional and efficient system of undergraduate studies in accordance with the conceptual demands in this area.

Methodology

As for the methodology of scientific (pedagogical) research in Serbia, for a long period the instructional theory relied exclusively on subjective reasoning; therefore the results were but individual experiences and inductive reasoning. This is the reason why our instructional theory and practice still encounter diametrically opposed beliefs that are based on individual experiences, each of which proclaims objectivity. At the other extreme pole, which too could be reduced to subjectivism, what predominates is the normative and deductive justification of attitudes, decisions, measures taken and the like.

The problem of current methodological orientation in educational theory and practice arises from the unilateral use of research methods and techniques (surveys, interviews, content analyses, etc.). Description of the facts has been the most frequently used method in the process of research. However, this cannot be enough. It is necessary to grasp the causality and the regulations that govern

them. Among them a priority is a real insight into the issues that regulate teacher education, which is organized as a system, defined by a set of associated elements and a set of relationships between them.

The area of empirical research within the framework of educational theory and practice used a variety of methods and appropriate instruments so as to make the conclusions on research results as objective as possible, because they were made on the basis of data obtained from several sources. The following methods have been developed to support empirical studies: (a) content analysis (of instruction documentation, curricula, reports on instructional process and results, studies about teaching, professional and methodological literature, etc.); (b) test (questionnaire, testing and interviewing); (c) observation (planned observation of classes, lectures, teaching in general, etc.).

The sample of respondents included 833 students who graduated in the period from 2005 to 2010 and had all results in all variables, namely who have passed all exams covered by the curriculum of the Faculty of Education. The respondents were 735 female students (88%) and 98 males (12%), which indicated the feminization of the teaching profession.

The sample of variables for the assessment of undergraduate teacher education included the manifest indicators of success in teaching 24 narrow scientific fields, generated in three relatively independent requirements of the Faculty. Each study programme comprises several instructional courses from the same scientific field. Due to the fact that both students and faculties in Serbia significantly differ, optional modules have not been included in this study.

1. *General education*: 1. Serbian Language, 2. English, 3. Mathematics, 4. Pedagogy, 5. Sociology, 6. Developmental Psychology.
2. *Basic education*: 7. Literature and Literature for Children, 8. Culture of speech with Rhetoric, 9. Fundamentals of Natural Sciences, 10. General History, 11. General Didactics, 12. School and Family Education, 13. Educational Psychology, 14. Sociology of Education, 15. Philosophy of Ethics, 16. Health Education, 17. Computers in Education.
3. *Methodological education*: 18. Methods of work with disabled children, 19. Methods of Teaching Mathematics, 20. Methods of Teaching Natural and Social Sciences, 21. Methods of Teaching Serbian Language, 22. Methods of Teaching Visual Arts, 23. Methods of Teaching Physical Education, 24. Methods of Teaching Music.

Learning outcomes and competences acquired, which should be recognizable and objectively measurable, are grades given by university teachers for each study program, based on the five-point assessment scale from six (6) to ten (10). The sub-

ject of measurement cannot be defined by sole evaluator, but is rather determined according to the objectives set by the Faculty.

Factor analysis using principal component extraction and oblimin rotation was utilized. The data were processed in the computer software SPSS (Statistical Package for Social Sciences).

Results and Discussion

According to grades given by subject teachers, the respondents were the most successful in Methodological Instruction (Methods of Teaching Mathematics, Methods of Teaching Serbian Language and Methods of Teaching Visual Arts), and less successful in the General Education (Mathematics, Developmental Psychology and Philosophy of Ethics). The characteristic of the sample is that the average of students who have completed undergraduate studies is 7.95. Average length of the four-year study programme (240 ECTS) is 64 months, or 5 years and four months.

Indicators of the latent structure of primary teacher education in the first cycle of undergraduate studies were found with the use of a component factor analysis. The number of eigenvalue (λ), calculated from the overall correlation matrix of indicators of teacher education, equal to or greater than 1.00, was considered a significant number of latent dimensions. The value of Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .92, which exceeds the recommended value of .60, while the Bartlett's Test of Sphericity reached statistical significance, suggesting that factor analysis was justified. By calculating the correlation matrix main components, after extraction of both pattern and structure matrix factors and after oblimin rotation, five factors were obtained, which explain about 50% of the total variance of the system.

The structure of primary school teacher education (Table 1) was obtained after the main components had been derived by the oblimin rotation method, which was applied in order to get a simpler solution. The structure proved the actual existence of the latent dimensions of primary teacher education, which undoubtedly could be interpreted in accordance with the commensurable research.

Table 1. Pattern matrix (A) and structure matrix (F) of variables of teacher education

Variable	A1	A2	A3	A4	A5	F1	F2	F3	F4	F5
1. Serbian Language	.28	.24	-.13	.46	-.05	.50	.35	.16	.58	-.09
2. English Language	-.09	.09	-.05	.72	.03	.23	.15	.16	.67	.00
3. Mathematics	.23	-.21	.22	.38	.00	.43	-.06	.39	.53	-.01

Variable	A1	A2	A3	A4	A5	F1	F2	F3	F4	F5
4. Pedagogy	-.01	-.09	.15	.61	-.05	.30	.03	.32	.64	-.07
5. Sociology	.21	-.01	.00	.56	.21	.46	.11	.28	.65	.18
6. Developmental Psychology	-.03	.02	.09	.69	-.03	.31	.12	.30	.71	-.06
7. Literature and Literature for Children	.58	.29	-.05	-.03	-.10	.62	.42	.20	.27	-.14
8. Culture speech with Rhetoric	.63	-.31	-.03	.18	-.23	.63	-.13	.19	.41	-.22
9. Fundamentals of Natural Sciences	.52	.21	.18	.01	.02	.63	.36	.40	.33	-.02
10. General History	.66	.05	.02	-.11	.22	.62	.17	.21	.19	.20
11. General Didactics	.56	.06	.08	.20	-.01	.69	.23	.34	.48	-.04
12. School and Family Education	.40	.03	.16	.23	-.24	.57	.20	.38	.47	-.27
13. Educational Psychology	.13	.40	.25	.22	.20	.39	.48	.43	.40	.14
14. Sociology of Education	.47	.02	-.01	.35	.06	.63	.17	.28	.56	.03
15. Philosophy and Ethic	.09	.03	-.03	.29	.65	.20	.02	.08	.30	.64
16. Health Education	.40	-.10	.31	.05	.03	.51	.06	.44	.31	.02
17. Computers in Education	-.01	.75	-.15	.19	-.12	.21	.76	.06	.25	-.20
18. Methods of working with disabled children	-.13	.70	.30	.03	-.02	.14	.73	.39	.16	-.09
19. Methods of Teaching Mathematics	.17	.77	-.02	-.13	-.03	.29	.79	.15	.05	-.11
20. Methods of Teaching Natural and Social Scien.	.37	.40	.29	-.03	-.01	.55	.54	.48	.28	-.07
21. Methods of Teaching Serbian Language	.18	.22	.42	.10	-.17	.42	.37	.56	.35	-.21
22. Methods of Teaching Visual Arts	-.02	-.10	.72	.08	.05	.24	.04	.72	.29	.03
23. Methods of Teaching Physical Education	-.03	.12	.76	-.03	-.07	.24	.26	.76	.21	-.10
24. Methods of Teaching Music	.06	.18	.03	.22	-.57	.23	.28	.18	.30	-.60
Eigenvalue (λ)	6.84	2.09	1.13	1.01	1.01					
% of Variance	28,50	8,73	4,73	4,22	4,21					
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .925										
Bartlett's Test of Sphericity = 5546.98 Sig. = .000										

The first factor is defined by the manifest indicators of teacher education in Culture of Speech with Rhetoric, Literature and Literature for Children, General

History, General Didactics and Fundamentals of Natural Sciences. Learning outcomes, namely variables that have a significant impact on the first factor are students' capacity to master concrete speech and communication system, to apply knowledge of language and linguistic culture systems, to master fundamental knowledge about the nature of poetics and literature for children and young people; to have knowledge of the present and anticipate the future on the basis of their ability to analyse past events and processes; to recognize specific and different modes of modern teaching strategies, innovative models of teaching and learning technologies, and to solve various non-academic problems that commonly represent obstacles in the professional work of teachers. Given that this factor is dominantly determined by the competence of cultural awareness and expression, and social and civic competences (Council and the European Parliament, 2006), respective variables of fundamental teacher education, the first latent dimension could be defined as BASIC EDUCATION.

The second latent dimension is defined by the manifest indicators of teacher education with a high projection of variables including Computers in Education, Methods of Teaching Mathematics and Methods of working with disabled children. The learning outcome of the first variable, which has a significant projection on the second factor, is the competence to use the acquired knowledge in order to handle the computer equipment and individually apply information technology to processes of searching, providing and analyzing data and information for production of high quality media in education (Digital competence). Learning outcomes of the second variable are the ability to integrate pedagogical, psychological and general didactic knowledge into the didactic of Mathematics, the ability to link theory and practice in Maths instruction, and to master the regularities of functionally organized transfer of Mathematics culture onto pupils, as well as to deliver contents of modern Mathematics (Mathematical competence). The learning outcomes of the third variable having a significant projection on this factor are the ability to work with children with special needs in the process of inclusive education, and to apply special methods in everyday work with disabled children (Inclusive competence). Since this factor determines different specific competences in teacher education, the second latent dimension could be defined as SPECIFIC EDUCATION.

The third latent dimension is defined by the manifest indicators of teacher education with a high projection of variables including Methods of Teaching Physical Education and Methods of Teaching Visual Arts. The learning outcome of the first variable with a significant projection on the third factor could be described as the ability to implement methodological and didactic requirements necessary

for independent conduct of a practical Physical Education class that should be adjusted to capabilities and interests of younger school age children, or in other words, a methodological approach where teaching is focused on the goal, which is the development of motor skills and knowledge (Motor competence). Learning outcomes of the second variable are the ability to teach art in primary school independently, to design the curriculum of art instruction, to be able to select a representative piece of art that best illustrates the related visual art problems and to perform a detailed, verbal and visual analysis, and to be aware of the psychological stages of children artistic expression, artistic development and their creative skills (Art competence). Statistically significant projection of variables such as Methods of Teaching the Serbian Language contribute to defining this factor. Given that the dominant factor is determined by Instructional methodological competence, and methodological transformation of course contents, the third latent dimension can be defined as METHODOLOGICAL EDUCATION.

The fourth factor is defined by manifest indicators of teacher education in the English Language, Serbian Language, Pedagogy, Sociology, Developmental Psychology and Mathematics. Learning outcomes, or variables that have a significant projection on the fourth factor, are the ability to routinely communicate in English, sharing simple information, and using simple terminology to describe oneself, one's surroundings, things and events of interest or understanding, (Foreign language communication competence); to master the foundation of the phonetic, phonological, morphological and formational system of the modern Serbian language and the basic lexicology and syntactic system of the Serbian language (Native language communication competence); to understand basic pedagogical problems of science and create knowledge-base for successful monitoring of teaching in individual subjects of educational science (Pedagogical competence); to be able to think about society in terms of "a changing world" based on contemporary theoretical thought and empirical research (Social and civic competences); to build skills of dealing with children in line with developmental trends and specific physical, intellectual, emotional, social and other needs of a certain age (Psychological competence); to master basic concepts and assertions in the field of Algebra, Number theory, Combinatorics, Probability and Geometry, as well as to increase the level of logical thinking in general (Mathematical competence). Since the factor determines different core competencies in teacher education, the fourth latent dimension can be defined as GENERAL EDUCATION.

The fifth factor is a *bipolar factor*, because it defines the manifest indicators of teacher education both with a significant positive projection, such as Philosophy of Ethics, and with a significant negative projection, such as Methods of Teaching

Music. Certain areas, which do not share the initial teacher education as an object of measurement, represent a specific factor. The reasons for this should be sought in the assessment that the competencies which are provided by the curriculum are misapplied in practice, so instead of Methodological competence in Maths or Music, students need only a mathematical or musical knowledge, abilities and skills.

Table 2. Pattern (A) and structure matrix (F) of factors of teacher education of the second order

Factors	A1	A2	F1	F2
1. Basic Education	.79	.01	.79	-.13
2. Special Education	.33	-.48	.41	-.54
3. Methodological Education	.69	-.02	.69	-.14
4. General Education	.77	.07	.76	-.06
5. Bipolar Factor	.17	.92	.02	.89
Eigenvalue	1.88	1.03		
% of Variance	37.56	20.55		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .668		r = -.17		
Bartlett's Test of Sphericity = 394.473		Sig. .000		

Factor analysis of the correlation matrix of factors indicates that teacher education in the space of first-order is reduced to two latent dimensions, which explain about 58 percent of the total variance of the system (Table 2). The value of Kaiser-Meyer-Olkin measure of adequacy is .67, while the Bartlett test of sphericity reached statistical significance, suggesting that factor analysis has been justified. The first factor in teacher education in the space of second-order is defined by factors including General Education, Basic Education and Methodology of Education, as formulated in the basic hypothesis about teacher competences. The second factor of teacher education is a bipolar factor. There is a weak negative correlation ($r = -.17$) between these two factors of teacher education in the space of second-order, therefore we can conclude that the second factor of teacher education measures some other objects.

Conclusion

The quality of course instructions as well as the quality of overall teacher education represent key factors that lead to high quality education and improve the level of young people education. This depends on the quality of the teacher education

system of a certain country, on the content and pedagogy of teacher education, but also on the role stakeholders play at the macro, mezzo and micro level. Teachers in Europe are educated in a diverse and wide variety of institutes, faculties, and universities and by a wide range of curriculum models.

The results of this study indicate that the curriculum of teacher training and related education faculties in Serbia, designed for a three-part program structure, generally confirmed the assumption about the latent structure of the curriculum for primary teacher education, which comprises general, basic and methodological education. The competence-based curriculum provides a quality education of teachers. Factors were defined as learning outcomes which are described as competencies that the student receives after satisfying all degree programs. This study justifies the existence of three teaching and scientific fields and the introduction of one-adequate courses of study. This allows adjustment of teacher education to a new competency profile and a new method of changing the education and social system as a whole, not only in national but also in the European context. It is necessary to give priority to further strengthening the quality of teacher education and educational leadership training in continuity, research theory through practice, strengthen partnerships between universities, etc.

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Observing Teachers' Emotional Expression in Their Interaction with Students

Abstract

The purpose of the study is to establish the types of emotions that are expressed by primary school teachers, their frequency, and the situations that trigger them. Teachers were observed by primary education students during their practical work at school. The observations of 108 teachers in 93 primary schools in Slovenia were analysed. The results show that teachers express a variety of emotions with the unpleasant ones prevailing. Anger was the most frequently expressed emotion. The situations that triggered emotions were varied. Among them, students' discipline and academic achievement triggered the majority of pleasant and unpleasant emotions in teachers.

Keywords: *emotion, emotional expression, teacher, classroom, observation.*

Introduction

Emotions are complex psycho-physiological processes which include specific sequences of physiological changes, cognitive processing, verbal and non-verbal expressions and behaviour or action tendencies (Oatley & Jenkins, 1996). They can be understood as subjectively construed processes, influenced mostly by personal characteristics such as temperament, expectations or personal resources that shape the cognitive appraisals given to a specific situation by a specific person (e.g., Lazarus, 1991). Emotional experience is also socially structured and managed through social expectations in an individual's environment (e.g., Hargreaves, 2000).

Different aspects of the emotional process were analysed in previous studies on emotions (e.g., Siegel, 1999; Smrtnik Vitulić, 2009), valence being one of them. Regarding the valence, the most common categories are “positive” and “negative” (e.g., Fredrickson, 2008; Oatley & Jenkins, 1996). Positive/pleasant emotions are experienced when we reach a subjectively important goal or expectation, while negative/unpleasant emotions are experienced when we cannot accomplish or fulfil those expectations. Both positive and negative emotions may have an important adaptive function (e.g., Lazarus, 1991).

According to their complexity, emotions can also be categorised into basic and complex ones. Basic emotions seem to appear early on in the developmental process and their expression is thought to be similar in all cultures, they are characterised by specific brain activity patterns, typical adjustment function and facial expressions (Panksepp, 1994; Plutchik, 1980), which allow their easier recognition. According to Lewis (2002, in Santrock, 2005) the basic emotions are joy, anger, fear, sadness, disgust and surprise. On the other hand, complex emotions appear later in development and their expression is less typical. Hence, the recognition of complex emotions is more difficult and sometimes ambiguous.

Teachers and emotions

Emotions are often insufficiently represented in educational research even though emotions are frequently present at school (e.g., Hosotani & Imai-Matsumura, 2011; Zembylas, 2005). Pleasant experiences encourage the learning process, whereas unpleasant experiences have a hindering effect on student motivation, memory or creativity (e.g., Fredrickson, 2008; Lamovec, 1991; Pergar Kuščer, 2002).

Different authors report that teachers at work experience pleasant and unpleasant emotions (e.g., Chang, 2009; Day & Leitch, 2001; Hargreaves, 2000; Hosotani & Imai-Matsumura, 2011; Shapiro, 2010; Zembylas, 2005). Several studies observing teachers' emotions in the classroom (e.g., Hosotani & Imai-Matsumura, 2011; Shapiro, 2010) have confirmed joy as the most frequently experienced pleasant emotion, whereas anger was the most frequent unpleasant emotion.

Teachers' emotional experience and expression in the classroom are commonly triggered by students' learning process and achievement or by disciplinary problems. For instance, Hosotani and Imai-Matsumura (2011) found that teachers felt anger when students did not follow instructions, did not do their best, did not care about their peers or were involved in dangerous actions, etc. Teachers felt sadness when children displayed unfavourable behaviour regarding discipline, or when they empathised with the children, or when they felt that children were not educated to their full potential. Fear was reported by teachers when they noticed

children misbehaving or participating in physically dangerous activities and when they acknowledged their own high level of responsibility towards children. Teachers felt joy because of children's achievements and autonomy, within pleasant daily interactions with children or when children were joyous themselves.

The type of emotions experienced by teachers depends on their appraisal of the situation in the classroom, influenced by their individual goals, personal resources and previous experiences (Sutton, 2007). Teachers' beliefs about the characteristics of a good teacher are also an important influence on their appraisals (Gordon, 1997). These beliefs, such as being prepared for and reacting effectively to every disciplinary issue, being able to motivate any student to do their schoolwork or being fully responsible for the student's academic achievement, are often unrealistic (Michalak, 2005). These beliefs may be viewed not only as a product of the teacher's individual experience, but also as a product of broader social expectations imposed by colleagues, school management, school policy, cultural settings, etc. (e.g., Hosotani & Imai-Matsumura, 2011; Zembylas, 2005).

Aims of the study

The observations in our study aimed to establish (1) the emotions expressed and the frequency of such expressions, by primary school teachers in their interactions with students in the first five grades and (2) the situations that trigger these emotional expressions.

Methodology

Participants

One hundred and thirteen teachers were observed in this study. Five cases were excluded since they were not properly administrated (i.e., observation of students' emotions instead of the teacher's). In further analysis, observations of 107 female teachers and one male teacher were included, in the first ($n=24$), second ($n=21$), third ($n=29$), fourth ($n=20$) and fifth grades ($n=14$). 93 primary schools from various Slovenian regions were included in the study.

Observational scheme and data collection

Teachers were observed by first year primary education students from the Faculty of Education in Ljubljana, during their practical work experience in the

classroom. At the faculty, students participated in a special two-hour educational course on recognizing and describing emotions. They were also trained to use an observational scheme that included the type of emotion displayed and description of the situation in which the emotion appeared. The students used the described scheme to observe and record the teachers' emotional expression in the classroom.

Each student did their practical work experience at the primary school of their choice, mostly in their hometown. The headmaster of the school then selected the classroom for the student's practical work (first to fifth grade). The students visited the selected classroom for five days during their practical work experience. During their fourth visit, they observed teachers' emotions for five hours on one school day. Each teacher emotion was recorded when it occurred, in chronological order. If a certain emotion appeared more than once, it was recorded each time. The teachers were informed about the goals of the students' practical work experience, including the observation of their work in general. After the observation of their emotional expressions, the teachers were fully informed about the study and were asked for their consent to use the data. All the teachers gave consent.

The data collected by the students was checked by all three authors of the present article, for clarity of descriptions in all observed categories.

Results and discussion

In the results and discussion section, the type and frequencies of emotions, and the situations triggering them, will be presented and discussed.

Type and frequency of teachers' emotions

The results have shown that teachers expressed various emotions in the classroom and that these differed considerably in their frequency. On average, five emotions ($M = 5.01$) were expressed by each teacher during the observational period in the classroom.

Table 1. Types and frequencies of teachers' expressed emotions

Emotions	Frequency
<i>Unpleasant emotions</i>	353
Anger	262
Disappointment	52
Fear	20

Emotions	Frequency
Sadness	11
Shame	5
Guilt	3
<i>Pleasant emotions</i>	188
Joy	151
Surprise	25
Pride	12
Σ (all emotions)	541

During the observations nine different emotions were recorded. Among the unpleasant emotions were anger, disappointment, fear, sadness, shame and guilt, and among the pleasant emotions were joy, surprise and pride (Table 1). Unpleasant emotions ($n=353$) were expressed more often than the pleasant ones ($n=188$). Anger, the most frequently reported ($n=262$) of all pleasant and unpleasant emotions, was expressed approximately twice by each teacher ($\text{modus}=2$). Our results are in line with the findings of Hosotani and Imai-Matsumura (2011) and Shapiro (2010), who also found that anger was the unpleasant emotion most frequently expressed by teachers in the classroom. The second most frequently expressed unpleasant emotion was disappointment ($n=52$), followed by fear ($n=20$), sadness ($n=11$), shame ($n=5$) and guilt ($n=3$). Among pleasant emotions joy was most frequently reported ($n=151$), expressed approximately once by each teacher ($\text{modus}=1$), followed by surprise ($n=25$) and pride ($n=12$).

These results were in accordance with other studies on teachers' emotions in school (e.g., Chang, 2009; Hargreaves, 2000; Hosotani & Imai-Matsumura, 2011), which have reported teachers experiencing and expressing pleasant and unpleasant emotions.

The overall ratio between pleasant and unpleasant emotions was approximately 1:2. Fredrickson (2008) recommends a ratio of 3:1 in favour of pleasant emotions. Unpleasant emotions influence the emotional balance more powerfully and thus an individual needs to compensate for unpleasant emotions with three times the amount of pleasant emotions, in order to maintain an overall positive ratio between the emotions. Our results showed approximately twice as many unpleasant emotions as pleasant ones, and were not in line with Fredrickson's recommendation. Since pleasant emotions in teacher-student interactions may contribute to a pleasant atmosphere, supporting students' competence and autonomy (Meyer & Turner, 2007), teachers should be encouraged to express pleasant emotions more

often (Sutton, 2007). However, it is also important to consider the authenticity and sensitive placement of such emotions. Furthermore, teachers' expression of unpleasant emotions should be effectively regulated (Chang, 2009).

In our study, the basic emotions prevailed in the teachers' expressions. The basic emotions recorded among the teachers ($n=469$) were anger, joy, surprise, fear and sadness. The complex emotions recorded among the teachers ($n=72$) were disappointment, pride, shame and guilt. The prevalence of basic emotions may be partly due to the fact these emotions are easier to recognise *via* their distinctive facial expressions than complex ones.

Situations that trigger emotions

Descriptions of the situations that triggered emotions in the teachers were reviewed by all three authors of the study and organised into several response categories for each observed emotion. Each description was then placed into one of these categories. The situations which triggered particular emotions were varied, though different emotions could be triggered by the same situation. The following section will discuss the most common situations that trigger emotional expressions and the frequency of each unpleasant and pleasant emotion.

The situations that triggered the teacher's *anger* ($n=262$), were: when students lacked discipline ($n=105$; i.e., fighting with each other), when they did not follow instructions ($n=69$; i.e., doing the exercise incorrectly because the students did not follow the teacher's directions), when they were inattentive ($n=60$; i.e., a student losing their belongings), when they did not perform well academically ($n=13$; i.e., a student not knowing the answer when asked), when they were in danger ($n=10$; i.e., students jumping from a great height) and in a few other situations ($n=5$; i.e., when a student rebelled). Our observations of the situations that triggered anger are similar to those found by Hosotani and Imai-Matsumura (2011); e.g., teachers felt angry when students did not follow instructions or did not do their best. If these expectations are not fulfilled by their students, teachers may feel anger.

Disappointment ($n=52$) was expressed by the teachers when the students did not follow instructions ($n=32$; i.e., a student did not bring the required equipment), did not perform well academically ($n=12$; i.e., when any student did not score all points on the test), were not paying attention ($n=5$; i.e., students were restless) and in some other situations ($n=3$; i.e., a student cheated at games). Consequently, when the students failed to meet expectations, their teachers experienced disappointment.

Teachers expressed *sadness* ($n=11$) in situations where the students did not follow instructions ($n=6$; i.e., the students did not start their work when instructed to do so), did not perform well academically ($n=3$, i.e., when a student still did

not know how to multiply), and in some other situations; e.g., when a student was scorned at home because of bad grades. Similarly, in the study by Hosotani and Imai-Matsumura (2011), teachers felt sadness when children displayed unfavourable behaviour regarding discipline, when they felt empathy with the children when they were sad, or when they felt that the children did not receive adequate education. In our study teachers expressed sadness to change the students' behaviour. Some authors (e.g., Krevans & Gibbs, 1996) perceived such intentional expression of emotions as inappropriate disciplinary practice towards children.

Fear ($n=20$) was triggered in situations when the teacher was concerned about a student's health ($n=16$; i.e., when a student got hurt) and when the students did not perform well academically ($n=4$; i.e., students did not know the answer). Similarly, Hosotani and Imai-Matsumura (2011) reported that teachers experienced fear when they noticed children misbehaving or engaging in physically dangerous activities. On the other hand, their study showed that teachers sometimes were also afraid because they felt a high-level of responsibility for the children. In our study, the situations that triggered fear in the teachers were probably connected with beliefs that the students were in danger or that they were not able to cope with a situation; but in some cases of underachieving students, the teachers may have acted frightened in order to motivate the students to learn.

Shame ($n=5$) was observed in situations when a teacher did not know the answers to the students' questions ($n=3$) and when the students did not perform well academically ($n=2$; i.e., a student answered incorrectly in front of an observer). *Guilt* ($n=3$) occurred when the teachers forgot to give sufficient instructions and as a result the students did not do their homework ($n=2$) and in one case, when the teacher had to tell the students about unnecessary absence. In our study the majority of the situations that triggered these two emotions were connected with the teacher's negative self-evaluation and feelings of having let down their students.

Among pleasant emotions, the situations that triggered *joy* ($n=151$) included: the students' achievement ($n=58$, i.e., a student did the calculations correctly), funny events ($n=35$; i.e., a student told a joke), relaxing events ($n=24$; i.e., students' play), following instructions ($n=19$; i.e., a student brought the required equipment), novelty ($n=9$; i.e., a student brought an interesting toy) and a few other situations ($n=5$; i.e., a vet's visit to the classroom). Also in the study by Hosotani and Imai-Matsumura (2011) teachers mostly felt joy because of children's achievements, within pleasant daily interactions with children or when children were joyous themselves. In our study, the situations that triggered the expression of joy were more diverse (including students following instructions). Based on the reasons given in our study, it can be concluded that the teachers perceived the students'

achievement and diligent behaviour as subjectively important. They also shared the students' joy when something funny, new or relaxing happened.

Pleasant *surprise* ($n=25$) occurred when the students achieved unexpectedly ($n=9$; i.e., a student fulfilled a difficult task), did something new ($n=8$; i.e., a student found a new solution to a task), were highly motivated for school work ($n=4$; i.e., students were enthusiastic when writing an English test) and offered creative solutions ($n=4$; i.e., students proposed an unusual idea). We can conclude that teachers perceive achievement, motivation for school work and creativity as something nice happening unexpectedly (Milivojević, 2008).

In our study, the teachers expressed *pride* when the students excelled academically ($n=12$). For example, when a student put more effort into learning about a certain subject the teachers felt pride as they obviously perceived these achievements as non-standard and personally important events.

From these results it can be seen that there are two triggering situations that are common to different unpleasant and pleasant emotions. The occurrence of these two situations that trigger different emotions is presented in Table 2.

Table 2. Emotions triggered by achievement vs. under-achievement and following instructions vs. not following instructions

	(under)achievement	(not) following instructions
<i>Pleasant emotions</i>		
Joy	58	19
Surprise	9	/
Pride	12	/
<i>Unpleasant emotions</i>		
Anger	13	69
Disappointment	12	32
Sadness	3	6
Fear	4	/
Shame	2	/
Σ	113	126

In the classroom setting, student achievement and following instructions triggered different emotional expressions in the teachers (Table 2). The students' academic achievement resulted in the teachers' feeling of joy, surprise or pride, while the students' underachievement resulted in the teachers' anger, disappointment, sadness, fear or shame. Students who followed instructions triggered joy in

the teachers, while the opposite was a reason for triggering anger, disappointment or sadness in teachers. Obviously, the same situation may arouse different emotions, thus supporting the notion that specific emotions are the consequence of the teacher's subjective appraisal of the situation.

Since student achievement and following instructions were most frequently connected with the teachers' emotional expressions in our study, it may be concluded that these two issues were important for the teachers. This could be a result of the teachers feeling responsible for the students following their guidance at school work and consequently performing well academically (Chang, 2009; Shapiro, 2010).

Teachers' responsibility for student discipline and achievement may also be connected with teachers' beliefs regarding what "a good teacher" should be. These beliefs can be unrealistically high, such as being prepared for and reacting effectively to every disciplinary issue or being fully responsible for students' academic achievement (Gordon, 1997; Michalak, 2005). Perhaps these expectations contributed to the fact that student achievement and disciplinary issues most frequently evoked emotional experiences and expression in the classroom.

Conclusions

The results of the presented study indicate that primary school teachers express various emotions. Unpleasant emotions prevailed, and anger was overall the most frequently expressed emotion. The teachers' emotions were triggered in different situations, but student discipline and academic achievement appeared to be the two primary sources of the different pleasant and unpleasant emotions in the teachers. These results indicate that the same situation may be perceived in different ways, resulting in different emotional experiences. The results also implied the special importance of the two situations for teachers: (1) *student discipline*, highlighting the strategies teachers use in managing discipline in their classroom; (2) *students' academic achievement*, which may be connected with the teacher's feeling responsible for their students' success. The teacher cannot take full responsibility for their students' achievement and discipline (Gordon, 1997; Michalak, 2005), even though it is sometimes hard to decide the limits of the teacher's responsibility.

The results of our study have many implications for the professional development of (future) teachers. In their educational programmes, awareness and understanding of emotions should be encouraged (Chang, 2009; Zembylas, 2005). The development of strategies to regulate emotions, particularly unpleasant emotions,

may help teachers improve their teaching and facilitate the learning process in their classroom.

The advantage of our study was the observation of many different aspects of emotions, especially the situations triggering teachers' emotions. On the other hand, the one-person observation of teachers' emotions may be subjective, and represents a weakness of the study. Further research could combine observations with teachers' self-experience and/or students' emotions.

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Documentation and Management of Conflicts in Science Classrooms: Experience from Nigeria

Abstract

Issues and controversies are part of student variables and characteristics in science learning. Not many teachers are prepared for the kinds of challenges that are capable of engendering new ideas and innovations when they occur in the science classroom. This study investigated the nature of conflicts that are generated in the science classroom. One hundred and four lessons taught by 15 pre-service science teachers in a few Nigerian secondary schools were analyzed. Fifteen negative conflicts were documented. The analysis of the responses to the questionnaire administered to another sample of 220 in-service science teachers not only confirmed the extent and gave the frequency of occurrences of these negative conflicts, but ranked students' poor home background the highest cause of them. Good methods of teaching, adequately equipped laboratories, provision of an appropriate stimulating environment and training were ranked highest among the remedial strategies suggested by the respondents in tackling conflicts and controversies in the classrooms. Those useful but predictable findings are part of teachers' customary narratives. For that reason, this study sought to constitute those surface experiences afresh and at deep level perceptions and resolve the conflicts through engaging students in out-of-school activities like visits to a science museum and community exposure.

Keywords: *science classroom, nature of conflicts, classroom management, conflict resolution*

Introduction

Interaction in the science classroom has always been triple dynamics between the teacher, the learner and the learning materials (Adigwe, 2004; Anderson, 1982; Utulu, 2005 & Awotua-Etebo, 1999). The three variables interact harmoniously to produce the intended learning outcomes. Stakeholders, educationists and researchers are often concerned about making sure that these important inputs, the right calibers of teachers, quality student intake and adequate learning facilities are there for effective learning to take place. They want to be sure that there is a learning environment for students to concentrate, to invest more effort and time and to take academic work more seriously. These are challenges that teachers too have to contend with everywhere. Students' engagement in academic work, students' characteristics, teachers' characteristics and availability of learning materials, instructional strategies and assessment procedures are parameters that often attract the attention of researchers. Not many teachers prepare for occurrences outside their stated objectives, hence many educators are of the opinion that conflicts and controversies are bad, that they produce negative results and nothing else. Consequently, common wisdom implies they should be eliminated from the established framework of institutions of learning. The hypothesis is that our classrooms are alive with issues and controversies where an exploratory study could make a positive contribution to knowledge, curriculum development and curriculum implementation at the classroom level.

The presented study conducted in science classrooms in Nigeria investigated the type of conflicts and controversies that were generated, the frequency of occurrence, and the teaching-learning variables to which teachers attribute them. It also looked at preferred remedial strategies for curbing negative conflicts.

Problem of the Study

Looking and observing what goes on in our classrooms, one would be fascinated about issues that occur outside planned and intended learning outcomes. The issues could be positive or negative. We may not be able to run away from them. This is in spite of Tyler's suggestion or insistence on an "objective-oriented" model or "ends and means" affair (Tyler, 1949), that once learning objectives are formulated, a high degree of achievement must be targeted at. What happens to incidental and unplanned interjections and events that often emanate in the classrooms? Do we count them off as one of students' antics that require no attention from teachers?

How do we manage them even when they look negative so we can bring something positive out of them? These, simply stated, are the problems of this study. The purpose, therefore, is to document these issues and conflicts, noting the frequency of occurrences and managing them.

Research Questions

The following research questions were addressed in this study: What conflicts and controversies are generated in Nigerian science classrooms? What is the frequency of occurrence of those conflicts and controversies? What teaching-learning variables do teachers attribute them to? What remedial strategies are offered for curbing negative conflicts?

Methodology

Sample and sampling procedure: There were two groups of subjects for this study. One group was made up of an intact sample of 15 pre-service third year chemistry education undergraduate students/student teachers of the Science and Technical Education Department of Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria that participated in 2008/2009 and 2009/2010 Teaching Practice Exercises mounted in the Faculty of Education. The other group consisted of 220 in-service science teachers. They also were an intact sample of teachers that participated in the Science Teachers Association of Nigeria (STAN) 2010 National Chemistry Panel Workshop and Ondo STAN Zonal Science Workshop held in Akure and Ondo, respectively, the same year. The participants in the National Chemistry Panel Workshop came from 17 states of Nigeria. The student teachers were asked to document events taking place in the classroom using a prepared pro forma. The second group, the in-service teachers by experience would be able to confirm or disagree with the discovery of their pre-service counterparts. They were to do this by filling in a questionnaire which also required that they suggest remedial strategies.

Instrument: There were two types of instruments. One was a pro forma designed to document, lesson by lesson, what issues and controversies occur in science classrooms. The pre-service science teachers using the pro forma were taught to watch out for unusual events that could lead to the achievement or non-achievement of instructional objectives stated for the lessons and document the same. The other instrument was a follow-up one, a questionnaire meant to elicit responses on how

often the conflicts earlier documented by the pre-service science teachers occur in their classrooms, the teaching-learning variables such as good and poor methods of teaching, availability or non-availability of teaching-learning materials and poor home background of the students were also listed for ranking as the causes(s) of the conflicts. The remaining part solicited suggestions for remediation. The instruments were validated by giving them to three senior professional colleagues in the Department who read through and offered suggestions that were made use of in preparing the final drafts. The reliability was determined through a test-retest method with subjects outside the study samples. The coefficients of reliability were put at 0.76 and 0.81 respectively for the two instruments. The data collected were analyzed by using simple frequency count, percentage and ranking.

Results

The results were presented in answers to research questions that were raised.

Research Question 1

What conflicts and controversies are generated in Nigerian science classroom?

Documented from the 104 lessons taught by pre-service teachers are the conflicts listed below. They are rank-ordered from the most frequent (1) to the least frequent (15) as shown in Table 1.

Table 1. Ranking of the conflicts documented
by pre-service teaching practice science teachers

Conflicts documented by pre-service teachers	Rank
Causing distraction in the class	1
Students not just ready to learn	2
Eating in class	3
Sleeping in class	4
Doing work outside normal class work	5
Coming late to the lesson	6
Refusal to perform given tasks	7
Fighting in class	8
Absent from class	9
Not working for lack of materials	10
Wanting to be taught in vernacular	11
Inability to contribute	12
Asking questions ahead of topic	13
Cheating during test	14
Answering phone call	15

Causing distraction includes students stretching abnormally, making noise, applying lipstick or powder, going out of the classroom without permission, abusing other students and other similar issues, showing lack of interest, fiddling with mobile phones or engaging in activities that have no bearing with the work at hand.

Research Questions 2 & 3

What is the frequency of the occurrence of these conflicts and controversies?

What teaching-learning variables do teachers attribute these conflicts and controversies to?

The in-service science teachers' rating of the conflicts as revealed by the questionnaire completed and returned and the teaching-learning variables they attributed the conflicts to are listed below from the most frequently occurring to the least. The variables the teachers attributed the conflicts to are also ranked. The percentage of the teachers doing so is in brackets. See Table 2.

Table 2. Rank order of a few of the conflicts and what the in-service science teachers attribute them to

Rank	Conflicts documented and presented on Table 1	Factors responsible and teachers' ranking		
		Poor methods of teaching	Non-availability of materials	Poor home background
1	Students coming late to lesson	2 (16.7)	3 (1)	1 (83.3)
2	Students refusing to bring specimens requested by the teacher	2 (22.2)	3 (18.5)	1 (59.3)
3	Students refusing to write notes given by the teacher even when materials are available	2.5 (17.4)	2.5 (17.4)	1 (65.2)
3	Students not working/writing because there are no materials	3 (7.4)	1 (74)	2 (18.5)
5	Students waiting till the end of the lesson before showing lack of understanding	1 (50)	2 (41.7)	3 (8.3)
	Absence from lesson			
6	Students sleeping during lesson	2 (30.3)	3 (15.2)	1 (57.6)
21	Students shouting and rejoicing having discovered new things from the learning materials	Good teaching method 1 (56.4)	Availability of materials 2 (35.9)	Good background 3 (7.7)

Table 2 shows that poor home background is the variable ranked highest by the majority of the teachers as responsible for most of the negative conflicts. Poor methods of teaching and non-availability of learning materials obtained low rank-

ing. Item 21 was analyzed under the positive variable of good methods of teaching, adequate availability of learning materials, and good home background. Good method of teaching was ranked highest, good home background lowest.

Research Question 4

What remedial strategies are suggested for curbing negative conflicts?

The remedial strategies are listed below from the most frequent to the least.

1. Lessons should be made more interesting by adopting the right method of teaching
2. Learning materials should be made available
3. Teachers should be encouraged by giving incentives
4. Teachers should be retrained through sponsorship to seminars, workshops and conferences.
5. Students should be encouraged to put more effort
6. Proper counseling of students on good behavior at home and at school.
7. Student home background to be improved
8. Teachers should take their lesson more serious
9. Parents should support teachers in disciplining students
10. Only well-trained teachers should be employed
11. Parents should be re-orientated toward science
12. Students should be supplied with good textbooks and writing materials
13. Teachers should act as good models
14. Reward and punishment should be often used
15. Ensuring manageable teacher student ratio
16. Attendance should be taken during lesson
17. Ensuring good teacher-student relationship
18. Inspectors should carry out routine check of teacher's works
19. Holding forums with parents and teachers regularly
20. Discourage mass promotion
21. Teach science subjects in the morning

Discussion

That negative conflicts were prevalent in 104 lessons as shown in Table 1, is an indication that all is not well with what goes on in our science classrooms. The in-service science teachers not only confirmed the prevalence of those negative conflicts, they attributed their occurrence mostly to the students' home background.

This explained why home background was ranked the highest cause of 14 out of 20 of such negative conflicts. That is the homes where the students came from which might not be supportive in helping their (students') academic work. This could mean that the parents were not able to meet psychological, physiological as well as academic needs of the students before they leave homes for schools. The observations made above are in line with those by Wolfram (2005) and Tenenbaum & Leaper (2003) that students' parental home background correlates highly with their (children's) behaviour in school.

Perhaps if the parents were to do the same, they would rank the teachers as the greatest cause of the students' poor performance and misbehaviour. The response to item 21 on Table 2 is revealing as well. The teachers attributed positive conflicts to good methods of teaching; good home background of the students came at distant third. That good teaching methods top the list of the remedial strategies suggested is a pointer that the teachers acknowledged such a factor as essentially indispensable in promoting the students' science learning and enhancing their performance.

To go beyond the teachers' customary rhetoric, the author suggests the creation of "scientific distraction", use of games and simulation, open-ended scientific inquiry, scientific walk to a science museum, industries and community exposure in the classrooms, schools and communities to enhance and complement a good classroom environment. The teachers would still be needed to provide such engagements. Braund and Reiss (2006) posited that communicating science out-of-school can be exciting, challenging and uplifting, and can make a science education more authentic and real.

Conclusion and Recommendations

In this study, it has been revealed that occurrences in the classroom usually go beyond what the teachers and the schools have planned for. Some of these are negative. They were documented and reported here. At the surface, some of them look simple and trivial, but they go a long way to determine not only the level of classroom organization and students' performance but also the tone of the school. No school administrator would want to condone disorderliness and indiscipline in the school for whatever reasons. When these (indiscipline or students' misbehaviour) happen, rather than trading blames, the author suggests that the students should be engaged in and out of school to enhance their science learning and to develop in them saleable skills and good attitudes. These are recommended

for teachers, school administrators and curriculum developers as ways of helping students to actualize their potentials and fulfillment in life.

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Occupational Mental Stress Assessment of Elementary School Teachers and Firefighters – Rescuers

Abstract

The presented study aims to compare occupational stress of 50 teachers and 56 firefighters. Both these groups are laden with high exposure to work-related stress. For assessing the occupational load the Meister questionnaire was used. We found that teachers perceived their occupational stress worse than firefighters and reached the 2nd degree of load. They complained mostly about the factor of overload and factors of the stress reactions – fatigue, mental overload and unacceptability to perform pedagogical work in the same intensity for a long time. Firefighters achieved better results (1st degree of load), even better than the population norm. An explanation may be found in the fact that firefighters represent a selected population of emotionally, psychically and physically resistant individuals.

Keywords: *occupational mental stress, questionnaire inquiry, teachers, firefighters*

Introduction

During the recent decade the character of work has changed markedly. Heavy manual labor has been replaced by mental work, where workers are often exposed to chronic stress. By many authors the stress is considered as an excessive load that exceeds the adaptation abilities of the individual. Paulik (2008, 2010) defines the occupational load as a general term including situations that put certain working requirements on the individual. Dealing with those belongs to the function of professional adaptation. Work-related stress is then understood as a situation where

the relationship between work tasks and individual dispositions to their management is objectively inconsistent or perceived as contradictory.

The intensity of mental tension depends mostly on the type of personality of the exposed individual. The dominant components in the structure of personality are motivation, resistance to stress, ability to adapt, self-confidence, experience, level of professional preparedness, emotional stability, etc. In total, we may talk about subjective determinants (Kožená & Matoušek, 2001; Kebza & Šolcová, 2008).

The objective factors causing occupational load are determined by the character of work, type of the working means, procedures, and technologies and by an influence of the external factors of the working environment. Among the most frequent ones there belong working monotony, high responsibility and possibility of endangering one's own health or the health of other people, high time pressure, intensive social interaction, poor communication, small cohesiveness of the group, unclear competencies, night shifts, the necessity of mastering new technologies including the information ones, etc (Křivohlavý, 2001; Paulík 2010).

The presented study aims to compare the working psychological load in two selected professions that are characterized by a high level of exposure to work-related stress. Our attention was focused on primary school teachers and a group of firefighters-rescuers.

From the point of view of exposure to occupational mental stress, **the teaching profession** belongs to those of a very high risk. Authors interested in the analysis of the teacher's mental load describe the time pressure and high degree of neurotic disorders, including the loss of efficiency during the long-lasting professional activity (Žídková & Martínková, 2003; Hodačová et al., 2007; Seibt et al., 2012). Paulík (1998) stated that teachers of all types of schools negatively assess mainly the low social prestige of teachers, inadequate salary, insufficient equipment of schools and high administrative burden. Problems with pupils were mentioned as a less important factor. Paulík proved that teachers of various school levels evaluated the influence of various stressors on the final level of mental stress differently and also described differences in the evaluation of importance of individual stressors in men and women. Different moments in the perception of the measures of mental stress by men and women were also dealt with by Řehulka & Řehulková (1998), Kebza (2005) and Saforek & Pavlica (2008).

In terms of mental and physical demands, **the firefighter-rescuer profession** also has its own specifics that determine it as an activity highly demanding in both aspects. Here we can include a high degree of physical activity, intensive stress during rescue actions, working shifts, exposure to toxic materials, noise and high temperature (Šváb, 2006). Requirements on the personality firefighters-rescuers

are defined by Regulation No 487/2004 of the Low Digest, describing personal capabilities for providing services in security corps. An active rescuer should show good personal prerequisites, such as a healthy level of self-confidence, an ability to work in a team with discipline and responsibility, and resistance to mental strain. A prerequisite for professional performance are repeated preventive follow-ups to check the psychological resistance as well as good general health.

Method

In the year 2011 at the Department of Hygiene and Preventive Medicine of Charles University Faculty of Medicine in Hradec Králové an anonymous questionnaire inquiry among 50 primary school teachers and 56 firefighters–rescuers was conducted. The general characteristic of the investigated set of respondents is shown in Table 1. This table shows that the average age of the teachers was rather higher than that of firefighters. As expected, in the group of firefighters there were more men than women, the majority of the teachers were women. The length

Table 1. General characteristics of both studied groups

	Teachers		Firemen		p-value
Mean age	41,2 years		36,7 years		0,03
Duration of practice performed	15,3 years		14,8 years		p = 0,79
	n	%	n	%	p-value
Number and percentages of respondents	50	100	56	100,0	
Men	18	36,0	47	83,9	p < 0,0001
Women	32	64,0	9	16,1	
Younger 40 years	26	52,0	40	71,4	p = 0,04
Older or equal 40 years	24	48,0	16	28,6	
High school education	0	0	42	75,0	p < 0,0001
Lower university education	27	54,0	6	10,7	
Higher university education	23	46,0	8	14,3	
Marital status: married	30	60,0	29	51,8	p = 0,33
single	12	24,0	22	39,3	
divorced	7	14,0	4	7,1	
mate	1	2,0	1	1,8	

of professional experience was comparable in both groups. All the teachers had a university education. In the group of firefighters 75% had a high school education; the others had a lower or higher university education.

The level of work psychological load was assessed with the use of Mesister's questionnaire. The questionnaire has ten items, which are divided into three factors: I. Overload (time pressure, responsibility, conflictogenous work), II. Monotonous work (non-interesting, dull work with little impulses), and III. Non-specific stress response factor (too demanding, psychologically exhausting work, which cannot be performed for a long time with the same effectiveness). Statistical evaluation of the results starts with the calculation of the medians for each item found from the answers expressing the measure of agreement (5) or disagreement (1) on the 5-grade numerical scale. The bigger the value of the resulting median is, the more bothering the factor of overload, monotony or stress reaction is. For the possibility to compare our results with the norm, we present the median values given by Meister (Hladký & Matoušek, 1990; Žídková, 2002).

The final classification of mental stress was performed according to the standard method by Meister (accessible on <http://www.psvz.cz/zidkova/subdir/metody.htm>).

Statistical evaluation was performed using the program NCSS 2007. For comparison of quantitative data the Kruskal-Wallis analysis of variance with following multiple comparison tests (ANOVA) was applied. For assessing the qualitative data the χ^2 test of independence in contingency tables or Fisher's exact test was used.

Results

The results of occupational stress assessment in the group of firefighters-rescuers and teachers are presented in Tables 2 and 3. In the first column there are the total results for the whole set of probands, and then, separately, with regard of the age and gender of the respondents. In the last line we show the resulting degree of load. When comparing Tables 2 and 3 it is obvious that in all the items of Meister's questionnaire the firefighters obtained better results than the teachers and that these were even better than those given by the population norm or the critical values of median stated by Meister. Table 2 also shows that the male firefighters perceived occupational stress better than the female ones and that the younger members of the corps perceived individual items of the factor of overload and non-specific factor of stress reaction better than their older colleagues. The women and older respondents in the group of firefighters, however, complained about the time pressure and big responsibility, and their medians exceeded the level of the

Table 2. Results of occupational stress in firemen – rescuers. The levels of medians and critical value of median determined by Mister are presented

Factors and items	Whole set	Men	Women	Younger 40 years	Older or equal 40 years	Critical value
I. Overload						
Time pressure	3	3	4	3	4	3
Responsibility	2	2	4	2	4	3
Interpersonal conflicts	1	1	1	1	1	2,5
II. Monotony						
Dissatisfaction	1	1	1	1	1	2,5
Tedious work	1	1	1	1	1	2,5
Monotony	1	1	1	1	1	2,5
III. Nonspecific factor of stress reaction						
Nervousness	1	1	2	1	2	3
Exhaustion	1	1	2	1	2	3
Psychic fatigue	2	2	3	2	3	3
Decrease of long-term performance	2	2	2	1,5	2,5	2,5
Final level of load	1	1	1	1	1	

Table 3. Results of occupational stress in teachers. The levels of medians and critical value of median determined by Mister are presented

Factors and items	Whole set	Men	Women	Younger 40 years	Older or equal 40 years	Critical value
I. Overload						
Time pressure	4	3	4	4	3,5	3
Responsibility	3	3	3	3	3	3
Interpersonal conflicts	2	2	2	1	2	2,5
II. Monotony						
Dissatisfaction	2	3	2	2	2	2,5
Tedious work	2	2	1	2	1	2,5
Monotony	1	1	1	1	1	2,5
III. Nonspecific factor of stress reaction						
Nervousness	3	3	3	3	3	3
Exhaustion	2	2,5	2	2	2,5	3
Psychic fatigue	3	3,5	3	3	3	3
Decrease of long-term performance	4	3	4	3	4	2,5
Final level of load	2	2	2	1	2	

population norm. Both these subgroups showed also worse results when evaluating the factor of non-specific reaction (nervousness, exhaustion, fatigue), but these results did not reach the critical levels. Despite these intergroup differences, in the process of final **classification of the firefighters' psychic load** we proved that the firefighters reached **grade 1**; ie. Such a level of mental stress at which the health damage or affection of subjective state or effectiveness are not likely to appear. The level 1 of mental load was found in all the subgroups, ie. the men, women, young or older respondents.

Evaluation of mental stress in the teachers (Table 3) showed that the respondents from this group had obtained a bit worse results than the firefighters, but the critical value of median was exceeded only in the items of time pressure and decline of effectiveness in the long run. Both these items were negatively assessed mainly by the women and due to the higher number of them in the group of teachers it is possible that this fact explains the results of the whole set. The responsibility and conflicts at work were considered by the teachers (both men and women) to be worse than by the firefighters, but the results did not exceed the population norm. Also, the comparison of non-specific factor of stress by the representatives of both the professional groups was worse in the teachers than in the firefighters, but the results were comparable with the population norm, and in the item of exhaustion it was even better. Only the item "decline of effectiveness in the long run" was considered by the teachers to be worse than by the rest of the population, regardless of age and gender. Nevertheless, the women and older teachers had higher values so they perceived the decline of effectiveness in the long run worse than the men and younger individuals. An interesting finding was revealed in the male teachers in the items of exhaustion and fatigue. Similarly to the firefighters, no teacher considered their profession as tedious or monotonous, and thus showed better results than the general population. It should be pointed out that the male teachers felt less satisfied with their work than the female teachers. **Classification of psychological load in the teachers** showed that both men and women reached the **2nd grade of load**, which means the possibility of the subjective status or effectiveness being influenced. Grade 1 of load was found only in the teachers under the age of 40.

Possible statistical difference in evaluating the occupational mental stress in the teachers and firefighters is demonstrated in Table 4. It shows the percentage of particular answers of the respondents on all the 10 items of Meister's questionnaire. Answer NO means *I fully or rather disagree*, (assessment 1 or 2). Answer DON'T KNOW means *Sometimes yes, sometimes no* (assessment 3), and answer YES, means *I fully or rather agree*, (assessment 4 or 5). We were mainly interested in YES answers, by which the respondents expressed their belief that they were

Table 4. Comparison of firemen and teachers answers on particular items of Meister's questionnaire (results are presented in percentages; statistical analysis was done by χ^2 test in contingency tables)

Items:	Firemen			Teachers			p-value
	No	I do not know	Yes	No	I do not know	Yes	
Time pressure	30,4	41,1	28,5	14,0	32,0	54,0	0,013 (*)
Responsibility	53,6	23,2	23,2	30,0	38,0	32,0	0,144 (NS)
Interpersonal conflicts	92,9	7,1	0,0	66,0	28,0	6,0	0,0136 (*)
Dissatisfaction	85,7	7,1	7,2	64,0	30,0	6,0	0,003 (**)
Tedious work	94,6	5,4	0,0	76,0	18,0	6,0	0,008 (**)
Monotony	87,5	10,7	1,8	90,0	6,0	4,0	0,704 (NS)
Nervousness	80,4	12,5	7,1	40,0	48,0	12,0	< 0,001 (***)
Exhaustion	82,2	10,7	7,1	52,0	28,0	20,0	< 0,001 (***)
Psychic fatigue	64,3	25,0	10,7	30,0	38,0	32,0	< 0,001 (***)
Decrease of long-term performance	67,9	16,1	16,1	47,2	19,8	33,0	< 0,001 (***)

No = fully/rather disagree; I do not know = sometimes yes, sometimes no; Yes = fully/rather agree

increasingly exposed to particular sources of occupational mental stress. From Table 4 it is obvious that the employees of both the professions complained about the work done under time pressure, though the teachers markedly more than the firefighters ($p=0.013$). The biggest differences were found in the answers on the non-specific stress factors items. In fact, our results showed that the teachers statistically more often complained about nervousness, exhaustion, and fatigue and considered it to be impossible to perform their profession for a long run in an unchanged intensity. On the contrary, the majority of the firefighters did not express these complains. The members of both groups did not consider their jobs to be monotonous; they considered them rather diverse than tedious (especially in the case of the firefighters), and their work satisfied them. Statistically more often this satisfaction may be found in the firefighters (85.7%), vs. the teachers (64%).

Discussion

The aim of this study was to compare the occupational mental stress of primary school teachers and firefighters-rescuers. The evaluation was performed by

a standard questionnaire method using the Meister questionnaire, which proved in the hygienic practice to be a suitable screening instrument for a quick assessment of the impact of work on the psychic response of workers in different professions. This questionnaire was also recommended as a supplementary instrument for categorization of jobs according to mental stress (Žídková 2002). Our results revealed that in spite of considering both the professions as mentally demanding, the level of perceived mental stress was higher in the teachers than in the firefighters. Nevertheless, it is necessary to admit that the values of those usually did not exceed the population norm. It was exceeded only in the item of time pressure, namely in the female teachers, and in the loss of the long term efficiency, which was complained about mostly by the women and older individuals. An interesting finding was noticed: although the male teachers did not have a sense of overload, their profession brought them minor satisfaction than it did to the women, which subsequently reflected in their feeling of exhaustion and fatigue. The explanation may be found in the study by Řehulka & Řehulková (2001). They discovered that female teachers saw a source of stress mainly in working with pupils and in the mastering of the atmosphere in the classroom, so it means in the educational activity. Male teachers, in contrast, were more stressed by the problems in the career advancement – small salary and impossibility of further growth, which contributed to the low prestige of the teaching profession. Thus, considering the question of career as the most important source of stress for men, as stated by Paulik (1998), this problem was perceived more intensively by men than by women. The question of prestige was also discussed by Papršteínová (2011a). She proved that teachers were quite satisfied with their profession and attached a great value to the teaching profession. Nevertheless, most of them thought that the position of the teaching profession on the social ladder was very low and only a fifth of them were satisfied in this sphere.

The results of occupational mental stress assessment in the firefighters were quite different. In all the items they obtained better results than the teachers and their results were even better than the population norm, or the critical values of median set by Meister. The differences found may be explained, to a certain degree, by the selection of suitable individuals for the firefighter profession during the initial check-up and by following medical screening of health ability, including the mental one. From this point of view, firefighters represent a selected and regularly followed up population group, which only the psychically resistant individuals may join. This does not hold for the teaching profession. Another reason for the fact that the firefighters-rescuers perceived the occupational mental stress more easily is most probably bigger freedom in decision-making, thus, their work brought

them satisfaction and they considered it to be interesting and diverse. This fact, then, partially eliminates unfavourable effects of other factors.

While the psychological workload of the firefighters reached grade 1, the level of grade 2 was reached by the teachers. Anyhow, when compared with the data from the turn of the century, our results are more optimistic. Žaloudíková (2001) made a classification of occupational mental load of teachers and found this load being in the 3rd (highest) grade, where the health deterioration could not be excluded. In spite of the better findings of our study, we may conclude that our results are consistent with the published data of teachers' increased mental stress.

Due to a relatively small number of respondents, our study shows certain limits. The chosen method was also limited by the fact that only this single method was used for the occupational load assessment and the respondents' personality traits were not considered. The choice of the method was determined by our intention to use a method that is currently used in hygiene practice for the assessment of occupational psychological load in different professions from the collective risk point of view. Another limit of this study is represented by the impossibility to generalize its results on the whole teaching profession, as the extent of occupational mental stress in teachers of different school levels differs a lot. Elementary school teachers traditionally claim the maximum load (Papršteínová et al., 2011b, Žídková & Martínková, 2003). But even the elementary school teachers do not represent a homogenous group, as different perceptions of occupational stress may be presented by teachers of the 1st and 2nd degree grades. From this point of view our study is not differentiated.

The fact that within this study the respondents' personality traits were not investigated means a certain limitation. The reason for our choice of method was mentioned above. For further investigation it would be convenient to expand the battery of tests with methods established on the subjective perception of occupational load. As an example of methods focused on the personality diagnostics, the method based on a five-factor model of personality may serve (Paulík, 2010, Hřebíčková & Urbánek, 2006). In our country the standardized modification by Hřebíčková & Urbánek (2001) is available. Other method was used by Paulík (2008), who studied a possible influence of dispositional optimism, sense of coherence and hardiness on the relation of perception and assessment of occupational load.

Conclusion

Mental stress is an important factor affecting the sense of good health and satisfaction. Increased exposure to work stress may worsen both the physical and mental health of individuals, increase the number of days of sick leaves, and decrease productivity. The decisive role in the prevention of employees' disproportional workload is played by their employers. They should prevent the risk of increased exposure to work stress by searching for the sources of the load and their removal, permanent control and improvement of working conditions, and better work organization. In the case of the teaching profession, it is possible to go on with the implementation of psychosocial interventions, such as stress inoculation training, stress management training, social motivation training, co-worker support group formation, etc. The survey of most frequently used psychosocial programs is published in the paper by Czesław Czabala et al (2011). The individual psychological advisory has an irreplaceable role. It should be available even to candidates of teaching during all the years of studies. All this ought to be done with one goal – to raise healthy individuals, who will be able to take part in the education of future generations without detriment to their own health and that of our children.

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Educational Strategies of Teachers with Various Senses of Efficacy

Abstract

The main objective of this study was to verify the hypothesis about the relationship between a sense of efficacy and educational strategies for teachers, conceptualized as a heteronomy – autonomy dimension. A move towards autonomous strategies should be linked to a strong sense of efficacy in teachers. The study, planned in this manner, was to verify the concept of education strategy discussed in this article, and the ability to predict educational strategies in schools based on the knowledge of the sense of efficacy in the teachers implementing them. The results positively verify these hypotheses, but also show the problematic ruling which of the strategies (heteronymous or autonomous) is more effective in the perception of teachers.

Keywords: *education strategies, reinforcement, development, adaptation, ideology, sense of efficacy, the study of teachers.*

The Problem

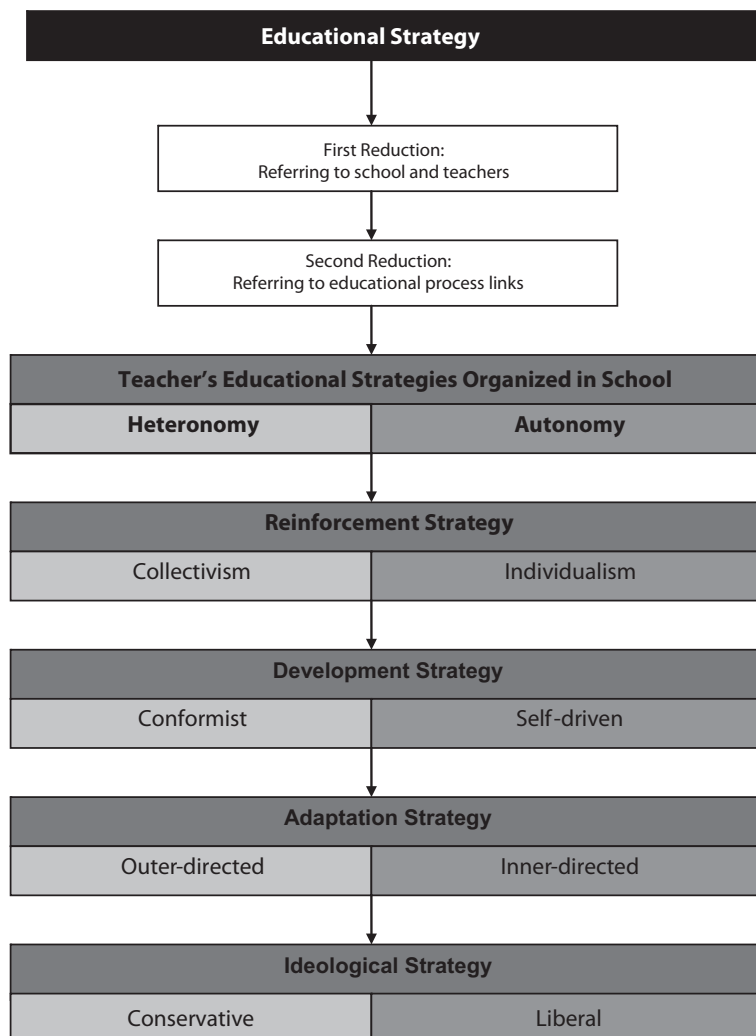
Educational strategies and teachers' sense of efficacy are two theoretical categories that describe and explain the educational practices of schools. As they are presented in the following text, these categories constitute a concrete proposal for conceptualizing educational practices in schools, one which is set in a functionalistic paradigm, more specifically in a socio-cognitive theory and in contemporary progressivism. The main categories of analysis are educational strategies, within the purview of which teachers' sense of efficacy has been included. The latter vari-

able makes up a criterion for verifying the accuracy of theoretical concepts and educational strategies, since it has been well established in socio-cognitive theories, and repeatedly and positively verified in empirical studies (cf. Bandura, 1994), while the concept of educational strategies is only at the stage of empirical verification (Chomczyńska-Rubacha, Rubacha 2007, pp. 35–48 and 73–80). For theoretical reasons (see below) there is the possibility of predicting variability for educational strategies based on the knowledge of teachers' sense of efficacy. This fact was used to empirically verify not only the educational strategy (though this is an important goal), but also the whole theoretical model: teachers' sense of efficacy – educational performance. Let us begin with the conceptualization of educational strategies.

The concept of strategy refers to the construct that comprises the overall concept of what strategy should entail and to the plan of its implementation in activity. There are thus two levels in the concept of strategy: the level of operation, activity through which the strategy is carried out, and the level of the concept pertaining to this activity, or in other words, the idea for its effective performance. If we apply this construct to education, the strategy will include its concept, but also a plan of implementation, a plan of concrete actions. For instance, a rewarding educational strategy includes an idea for a definite reward (what to do?) based on a general conception of raising the child to become an honest adult. In order to fully relate the idea of strategy to educational practices, i.e., to speak of an education strategy, we should also address the theoretical context of education, and therefore the practices with which, in a formal sense, strategy is concerned. However, as educational activity is structurally complex, it requires reduction so that we may refer to its axial – though to some extent homogenized – dimensions. The first reduction will apply to persons engaged in educational activities – thus teachers, and if this is so, then education shall simultaneously be reduced to school practices. Thus, as shown in Figure 1, our strategies are strategies for teaching, for education in school. The second reduction will apply to the main nexus of the educational process: the purpose of education understood from within conventional contemporary progressivism, the creation of conditions for student activity, a micro-social framework of educational processes, and an axiological space for educational practises. From these nexuses four educational strategies can be deduced respectively: reinforcement, development, adaptation, and ideology. Through a detailed analysis of the theories of reinforcement, development, adaptation and educational ideology (cf. Chomczyńska-Rubacha, Rubacha 2007, pp.39–48) a general dimension in which we can identify educational strategies in terms of content was distinguished: heteronomy – autonomy. In the space between the edges of this continuum lie most of the conceptualizations of the process of education: from the concept emphasizing

compulsion in education to the concept emphasizing autonomy in education. In the next step, we related the dimension of heteronomy – autonomy to specific strategies, introducing for each one its detailed version: reinforcement strategy (collective – individualistic), development strategy (conformist – self-driven), adaptation (outer-directed – inner-directed), and ideology (conservative – liberal).

Diagram 1. Order of the Construction of Educational Strategies.



Finally we offer the following definition of educational strategies:

1. Reinforcement strategies are teaching actions which allow for the stimulation and maintenance of some forms of behaviour, and the suppression and extinguishing of others, on the collectivism-individualism continuum of standards.
2. Development strategies are teaching concepts and actions that lead pupils to the achievement of behaviour standards, characterized by a higher level, in terms of quantity and quality, than baseline standards.
3. Adaptation strategies are concepts and actions which enable the teacher to monitor students' compliance with the social norms, as well as restore equilibrium to the educational processes. We recognize these strategies as belonging to the dimension of inner-direction – outer-direction.
4. Ideological strategies are concepts and actions which allow the teacher to link his/her own orientations regarding all the elements of the educational process (goals, methods, content, relations with pupils) with the general political worldview and ethical orientations. These last create – as Meighan stated (1993, p.200) – formal frameworks for education, especially higher education. An understanding of ideology, on which we base the above-mentioned definition, is derived from O'Neill's analysis (1981). Based on O'Neill's typology of ideology, we are putting our educational strategy on the conservatism-liberalism dimension (following Chomczyńska-Rubacha, Rubacha 2007, pp. 40–46).

We contrast the educational strategies understood in this way with the socio-cognitive understanding of the sense of efficacy. Bandura defined this variable as an individual's conviction on the topic of personal ability to meet a variety of task conditions, leading to the achievement of desired results. Consequently, the situational character of the sense of efficacy was stressed. On the other hand, in addition to situational circumstances, a sense of efficacy is largely based on an individual's previous experience and competence, something which Bandura also brought up (Bussey, Bandura 1999, p.691). Specifically, what is mentioned are cognitive-behavioural and motivational competencies. And in this respect, a sense of efficacy can be understood as a construct based on personal experience in the disposal of cognitive and motivational resources to solve everyday problems. Thus, we will not relate the sense of efficacy to concrete task situations, but to action in general. In this study, we rely on the dispositional conception of the sense of efficacy.

Collating the two concepts discussed, we can expect that educational strategies will be verified by the sense of efficacy if movement to their autonomous

variants (individualism, self-direction, inner-direction, liberal ideology) is linked with a strong sense of self-efficacy in teachers. The categories responsible for such a relation – as it arises from the concept of the sense of efficacy – could be the respondents' previous experience or their personal resources, which are associated with the sense of efficacy.

Method

The study was carried out using quantitative strategies in a quasi-experimental scheme as a theoretical verification type. The sample was randomized. Data were collected using paper and pencil testing methods, and the results were analyzed using the one-way analysis of variance model (ANOVA).

The study is guided by a hypothesis which aims to verify the accuracy of claims about educational strategies in relation to the examined teachers' sense of efficacy. Based on the premises derived from the autonomous characterization of educational strategies, one should predict that the average from the educational strategies test should increase (towards autonomy) with the movement toward higher averages for the sense of efficacy test. In short, statistical analyses should reject all the null hypotheses regarding a difference between the averages of each of the educational strategies in the three groups of the sense of efficacy (low, average, high).

To measure the grouping variable, Test Poczucia Skuteczności (Test of the Sense of Efficacy) (developed by the authors of this article) was used. This tool was designed to measure the generalized sense of efficacy, although its psychometric properties were related to two populations: the general population and the population of teachers (Chomczyńska-Rubacha, Rubacha 2013). The discriminatory power of the test items was measured using the point byserial correlation coefficient, ranging from .26 to .86, with an average of .50 in the version for teachers. Reliability, calculated using Cronbach's alpha formula, averaged .88. The test also has verified diagnostic, prognostic, and theoretical validity accuracy, estimated by means of factor analysis and cluster analysis. The sten norms were also worked out for the sample of teachers, to which the raw scores were related in the present study, establishing three levels of self-efficacy (cf. Chomczyńska-Rubacha, Rubacha, 2013).

To measure the educational strategy, defined above, Test Strategii Wychowawczych (TSW) was used (Chomczyńska-Rubacha, Rubacha 2007, pp. 73–80). The test consists of four descriptions of educational situations, containing reinforcement strategy indicators (collectivism-individualism; development strategy (conformism – self-direction); adaptation (outer-directedness – inner-directedness); ideo-

logical strategy (conservatism-liberalism). The subjects of the study responded to these descriptions on a four-point scale, revealing their position on the continuum of a given strategy. The raw score can be calculated cumulatively for all of the strategies (dimensions: heteronomy-autonomy) or separately for each of the strategies. We developed the indicators of this test in such a way, as to simultaneously diagnose the subject's concept of education, as well as the guidelines for his/her pedagogical performance. We acquired the concept effect by placing the indicators of concrete strategies, reflecting the dimension of the individual's conception of education, into the descriptions of situations. This dimension was encoded into the referent of the concept of strategy. However, we obtained performance guideline effects through the scale of responses which required a decision from the subject as to the manner of behaving in the situation described. As can be seen, this approach is diagnostically more sensitive than an approach focused on the study of teachers' views, which – as demonstrated in other studies (Konarzewski 1992) – rarely coincides with their later activity. TSW is not fully standardized ($N=189$), though enough to be considered as an accurate, temporary research tool. The calculated point by serial correlation coefficients (.52-.69) sufficiently ensure the discriminatory power of the test. Similarly, TSW meets standards in terms of reliability, which in units of Cronbach's alpha falls between .89 and .92. However, we know least when it comes to the issue of theoretical validity. So far, we have succeeded in calculating the indicator of HIT Loevinger, which assumes that if a given position is consistent with the test as a whole (indicator of internal validity), then all of the subjects studied who responded to it in accordance with the key at the same time receive higher overall scores than those who answered contrary to the key (Guilford 1988). The ideal homogeneity of the test is a HIT coefficient equal to unity. Our results fell between .88 and .90. TSW is, therefore, a valid test with regard to its internal compatibility. In addition to the indicators shown, the test was subjected to temporary normalization using the average formula and standard deviation (cf., Chomczynska-Rubacha, Rubacha 2007, p. 79).

Discussion of Results

The highest average describes the adaptation strategy, revealing minimum negative skewness, thus a tendency towards inner-directedness. It is, however, so minute that we should rather talk about a distribution closer to a normal one. Moreover, this interpretation applies to almost all of the strategies. In this situation, the direction of skewness is not important. Teachers revealed the lowest average with regard

to development strategy, having at the same time the highest (though, also, not a very high) asymmetry in the direction of conformity strategy. The obtained results should come as no surprise, as orientations in the direction of autonomous strategies seem to be very challenging for teachers. To a certain degree, they have to give up on the repertoire of compulsion in exchange for practice in negotiating, establishing rules and their democratic observance. It is worth taking a look, here, at the standard deviations. They are not very low and indicate that the obtained strategy averages are quite multi-faceted, although also bereft of extreme values. This could mean that the average conceals the picture of inner variations, which could be interpreted as inconsistencies in educational strategies. After all, there is no clear trend towards heteronomy, but a trend towards autonomy does not exist, either. And it is the standard deviation which suggests that it is more a matter of teachers' "strategic chaos" than entrenching oneself in "safe-centric" positions. Of course, these deviations are not very high, so this finding should be treated with great caution.

Table 1. Averages of educational strategies (not very high)

	N	Minimum	Maximum	Average	Standard Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Error
SOE	170	1.00	3.00	1.9882	.,0491	.016	.186
ESG	170	1.00	3.75	2.3721	.63563	.129	.186
RS	170	1.00	4.00	2.3529	1.07369	.330	.186
AS	170	1.00	4.00	2.5765	.87539	.,023	.186
DS	170	1.00	4.00	2.0647	1.09406	.748	.186
IS	170	1.00	4.00	2.5588	1.15105	-.087	.186
N	170						

Source: own research.

Legend: SOE – sense of efficacy; ESG – Educational strategy – general result; RS – Reinforcement Strategy; AS – Adaptation strategy; DS – Development strategy; IS – Ideology strategy; N – Number of Studied Subjects

The sense of efficacy has a similar distribution to educational strategies, with almost zero asymmetry, i.e., with an average in the vicinity of the median, with the smallest standard deviation. This last observation means that the grouping variable is relatively homogeneous in its three variants. Generally, however, the studied group reveals slightly lower values for the sense of efficacy than the studied groups of teachers from the normalization sample of the test, although on the other hand, slightly higher values than the general population.

Arriving at the verification of statistical hypotheses, we tested the error variance for homogeneity (Levene's test), and unfortunately it turned out that only ideological and reinforcement strategies met the assumption of homogeneity. In these circumstances, there are two options. One is to give up the analysis of variance in exchange for its non-parametric counterpart – the Kruskal-Wallis test.

Table 2. Homogeneity of Variance Test

	Levene's Test	df1	df2	Significance
ESG	22.637	2	167	.000
RS	2.407	2	167	.093
AS	4.301	2	167	.015
DS.	23.836	2	167	.000
IS	1.380	2	167	.254

Source: own research, legend v.s.

In such a situation, however, the inability to perform post-hoc tests eliminates the opportunity to comment on the direction of the differences. And this is precisely what our research hypothesis requires. Thus, it leaves us with a second way, that is, to perform the analysis of variance, yet choose such post-hoc tests that would take into account the lack of homogeneity of variance. This is, however, a questionable decision, and concerns the elasticity of the ANOVA test with regard to a lack of homogeneity of variance. According to Lindman (1974), univariate ANOVA is sufficiently resistant to this lack under the condition that in the data set there appear no extreme cases (outlying from the rest). We do not have this situation. Ultimately, following Lindman's directive with regard to heterogeneous variance we used T3 Dunnett's test as a post-hoc test.

The results obtained from the analysis allow us to reject the null hypothesis in its entirety, and indicate that the average of each strategy differs from the others due to the variations of the sense of efficacy. Thus, the sense of efficacy modifies teachers' educational strategies. This is true for all the strategies.

Table 3. One – way ANOVA

		Sum of squares	df	Mean square	F	Significance
RS	Between groups	29.421	2	14.711	14.853	.000
	Within groups	165.402	167	.990		
	Total	194.824	169			

		Sum of squares	df	Mean square	F	Significance
ESG	Between groups	18.456	2	9.228	30.930	.000
	Within groups	49.824	167	.298		
	Total	68.280	169			
AS	Between groups	12.333	2	6.166	8.788	.000
	Within groups	117.173	167	.702		
	Total	129.506	169			
DS	Between groups	20.840	2	10.420	9.590	.000
	Within groups	181.448	167	1.087		
	Total	202.288	169			
IS	Between groups	35.358	2	17.679	15.658	.000
	Within groups	188.554	167	1.129		
	Total	223.912	169			

Source: own research, legend – Table 1.

This may mean that there is a general principle at work here which can be combined with the universal dimension of heteronomy-autonomy. This is an argument for the validity and internal consistency of Test Strategii Wychowawczych, which is, however, at present not particularly important. The relation between the sense of efficacy and educational strategy still requires interpretation. Undoubtedly, teachers' educational performance belongs to heuristic behaviour, saturated with interpersonal openness, tolerance for cognitive discrepancy, readiness for confrontation, emotional tensions. The strength of these factors increases when strategies approach autonomous ones, because pupils' freedom of action increases. Bandura's research (1994), in turn, shows that the more difficult and more complex social situations in which the subjects are involved are, the more difficult it is for subjects to form specific expectations with regard to their situations. In such situations there is a rise in significance of the sense of self-efficacy.

Even if we now were to refer to the sense of educational efficacy, it can be expected that those who use autonomous strategies have more reason than others to believe in the possible success of their own actions. It may be that their experience – one of the sources of the sense of efficacy – is highly diversified, saturated with difficult instances and confrontational, educational situations.

Whether this interpretation is accurate can be checked by looking at the table containing post-hoc analyses. The latter analyses show that, generally, differences appear more often between a high, average, and low level of the sense of efficacy than between a low and average level. However, in many cases there are essen-

Table 4. Multiple Comparisons Dunnett's T3 Test

Dependent Variable	(I) TPS	(J) TPS	Differences in mean (I-J)	Standard error	Significance
RS	1.00	2.00	-.33721	.17967	.178
		3.00	-1.14180*	.19512	.000
	2.00	1.00	.33721	.17967	.178
		3.00	-.80459*	.18198	.000
	3.00	1.00	1.14180*	.19512	.000
		2.00	.80459*	.18198	.000
ESG	1.00	2.00	-.41570*	.10731	.001
		3.00	-.93590*	.14591	.000
	2.00	1.00	.41570*	.10731	.001
		3.00	-.52021*	.11582	.000
	3.00	1.00	.93590*	.14591	.000
		2.00	.52021*	.11582	.000
AS	1.00	2.00	-.36047	.17249	.115
		3.00	-.76631*	.19492	.001
	2.00	1.00	.36047	.17249	.115
		3.00	-.40584*	.14905	.024
	3.00	1.00	.76631*	.19492	.001
		200	.40584*	.14905	.024
DS	1.00	2.00	-.08140	.19385	.965
		3.00	-.86897*	.27317	.006
	2.00	1.00	.08140	.19385	.965
		3.00	-.78758*	.22767	.003
	3.00	1.00	.86897*	.27317	.006
		2.00	.78758*	.22767	.003
IS	1.00	2.00	-.88372*	.18718	.000
		3.00	-1.23483*	.23774	.000
	2.00	1.00	.88372*	.18718	.000
		3.00	-.35111	.21608	.289
	3.00	1.00	1,23483*	.23774	.000
		2.00	,35111	.21608	.289

*. Difference in mean is Essentials for level 0.05.

Source: own research, legend – Table 1.

tial differences between every variant of the sense of efficacy. This supports the hypothesis formulated above. The averages of educational strategies rise with the rise of subjects' sense of efficacy. However, looking at the values pertaining to each individual educational strategy we realize that even a strong sense of efficacy is not a factor that would significantly stimulate the use of autonomous strategies. There are probably more factors at work here at the same time. Or perhaps teachers' practical experience shows them that extreme adherence to an autonomous strategy is not educationally effective. Without a doubt, this problem is worth examining, especially since analyses regarding the heteronomy-autonomy dimension in education is – so far – more saturated with ideology than with empirical data.

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Types of Consciousness of English Teachers in Lower Secondary Schools in the Light of Paulo Freire's Theory

Abstract

The ever-growing need for learning, especially the English language becoming lingua franca, has created a huge challenge for teachers of English. There have been many conceptions of the teacher's role and the work they perform, however, these notions do not constitute a perfect model of a teacher as an educator of many young generations living in the changing world.

The teacher's role is to have the ability to develop themselves, to be able to reflect on their actions, to be creative and to have a high level of critical consciousness. The article presents the results of the research into types of consciousness of English teachers in lower secondary schools according to the types distinguished by Paulo Freire.

Keywords: *Paulo Freire, magical consciousness, naive consciousness, critical consciousness*

Introduction

There are many books and publications about teachers, their work and about improvement of their teaching skills. Many conceptual categories connected with teachers and their profession have been created, so it may seem there is enough support to become a perfect model of the teacher, but the truth is there is not. The dynamics of the world and the changes that happen so fast in everyday life have a paramount influence on the process of education. In that case the teacher becomes a person who must notice these changes in order to put them into

practice. Not only does this skill need a good educational preparation, but also it requires lifelong learning and improving the skills. To a certain extent it demands some knowledge about people and their abilities, which allows for reflecting on one's actions to entail critical and creative change if necessary. The lack of teacher reflection means believing in being infallible, which may in consequence manifest schematic thinking influencing students.

Judging Polish education and recent reforms in a rather critical way, I deeply believe that there are some changes required, for instance, there is a need to convert too formal teacher-students relations into a partnership, which allows for treating students in a more subjective way, which in consequence makes dialogue possible. In such a dialogical attitude this is a person who is the most important agent thinking independently, taking part in various activities, developing creativeness and individuality in order to create their identity.

Such an educational challenge requires brave and critical teachers who, as Giroux points out, will have some distance to the surrounding knowledge and will draw information from travelling, borders transgression, migration, and global communication (Giroux, Witkowski, 2010: 97). Therefore, the person of the 21st century is a person who learns permanently, is ready to accept challenges, is very mobile and flexible, has an unusual easiness to adapt to the changing conditions and expectations (Plewka, 2009: 27).

Henryka Kwiatkowska also claims that the teacher should be such a permanently learning person because complexity and unconventionality are the main characteristics of many pedagogical actions in the classroom (2010: 7). It definitely means having a high level of critical consciousness. To be a good teacher does not mean having a limited knowledge of the subject, but seeing it from interdisciplinary perspectives. It also means having good abilities of functioning in the society, having some specific personality traits, the system of values, the level of motivation and, last but not least, what is important is an open attitude towards students, methods and techniques of teaching.

Obviously, it is necessary to study teachers' attitudes and, at the same time, their types of consciousness to see how they perceive the world, since they are the people who have an influence on young generations building the future. It is evident, especially for teachers working in lower secondary schools, because they have to cope with adolescents who do not wish to be created according to the stereotypes that have not changed for many years. Educating students in a clever way means acting in a way that ensures individual development, maintains their own identity and personal maturity. What is more, with such an attitude teachers are able to become respected in the student society.

Henry A. Giroux believes that teachers in lower secondary schools ought to do at least three things. Firstly, give the students alternative languages. Secondly, give them an opportunity to take part in the dialogue, and thirdly, make it clear that if students speak they must take responsibility for their words. Critical thinking and democracy should allow many different voices. Students should be given the right to think in a way different from their teachers'. It is fair. Making them think like the teacher would be against the rules of critical pedagogy (Giroux, Witkowski, 2010: 79).

The possibility for change and subjective treatment of students is only possible in the reconstruction of teachers' consciousness. It is high time they understood that the realization of the curriculum is not the most important thing, but they should pay greater attention to students and their individual needs. However, if teachers want to perceive and treat students in that way, they have to feel like subjects themselves, which may provide them the sense of freedom, openness and decisiveness.

Background theory

The research was based on Paulo Freire's theory and his attitude towards the process of education. Henryka Kwiatkowska points out that independent thinking is essential in the teacher's work, which cannot be based only on someone else's experiences. Such thinking is needed since the conditions and problems of this kind of work do not stay intact (2010: 10).

Over the years, the thought and work of a Brazilian educator, Paulo Freire, have spread from the North East of Brazil to the entire continent, and have made a profound impact not only on the field of education, but also in the struggle for national development. He has perfected a method for teaching illiterates that has contributed to that process. In fact, those who, in learning to read and write, come to a new awareness of selfhood and begin to look critically at the social situation they find themselves, often take the initiative in acting to transform the society that has denied them this opportunity of participation (Shaull, 2008: 29). Paulo Freire's thought represents the response of a creative mind and sensitive conscience to the misery and suffering of the oppressed around him. Born in 1921 in Recife, the center of one of the most extreme situations of poverty and underdevelopment in the Third World, he was soon forced to experience that reality directly. His early sharing of the life of the poor also led him to the discovery of what he describes as the "culture of silence" (Shaull, 2008: 30). Confronted by this problem Freire turned

his attention to the field of education and began to work on it. Over the years, he has engaged in a process of study and reflection that has produced something quite new and creative in educational philosophy (Shaul, 2008: 30). The time for experimenting, creating and trying something new has come without being afraid of making mistakes. That is why the need to refute school as a place of transfer of knowledge and its verification by means of tests has become inevitable.

The main aim of the research was to discover and distinguish the types of consciousness among English teachers in lower secondary schools in Szczecin. According to P. Freire's assumptions, I took into account three types of consciousness: **magical**, **naive** and **critical**.

Freire developed a three-step model of development leading to critical consciousness. The three levels, magical (intransitive), naive (semi-transitive), and critical (transitive) thought, sometimes exist in a pure state but can overlap (Shor, 1992: 126).

Magical consciousness denies the power of human beings to change their lives or society. It is a static condition of fatalism which rejects human agency, denying that people can transform their conditions. The intransitive person thinks that what happens in society and life is controlled by inscrutable or divine forces, by an all-powerful elite, or by dumb luck and accidents. This kind of attitude leads to a disempowering conclusion: ordinary human beings cannot control, understand, or change the way things are. Life is the way it has to be. The powerful forces in life and society will do whatever they want, no matter what you think or say. Such people accept or celebrate the status quo, have the most closed minds (Shor, 1992: 126).

Naive consciousness lies in belief in cause and effect and in the human power to learn and to change things. But the world is thought of in isolated pieces, as if life and society existed in unrelated parts. The semi-transitive individual seeks to change things one at a time. She or he does not connect the pieces of reality into meaningful wholes but rather acts on parts in a disconnected way. Such a view of the world does not perceive how separate parts of society condition each other. This type of consciousness is partially empowered because it accepts human agency in the making of personal and social change. It presents one-dimensional, short-term thinking that leads to acting on an isolated problem, ignoring root causes and long-term solutions (Shor, 1992: 127).

Critical consciousness allows people to make broad connections between individual experience and social issues, between single problems and the larger social system. This critically conscious individual connects personal and social domains when studying or acting on any problem or subject matter. In education, critically

conscious teachers and students synthesize personal and social meanings with a specific theme, text, or issue. The problem of literacy, for example, is addressed in a context related to the everyday life and language of students. It suggests that people can learn what they need to know to act in a transformative way on the conditions they discover in school and society. With critical consciousness, students are better able to see any subject as a thing in itself whose parts influence each other, as something related to and conditioned by other dimensions in the curriculum and society, as something with a historical context, and as something related to the students' personal context (Shor, 1992: 128).

Problem Statement

Needless to say, the main aim of education is the student's multilateral development. Such an aim can be achieved only thanks to open-minded teachers who can understand their work and see it from many different perspectives. While it is a well-known fact that in many Polish schools there is still the "culture of silence" which destroys personal development, it should be the main aim of teachers' work to overcome it.

Critical consciousness is a priority principle in becoming a teacher – not the one who is only qualified by profession, but also the one who becomes a teacher through practice and reflection. It is hard to suggest guidance on how to become critical, however, in my research I wanted to give a suggestion for determining the type of our consciousness.

Among many professional skills which can be developed thanks to the type of our consciousness we can distinguish those that allow teachers to create and verify their own opinions through a dialogue, those that let them become innovative and brave in making decisions that will make them free from limitations and stereotypes in thinking and acting (Czerepaniak-Walczak, 1997: 8). All types of consciousness determine the way of thinking, perception of teachers' relations to the world including the knowledge and the way they teach and learn and how they behave in everyday life and at school.

The types of consciousness of English teachers in lower secondary schools should be examined with regard to their attitudes towards different issues to have a thorough picture of the situation. One has to bear in mind that each teacher does not possess one attitude towards different issues, so in consequence they cannot present a single type of consciousness. In some they may show critical attitudes and in others they may have naive or magical consciousness.

Methodology and research sample

In order to gather data I applied the method of an opinion poll, which allowed me to distinguish and qualify the teachers according to their types of consciousness. The questionnaire was my own idea built on the basis of P. Freire's view of the teacher and concerned the following areas or attitudes:

- reasons for becoming a teacher of English;
- state of knowledge concerning psycho-physical development of lower secondary students;
- need for using additional didactic equipment while teaching in order to stimulate the student's imagination;
- aims of teaching;
- possibility to achieve the aims of teaching;
- preferred style of work;
- forms and possibilities of self-education;
- possibilities of changes and transforming the surrounding;
- possibilities of achieving successes and the causes of failures.

Sixty-nine teachers working in lower secondary schools in Szczecin took part in the research (62 women and 7 men) in the school year 2009/10, which constituted 50% of the population.

While conducting the research I assumed that factors such as education, age, seniority and the teacher's degree could differ in the population. The teaching profession is still mainly a female domain. Similarly, the level of education did not reveal any significant differences because the whole population had a higher education. In most cases it was English studies, but there were also such faculties as, e.g., sociology, pedagogy, mathematics, economics, etc.

The population was not very diverse as far as age, seniority and the teacher's degree were concerned. In my research I categorised the teachers' age according to W. Dróżka's classification: up to 28 years old, 29–35, 36–49, 50 and over (Dróżka, 1991: 28) (Figure 1).

The biggest group comprised the teachers between 29–35 years old, which constituted 52.2% of the population, and the smallest group consisted of the teachers up to 28 years old (4.3%). The average age of the teacher was 33.5. It has its explanation in the Polish educational transformation after 1989. As a consequence, the Russian language was replaced by the English language at schools. Only a few Russian teachers retrained and as a matter of fact teachers of English were the generation of the 1990s; that is why they are now the most numerous group.

As far as the teacher's degree is concerned, there are four degrees in the Polish education system: a trainee teacher, a contract teacher, a nominated teacher, and a certified teacher.

Figure 1. Teachers' age

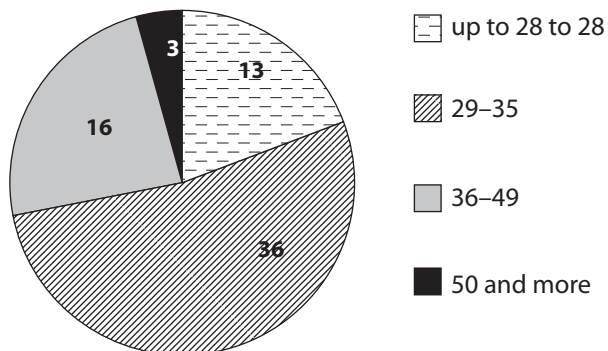
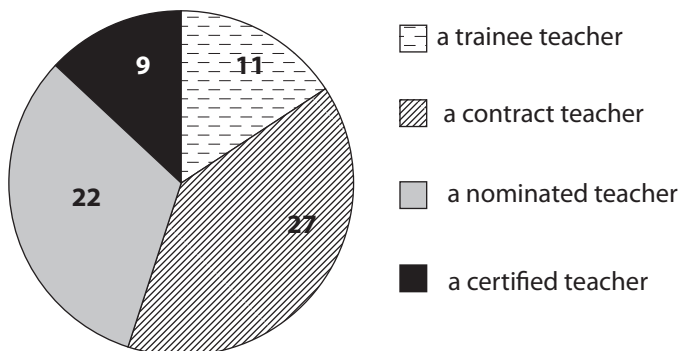


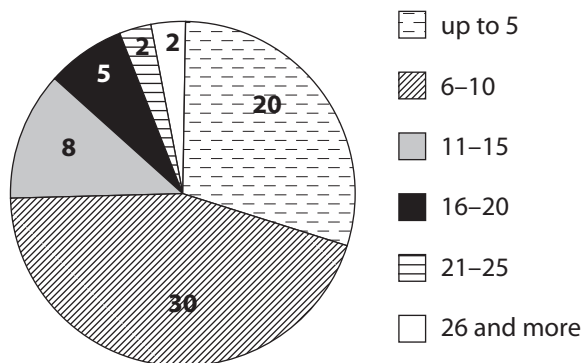
Figure 2. Teachers' degree



The biggest group included contract teachers. There were 27 people (39%) with this type of degree. The smallest group consisted of certified teachers, which was only 13% of the population (9 teachers). As mentioned before, such small variations were caused by the educational transformation.

The last variation was the teacher's seniority. Again with the reference to the historical transformation, the majority of the teachers have worked between 6 and 10 years (38%). Only a few teachers have worked for a longer time.

Figure 3. Teachers' seniority



To sum up the characteristics of the study population, it was clear that due to the transformation the biggest group of the teachers of English working in lower secondary schools in Szczecin were teachers between 29 and 36 years of age. At this level the dominant degrees were contract and nominated teachers who have the average experience of 6 to 10 years.

The research took place in Szczecin in the biggest city of the Zachodniopomorskie province, which is also a border city. The choice of this place had been made for the following important reason: the possibility of crossing the border and, as a consequence, culture transgression, which lets teachers become open to different norms or habits. It also brings the possibility of breaking most of the barriers and that is a significant stage in the social development, building the critical consciousness.

Research results

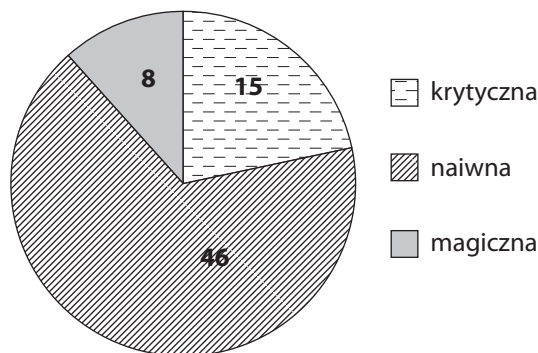
The analysis of the material I gathered and its results revealed that the naive type of consciousness prevails in lower secondary schools in Szczecin.

Among the study population there were 15 teachers with critical consciousness (22%), 46 teachers with the naive type of consciousness (67%) and 8 teachers with the magical type of consciousness (12%).

The teachers who were classified for the group of the critically conscious motivated their choice of profession with the interest in the English language and the willingness to work with the youth. They knew exactly the psychophysical development of adolescence and were open to dialogue and problems of students. They

were also strict towards themselves, which means they had high self-requirements. They were aware they had to be up to date to meet their students' needs.

Figure 4. Types of consciousness among teachers of English in lower secondary schools in Szczecin



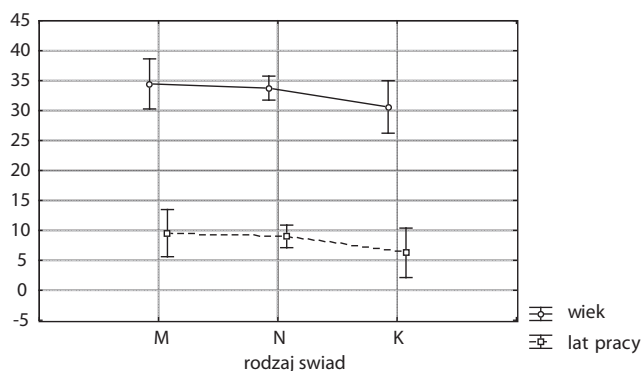
The largest group were the people who had become teachers because they had not seen any better chance for employment. They knew the characteristics of adolescence more in theory than in practice. They preferred talking and being listened to to having a dialogue with their students. They needed to be told to educate themselves and they did not like to be leaders.

The group with the magical type of consciousness, which presents the fatalistic vision of the world, had become teachers due to the fact they had not been offered any better employment solution. They were not aware of the changes that happen in the body and mind during adolescent. They were the type of people who believed that it was not the proper time for experiments and creating identity. They were deeply rooted in the banking model of education, so they did not see the need to communicate with students. For them self-education did not have any sense and was rather a waste of time.

Having focused on the variables mentioned earlier, such as age, seniority, background education and degree, it appeared that the two latter ones did not differentiate the population, however, it was possible to show some differences as far as age and seniority were taken into account.

The teachers with magical consciousness were between the age of 30–38 and seniority between 5–14 years. The teachers with the naive type of consciousness were between 32 and 36 years of age and seniority between 7 and 11 years. The teachers with critical consciousness were aged between 26–35 and with seniority

Figure 5. Relation of age and seniority to the type of consciousness [blue – age, red – seniority]



between 3–10 years. The research showed that the teachers with critical consciousness were the youngest ones. To a certain extent the reason for that was that they were educated by means of a banking concept of education and they were able to notice the disadvantages of it. In contrast, they tried to use a problem posing method in their way of teaching and dialogue. The remaining teachers were a bit older and probably they approved the banking concept of education and saw a lot of advantages in maintaining an army discipline in class.

Conclusions

Teaching others is an experience thanks to which teachers can learn a lot themselves, which is the real aim of education. Motivations for becoming a teacher are very complex. However, there is one substantial feature characteristic of all the teachers' work – it serves community and has a significant impact on every student they take care of. The stories about teacher-masters are proof of what they can do and achieve as teachers. Most of us, if not all, have experienced the teacher's influence on our lives, especially when they aroused our interest in something or helped us to become open to different beliefs and values (Christensen, 2008: 570).

Shaping education and attitudes to the methods and aims of teaching in a critical way is only one of many conceptions dealt with by pedagogy, however its assumptions are very convincing for better and more effective education.

According to P. Freire, critical pedagogy allows us to take into account different issues in a subjective way, which gives us an opportunity to fight with many different forms of oppression. Such actions can only be successful thanks to conscious liberation from oppression, so in consequence it requires critical thinking, especially in the process of education.

The results of the research confirmed my observations concerning behaviours and attitudes towards students and teaching. Naive teachers are the biggest group of the population and they are people who try to be so-called neutral, who can stay in a safe place and situation. They know that there are some changes needed in the area of education, but they are not bold enough to act as leaders. This is the group of teachers that should be paid the most attention to. In order to become more conscious and critical they ought to have some lectures, workshops, training or different forms of consulting organized. They should be given a special program of schooling.

There were only 22% of teachers with the critical type of consciousness. It is not a lot, however, it gives hope that there is a group of leaders who can set examples and can encourage the rest to act.

There were also teachers with magical consciousness with no special attitude to the issues concerning education since they do not believe in any possibility of change. They are not ready even to listen to talk about any changes that may redesign or have an influence on reality. It is a very dangerously thinking group, which may need a lot of effort to be convinced to alter anything.

Teaching is hard work; that is why teachers should be intellectuals who realize that teaching is a form of mediation between different people. It is also much more complex than the mastery of some kind of knowledge or following of the curriculum (Giroux, Witkowski, 2010: 93).

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New Educational Review



**Social
Pedagogy**

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Serbia

Correlation of Leadership with Professional Characteristics of Principals in Serbian Schools

Abstract

The aim of this research is to connect leadership and pedagogical characteristics of school principals in Serbia. Techniques of interviewing and scaling, instruments in the form of questionnaire and attitude scale have been applied in this paper. Research sample included 75 principals and deputy principals. Data obtained are processed in statistical SPSS package (factor scores on extracted Promax dimensions, Pearson's correlation and multiple regression analysis) and point to a statistically significant relationship between leadership and pedagogical characteristics of respondents¹.

Keywords: *education, leadership characteristics, principals, pedagogical competences.*

1. Introduction

Educational institutions today function in terms of strengthening schools' autonomy and assuming the care for the entire educational and pedagogical process, for all the students who participate in that process, their results, and school existence in strong requirements of high-quality and optimum work in the context of constant changes. In terms of increased decentralization of the school system,

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the power of decision-making is delegated to school principals, together with responsibility, which includes professional action and possession of a wide set of different competencies – pedagogical, as well as organizational and managerial. More and more studies indicate that the quality of school management determines the quality of school result – learning (Bamburg and Andrews, 1990; Töremen and Şanlı, 2011).

The concept of leadership does not imply uniformity, recipe, but the skill of leading and helping those who learn to use and develop their own potentials, motives and emotions in new values creation, in their attitude towards changes, creation of preconditions for reaching maximum results in personal and environmental development. Contemporary and innovative school prefers such an organizational culture and concept of (self)development and (self)education. This new concept of school leadership is especially challenging for the education in Serbia as a developing country, currently in the process of reforming and transforming education, democratization and decentralization.

From this emerges that pedagogical orientation is compatible with leadership, and that they are intertwined. Is it like this in practice, with school principals, where, according to the job description, organization and leadership competencies are foregrounded? This study aims to solve this particular problem – to bring leadership in relation to the pedagogical characteristics of principals in schools of Serbia. Research results should be “signposts” for improvement and mastering leadership skills, for the support to management in theory and practice.

Review of the literature

One of the most perceived achievements in the literature on leadership in education is “Leading Learning Communities” by the NAESP (2001), which identifies six characteristics of instructional leadership. A big trace was left by Fullan (2010), whose work includes insights into school reform, change management and leadership development in education. Interesting is also the work by Méndez-Morse (1992), which identifies six leadership characteristics that facilitate school change.

There are some interesting studies in the area of leadership characteristics of principals in North Africa, by Naong (2011) and by Copeland (2003), who investigated the presence of instructional leadership traits as identified by the NAESP, of Blue Ribbon middle and high school principals. Studies of The Hay group (1999) analyze characteristics of highly effective principals in Australia; and the study of Hay Management Consultants (2000), which compared 200 highly effective principals with 200 senior executives in business in England and found that both groups were equally impressive and that the role of head teacher is stretching to business.

For the time being, studies on the connection between leadership characteristics and other variables of employees in education are rare. Research by Ngambe (2011) into the connection between leadership and moral in high education must be mentioned, and also research by Titrek and Celik (2011) into the connection between principals' leadership skills and self-awareness.

Based on the literature overview, we can conclude that the subject of this research is relevant, justified, but also insufficiently studied so the results will open new direction in this field.

2. Research

2.1. Methods and sample

The data obtained were processed using a statistical method and regulated by quantitative and qualitative analysis. The Principal Component Analysis was carried out on questionnaires. Mutual connection between two variables was tested by Pearson's coefficient of linear correlation as well as Multiple Regression Analysis.

Research was conducted in 2011 in elementary and secondary schools in Serbia on a sample of 75 respondents consisting of principals and deputy principals. The study presented in this paper is part of a bigger study, partially presented in a paper by Andevski, Arsenijević (2012). The research sample is appropriate, with the elements of intentional.

2.2. Research instruments

The following instruments were used:

Questionnaire for (self)assessment of Leadership characteristics (36 items) ranked by a Likert scale. The validity of the measuring instrument was verified by the Principal Component The analysis showed that the measurement object was covered by 4 factors, while the reliability of the questionnaire was verified by Crombach's Alpha coefficient $\alpha=0.821$, which was satisfactory.

The questionnaire for pedagogical competences (EC-25 items, modified, short version, according to Staničić 2000) contained 25 questions also scaled by a 5-point Likert scale. The validity of the measuring instrument was verified by factor analysis which showed that the subject of measuring was included in three factors. The reliability of the scale's internal consistency was expressed by Crombach's Alpha coefficient $\alpha=0.9$ and represented satisfactory reliability.

3. Results

3.1. Principal Component Analysis

The items of the scales were subjected to the Principal Component Analysis, with the intention of reducing the initial set of variables and discovering the latent structure of two scales.

3.1.1. Factor Analysis for Leadership Scale

Four factors of leadership by Promax rotation were extracted (henceforth: LC factors), which jointly explained 36.8% of the total variance. The factors' structure with explanations, as well as characteristic roots and percentage of the variance explained have already been presented and discussed in the study by Andevski & Arsenijević (2012). The factors were called: *Low expressed leadership characteristics*, *Expressed leadership characteristics with a dominant desire for power*, *Tendency of respondents to be led by someone else* and *Self-assessment of oneself as a leader* (Andevski, Arsenijević, 2012: 38–39).

3.1.2. Factor Analysis for the Scale of Pedagogical Competences

Tree factors of pedagogic characteristics were extracted (henceforth: PC factors), which jointly explained 36% of the total variance (Table 1). Such a solution was chosen because it is the most interpretable.

Table 1. Characteristic roots and percentage of the variance explained

	Prior to rotation			After rotation
	Characteristic root	Percentage of variance	Cumulative percentage	Characteristic root
1	6.098	24.393	24.393	5.621
2	1.471	5.885	30.278	3.829
3	1.422	5.686	35.964	2.602

Table 2. Excerpt from the matrix of structure of the first Promax factor

Question	R 1
Q5	.716
Q4	.703
Q22	.653
Q24	.630
Q6	.619
Q2	.606

The first Promax factor gathered the items related to good interpersonal relations as a precondition for succesful work in school and was called: *Good interpersonal relations and familiarity with pedagogical principles*.

Table 3. Excerpt from the matrix of structure of the second Promax factor

Question	R 2
Q25	.740
Q13	.685
Q19	.672
Q18	.607
Q20	.481
Q24	.440

The second Promax factor gathered the items related to the importance of good organization of educational activities and institution and was called: *Good organization of institution and educational process*.

Table 4. Excerpt from the matrix of structure of the third Promax factor

Question	R 3
Q7	.708
Q3	.691
Q16	.499
Q12	.454
Q23	.422
Q17	.379

The third Promax factor was characterized by items related to the democratic way of leading the school as institution and was called: *Democratic leading of a school and educational process*.

Legend: Q2: *Confidence among associates is an important precondition for successful implementation of planned professional tasks in educational institutions.* Q3: *In schools, different views of particular professional problems should be tolerated and different approaches to their solving should be allowed.* Q4: *It is necessary for the employees in education to be honest and consistent and to keep the promises given.* Q5: *It is good when employees in education do not run away from problems and crises leaving the others to solve them.* Q6: *Communicability is an important characteristic for successful work in school.* Q7: *Democratic school leading gives better educational results than other*

forms of leading. Q12: It is not necessary for the employees in schools to be burdened by solving conflicts, when they will be solved anyway, sooner or later. Q13: It is important to recognize the needs of employees in education and apply appropriate forms of motivation for their more effective work. Q16: It is necessary for employees in school to be familiar with the curriculum as well as didactic-methodical principles of their achievement in detail. Q17: It is necessary for the employees to be entirely included in each introduction of innovations in educational process of their school. Q18: School will acquire its programme more successfully if employees have a clear vision of long-term pedagogical priorities of school. Q19: For school's efficient activity, it is important for employees to rapidly acquire and transfer all relevant professional information. Q20: For good results, it is necessary to constantly eliminate all the obstacles in their professional work in the educational institution and create more appropriate conditions for work. Q22: Employees in school should understand the sense and importance of planning and programming and know how to apply it in their work. Q23: It is important for employees to accept pedagogical principles and to know how to organize the educational process according to them. Q24: It is important for employees in school to understand the rules of interpersonal relations and be familiar with the mechanism by which a collective functions. Q25: Employees should know manners and procedures for the evaluation of the achievements of their work and the achievement of objective control of their work.

3.2. The Respondents' Average Scores on Factors

The following text presents the average value of summarized scores on the LC and PC factors, expressed with arithmetic mean and standard deviation. For each factor, six questions that best define it have been selected, so that the maximum possible sum score on each factor is 30 points.

In the first LC factor, on the lack of leadership characteristics, the respondents scored 11.8 points (st.dev.: 4.2), which means that they did not recognize the significantly pronounced lack of leadership potentials in themselves. In the second factor, about the distinctive leadership characteristics with dominant will for power, the respondents on average scored 15.6 points (st.dev.: 3.2), which means that this form of leadership potential was moderately expressed. The factor that indicates the respondents' tendency to be led by someone else was also moderately expressed: the respondents obtained 13 points on average (st.dev.: 3.85). In the factor indicating self-assessment as the leader, the respondents obtained the highest score, 22.2 on average (st.dev.: 2.3), which means that they perceived themselves as good leaders.

In the first PC factor about good interpersonal relations, the respondents obtained 28.3 points (st.dev.: 3.03), which means that this was the most important pedagogical characteristic to them. On the second factor about good organization of educational institution, the respondents scored 27.7 points on average (st.dev.: 2.4), which means that this pedagogical characteristic was also very important to them. On the third factor, called *Democratic leading of a school and educational process*, the respondents obtained 24.4 points on average (st.dev.: 2.9), meaning that this pedagogical characteristics was also important to them, but somewhat less than the previous two.

3.3. Correlation of Leadership and Pedagogical Characteristics

The correlation between leadership self-assessment and pedagogical dimensions was firstly verified by Pearson's coefficient of linear correlation.

The forth LC factor, *Self-assessment of oneself as a leader*, statistically correlates with the first PC factor, *Good interpersonal relations and familiarity with pedagogical principles* ($r=0.558$; $p=0.002$), as well as the third PC factor, *leading of a school and educational process* ($r=0.490$; $p=0.007$). These corelation coefficients have medium intensity and positive sign, which means that the more respondents evaluate themselves better as a leader, the more they are inclined to believe that interpersonal relations and good knowledge of pedagogical principles are the most important for good school organization and are more democratically oriented in running schools and the teaching process.

In addition to the mutual connection between the two variables by Pearson's coefficient of linear correlation, the connection was also tested by a series of Multiple Regression Analyses, where the criteria variables were the PC factors, while the set of predictors consisted of LC factors. The analysis determined by Multiple Regression Analysis determines a higher level of connection that provides the possibility of prediction.

1) Multiple regression analysis where the criteria variable is the First PC factor – Good interpersonal relations and familiarity with pedagogical principles

The regression model is statistically significant at the level of $p=0.006$. The coefficient of multiple correlation is $R=0.666$, and the set of predictors is explained with about 44% of variability of the variable system ($R^2=0.443$; $F=4.771$). Statistically significant beta coefficients have the first LC factor about low expressed leadership characteristics ($\beta=-0.371$; $p=0.028$) and the fourth factor indicating self-assessment as leader ($\beta=0.601$; $p=0.001$). This means that when a principal has less pronounced leadership qualities, he/she has a less expressed belief that good interpersonal relations and familiarity with pedagogical principles are essen-

tial pedagogical features. As opposed to that, the more they estimate themselves to have leadership characteristics, the more prominent is their belief that good interpersonal relations and good knowledge of pedagogical principles are essential pedagogical features.

2) Multiple regression analysis where the criteria variable is the Second PC factor – Good organization of institution and educational process

The regression model is not statistically significant ($p=0.159$), the coefficient of multiple correlation is $R=0.482$.

3) Multiple regression analysis where the criteria variable is the Third PC factor – Democratic leading of a school and educational process

The regression model is not statistically significant ($p=0.103$), the coefficient of multiple correlation is $R=0.516$.

4. Discussion

The results of the participants' scores on LC factors indicate that most of them have leadership characteristics. That can be critically interpreted in the light of the social desirability bias, nevertheless, the possibility that the respondents gave socially desirable answers indicates that they properly evaluated the importance of leadership. However, since the respondents are employed in managerial positions, this possibility is small, and the presence of their leadership qualities is not a surprise. An encouraging result is, however, that the less evaluated factor was leadership with dominant will for power, which represents a more degenerative function of guiding than constructive and democratic.

The results of the participants' scores on PC factors reveal the managerial as well as pedagogical views of the respondents. They indicate that principals in Serbia are not elected (among other criteria) based on the education for their job – education in management. Their attitudes are rather intuitive, not attitudes built through an adequate education for the post of principal. In the management theory it is known that principals spend 80% of working time communicating, achieving and maintaining interpersonal relations, so it is clear why the respondents value them so much. However, if these principals were elected for their post based on an adequate education, they would value the good organization of the educational institution and process, as well as democratic school leadership.

It is indicative that PC factors have organizational connotation as well. Interpersonal relations are a very important factor for creating organizational culture, they reflect climate in the organization and represent a leadership pillar. A good leader

creates good interpersonal relations, as a basis for employees' commitment to the organization's goals and their work enthusiasm, organizational learning and development. Organization of the educational institution and process, as well as democratic school management, are closely associated with leadership. Good organization and a democratic climate are basic preconditions for organizational development, creating a learning organization and entrepreneurial educational institution. Therefore, the results of factors analysis and in particular the respondents' average scores in PC factors indicate the inseparability of pedagogical work and leadership.

The fact that principals recognize leadership in pedagogical features shows that they assess leadership as an essential pedagogical feature, not only as an essential managerial feature, which is proven by the statistical correlation of leadership and pedagogical features.

The connection between pedagogical and leadership features also yielded interesting results. Although Pearson's correlation coefficient shows a connection between good interpersonal relations and democratic school management with leadership, the multiple regression analysis shows a connection between leadership and good interpersonal relations, but not with democratic school management.

The results of both analyses, however, have a strong logic and are built upon knowledge in the management theory. Namely, it is known that good interpersonal relations are the foundation of quality leadership. Leadership is a meaningfully social discipline, and building good interpersonal relations within a team creates conditions for quality guidance. It is, therefore, logical that the connection is statistically proved, and that it can be claimed that a good leader will highly value good interpersonal relations, and a person who has no leadership traits will not do so.

However, leaders often take several management styles. Although only democratic management can give long-term results, leaders in certain situations must take roles that gravitate towards autocracy. Therefore, although Pearson's correlation coefficient shows that there is a connection, multiple regression analysis shows that it cannot be claimed with certainty that anyone who highly values democratic management has leadership qualities. Still, it must not be ignored that democratic relations give better results in systems with good organization and members' financial security, which in the undeveloped and financially unstable Serbian education is not the case. Finally, democratic orientation is a value built in long-time learning or experience. Unlike it, mutual dependence of interpersonal relations and leadership is more tangible, perceptive. This is confirmed by the respondents' scores on PC factors, according to which the most important pedagogical feature is good interpersonal relations, followed by good organization of the school, and finally (but not negligible) democratic school management. Thus, it is clear why the connection with

democratic leadership was not manifested through the multiple regression analysis in the sample of Serbian principals, low financial security and system going through reforms, principals who are not elected based on education for management (except the recent system of their licensing through professional training).

5. Conclusion

This study is primarily based on a connection between leadership and pedagogical features. In essence, both concepts have the same personality task-development. Leadership through constant striving towards constructive improvement of leaders, employees, organization and environment, has much in common with the goal of pedagogy and education, for which the development, construction and shaping of personality is the primary task. However, the mystery behind this study was: is this connection present in practice, too, between school principals? School leaders more than ever feel in the crucible between two different and contradictory rationalities: educational and economic. On the one hand, principals must have leadership competences besides pedagogical ones, hence, they can feel the connection between them; on the other hand, they must constantly reconcile economic and pedagogical requirements, so they can testify about their contradiction.

Therefore, the task and the biggest contribution of this research to the science of education was establishing the connection between leadership and pedagogical features in a sample of principals, which was proved several times in this paper and which dominantly connects interpersonal relations and leadership qualities. A secondary contribution is finding that the respondents believed that they had leadership qualities and that they valued the most interpersonal relations like pedagogical features, which indirectly indicates the selection of principals in Serbia – they do not seem to be chosen based on adequate education, but they possess more intuitive than scientific, established knowledge in the field of leadership. The results should be signposts for improvement and mastering leadership skills, for the support to management in theory and practice.

These results are similar to the ones from the research by Andrevski and Arsenijevic (2012), which indicated that there was a significant connection between leadership qualities and personality traits of employees in Serbian education. The results are closely linked to the study of Méndez-Morse (1992), which stated that successful leaders are characterized by having a vision, believing that schools are for student learning, valuing human resources, communicating and listening well, being proactive, and being a risk-taker.

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Language and Adaptation Barriers of Polish 1.5 Generation in Ireland

Abstract

The decision about emigration for economic reasons, including emigration to Ireland, after Poland joining the European Union, has been the object of research interests of a number of fields of knowledge. Sometimes, a tempting vision of improving Polish people's own economic status makes them decide to leave the homeland without any knowledge about the culture of the adopted society. The article is focused on the analysis of the language competence of Polish grammar school students in Ireland. There are presented weaknesses and strategies for surviving in the new environment without language ability and its influence on adaptation to school and life in Ireland. The article is supported by the research conducted in Irish grammar schools and Polish weekend schools in Ireland (2010–2011).

Keywords: *emigration to Ireland, adaptation, language competence, Ireland*

Introduction

Polish membership of the EU has led, among other things, to the massive emigration of Poles to the countries such as Ireland or Great Britain as a result of opening up of new earning possibilities there. The hallmark of this emigration is settling in, especially in Ireland, by whole Polish families (Grabowska-Lusińska, 2007, pp. 6–7). Therefore, apart from the influx of manpower, a group of Polish children at the school age has appeared, obliged to fulfil the school duty in this country. These children have been labelled as 1.5 generation. They are children born in the country of their parents, brought up there and having lived there for so

long that they had mastered the basics of their native language as well as cultural models, and, simultaneously, emigrating together with their parents to another country so early that they are able to master the new language relatively easily, which determines the integration with the adopted country's society. Therefore, 1.5 generation immigrants are young people in the period of adolescence, who are usually bicultural and bilingual, moving efficiently between two different, by definition, environments, and who can constitute an almost perfect model of "citizens of the world" (Kasinitz).

Methodology

The emigration of Polish youth in the years 2004–2009 was quite often connected with the spontaneity of decisions made, and, in the best case, a mere linguistic and cultural preparation, mainly resulting from the lack of time for the preparation for the existing conditions in the new country. This has represented a strong encouragement to undertake a great number of studies, involving a broadly understood subject matter of 1.5 generation's life settled in Ireland. This article, as a result of this kind of studies, constitutes an attempt to present the image of Polish grammar school student living in Ireland, learning in so called Secondary school (1st stage – Junior Cycle). The author focuses on the analysis of Polish students' language difficulties in Ireland and the problems of adaptation to the new environment. Those young people came to Ireland during the period of the most massive wave of emigration from Poland. Ordinarily, they did not know the language of the adopted country, its history, traditions or customs. Accordingly, their adaptation was usually impeded, mostly by the basic barrier – the language one.

The information included in the article was obtained by doing quality ethnographic research, together with the group interview technique among Polish grammar school students learning in schools in the Republic of Ireland.

Results

The essence of communication

Each world has got its own mystery and the access to it is only by getting to know the language. Without it, this world is impenetrable and inconceivable, even if we spend all the years inside (Kapuściński 2008, p. 28).

Communication is one of the most important aspects of human life. It is a process which connects people and helps perform a task, build relationships or achieve aims. Communication is indispensable for understanding, creating, comprehending and maintaining culture, for handing down from one generation to another. The most essential aspect of communication is language. The language constitutes the main element of cultural identity. It is a key to understanding culture, the world of human values (Zajączkowska 2003, pp.3–5). Inside and via the language culture is created, and all the possible interpretations of phenomena and human behaviour that surround us are expressed. The language, although it belongs to the living culture, is at the same time a crucial part of many artifacts and an indispensable element of social culture. The language system is a basic tool which enables people to think and express their views (Grucza 1992, p.9). Understanding culture without the command of the language, which is the culture's constituent element, is very imperfect, if not impossible. What is more, the structure of the language consists of elements such as norms, hierarchy and social relations as well as issues connected with gender. That is why, each language describes reality in a different way and in order to understand the language the cultural context is essential. Similarly, in the language there are a number of terms which determine the way of comprehending social reality (Sapir, 1978, p.88). Therefore, getting to know culture is connected with learning the language and the other way round. The world of communication embraces also non-verbal elements, apart from the verbal ones. They provide feedback from the hearer to the speaker and aid interaction by indicating that the participants should have their say, listen or interrupt. The differences between cultures concerning the patterns of non-verbal behaviour are important sources of difficulties in international communication. Gestures and their meanings are diverse in many cultures and can be interpreted in different ways.

The statement that the language is the most important cultural tool as well as the way of communication between people is irrefutable. It is also the main medium of cultural communication. During the process of learning an individual absorbs the dictionary he or she hears from "the outside", i.e., from the surrounding world. Later on, a person creates his or her own, internal dictionary, which is adapted to his or her own way of thinking and behaviour. Therefore, the command of the language enables an individual not only to identify with society, but also to participate in the surrounding culture. During exchanging information in the process of communication an individual is able to modify his or her own cultural values, as well as influence and create new ones (Wygotski 2005, pp. 32–35).

The command of language and the adaptation to education and living conditions in Ireland

In the case of hasty decisions on emigration, inadequate linguistic preparation or lack of it, and finally the unfamiliarity with the culture and the cultural context of the language, as in the case of emigrants to Ireland, difficulties with adaptation come out. Even the satisfactory command of the language and ability to communicate on a basic level do not protect from the linguistic barrier that makes it impossible to fully adapt to the new environment. This is the first and the main difficulty encountered by Polish youth in Ireland. The respondent's utterances show that: *"At the beginning, it was difficult with the language. I had learnt English in Poland for 7 years, from primary school on, but it was something different. Different pronunciation and everything (...) When I didn't know the English words, when I wanted to talk to somebody or ask a question I thought to myself: 'What am I doing here? I shouldn't be here.' And I still think that I won't stay in Ireland forever. First of all because I don't feel this is my place"* (Interview 14). Another person said: *"Even though I had studied in Poland I had a problem with the language when I came here, most often in shops or other public places. At school I'm often unable to talk. I don't know what to tell my teacher..."* (Interview 14). The student's utterances point out the connection between the command of language of the adopted country and the feeling of belonging to the new Irish social group. Incapacity to communicate with the environment causes frustration as well as a desire to go back to the homeland due to the lack of the sense of belonging to the group and understanding the phenomena surrounding the individual. The inability to name their needs causes the situation where the individual is powerless, because the unfamiliarity with the language makes it impossible for him or her to have contact with the peers as well as to learn the Irish way of thinking and feeling emotions. The command of the language which is spoken among a given society not only gives a chance for expanding the knowledge about this society, but also it is an instrument which activates the ability to go into detail when it comes to their way of thinking and feeling emotions. When communicating with the members of a given society the individual is able to get to know its system of values as well as realise the differences and similarities between a given culture and his or her own culture. The better we get to know the new culture and the wider knowledge of this culture we have, the more open we are to maintain a dialogue and participate actively. The statements of Polish youth point out this fact: *"...Because if you don't know the language well there is always a difference. At school I talk to these and those, sometimes, during the breaks, also with the Irish, but not every day..."* (Interview 4). It follows that only the command of the language makes it possible to initiate contacts with Others/

Foreigners, to overcome barriers, as well as to initiate a mutual interaction, which affects further education. While striving for getting to know the culture, which is originally foreign, the danger of being a foreigner gradually disappears. Together with the improvement of relations with the outside world, the understanding and tolerance towards cultural differences as well as the tolerance towards members of the same society are getting greater and greater. However, it is essential that learning a language is not only acquiring its vocabulary and linguistic structures, but also facing this language, i.e., facing the culture of the society using this language. This is a stage which is a link between the first encounter with the language, i.e., the picture developed in the process of socialisation, and the final stage, i.e., the actual contact between the individual and the other culture (Burszta, 2010, p.19). What is familiar does not raise fear and makes it possible to explore the new reality more fully.

Unfamiliarity with the basics of communication in a given language is the main factor of stress for young people moving to Irish schools. The inability to express oneself is very frustrating as well as resulting in low self-esteem. “(...) *sometimes I want to say something in English, but I’m so stressed out that I cannot do it well because I know more words in Polish and it is different*” (Interview 2). It causes the feeling of being helpless because of the lack of the ability to express your own thoughts or needs due to the poor command of the language, poor vocabulary or articulation. “...*I get irritated when I want to tell somebody something and I don’t know how, so I try to do it in different ways, so that somebody can guess. So that somebody can guess what I try to say.*” “*This is hard when you have to...when you want to say something and... (...) Or when you want to write something in a nice way, but you don’t know enough words to do it well*” (Interview 5). These and other similar utterances show that Polish youth do not feel comfortable while communicating in a foreign language, whose command is so insufficient that sending a very simple message requires long lasting translation with the use of a dictionary. This kind of situation often oversimplifies relations between peers because it is limited to simple utterances with no possibility of exchanging views or sharing opinions and experiences. Only a good command of the language makes it possible to adapt to the new circumstances (...) *When you already know English it is not so hard. I can make myself understood and I already feel more confident. When I couldn’t make myself understood I wanted to go back home because I did not feel good here*” (Interview 8). As the utterance shows, unfamiliarity with the language is often the main cause of the desire to go back to the homeland where you are understood and able to exchange views with people from the nearest school environment. It has to be mentioned that the period of early adolescence is a period when human

development is shaped mainly by interpersonal relations with peers. In this period the desire to be accepted is more important than ever before. That is why, the group of peers becomes one of the most crucial factors of socialisation. After the period of strong educational influence of the family home, teenagers' dependence on their parents decreases and the dominant position is taken by the peer group, who, at this time, determines personal safety, represents similar attitudes, values and desires (Turner&Helms, 1999, p. 366). Peers are the main source of the teenager's high self-esteem and his or her confidence in the world in this period of life. However, when there is no possibility of interacting with peers because of unfamiliarity with the language, the sense of belonging, safety, and acceptance of the group is disturbed. The command of language makes it more possible to express oneself and thanks to this a young person is more successful.

A very frequent phenomenon which could be noticed among the respondents was a "vicious circle", when the teenagers with a poor command of the language felt discomfort and a barrier to communication, which made it impossible to get to know the language and the cultural code connected with it, and thus break down the language barrier that was getting bigger and bigger. Those students often thought that they could not say anything valuable in the group and preferred saying nothing to being ridiculed. (...) *To say something, for example in a classroom or to them, no way! I won't say anything because I'm afraid that they will laugh, or simply say "I don't care what you are saying" or something like that*" (Interview 3). The result of this was only a slight improvement of linguistic skills and, accordingly, alienation, a lack of integration as well as withdrawal from the group.

The Polish youth pointed out the problem of inadequate linguistic preparation in Poland as the reason for their language problems. "(...) *studying English in Poland is learning the same things every year, moreover it doesn't prepare for having conversation, it doesn't prepare for it at all*" (Interview 1). A lot of them had learned English for a few years and they claimed they were helpless when it came to using the skills acquired at school in practice. *"I like it, because here there is an easier for one year and a half you are able to make yourself understood, and in Poland... I learned English for five years and had extra lessons, and when I came here I knew nothing (...) but the thing is that Irish people in fact have a different accent and it is difficult to understand them even if you learn English (...). But what I mean is that I couldn't say anything at all"* (Interview 3). Polish students in Ireland quite often consider foreign language teaching methods in Poland as ineffective. Their experience shows that even many-year-long language learning, very often marked positively by Polish teachers, did not teach the skill to communicate in this language, which considerably obstructs adaptation to the new foreign environment. This

might be a clue for foreign language teachers about changing their past language teaching method, which develops communication competence and conversational techniques in the foreign language insufficiently. On the other hand, in teachers' defence, it ought to be mentioned that the Irish, due to their native Irish language peculiarity, articulate and stress a lot of words in a different way. That is why, at the beginning of the stay, it is hard to understand their native language even with a good command of English. Only getting used to and listening to the language make it possible to communicate with the Irish community. The Irish, living in the areas where the Irish language is still used, significantly deform English, since the dominant sound in their articulation is a /ʃ/ sound, which deforms words uttered and the language becomes incomprehensible for the foreigner, such as the word *water* is pronounced /'wɔ:tə/ in England and /'wɔ: ʃə/ in Ireland. Apart from this, a number of words in this country are of Irish origin and are different from those we learn at schools or the Americans and the British use. The popular word *pen* could be an example. In Ireland this word is replaced by the Irish word *bajrow*. Other characteristic Irish words are *bold* – which means *rude* whereas in English *bold* means *brave*, *courageous*, or *craig* which stands for *a good fun*, as well as *dingen* – very good (from Gaelic *daingean* – decent) or *gas* – happy.

Comprehending an Irish person might be very difficult especially at the beginning, however, according to the respondents, the argument against foreign language learning in Poland is that it is not effective and that they are not able to say a few sentences, for instance about themselves "(...) *I didn't understand anybody, because in Poland I learned English for two years and I learned nothing*" (Interview 4).

Due to the lack of or poor command of language "(...) *I'd never learned English in Poland before I came here, so when I came I knew nothing at all*" (Interview 4), teenagers try to cope with the new situation in different ways. The first, quite popular pattern of behaviour, is withdrawing from Polish-Irish integration and making friends with the representative of the native country. "(...) *Oh Jesus! I was bawling, I didn't understand anything, when somebody was talking to me I was nodding only and I met her (she points to her friend) and that's all who I was talking to*" (Interview 4). At schools in which there are few Polish peers young people are, in a sense, forced to learn the language because they do not have contact with the native language, thanks to which they make new international acquaintances quite quickly. "(...) *because two years ago, when I was the only Polish girl in the whole school, it was a nightmare. Now it's easier because the language and all of it is totally different. I've got girlfriends and I can talk to them*" (Interview 1). As a matter of fact, thanks to, in a sense, exceptional and special circumstances, learning the language progresses very quickly, as the respondents say: "*You will learn English*

more quickly when you don't have a choice, then you have to learn it. (...) That's why I learned English quickly. What's more, my brother had an Irish girlfriend, so she was helping me at home. There were a lot of people at school who helped me, too, so actually I learned English quickly. Yes, I could and understood, but I was afraid of saying something. Only when this problem was over, after half a year, I started to talk but I had been afraid of saying something wrong before (Interview 5). There are schools with a great number of Poles, such as Galway Community College, in which there are: *"(...) about 30% of Polish youth, where the dominant language, not only during the breaks but also during the lessons, is Polish. There are too many Poles and too much Polish and too little English because of which they suffer. Students from Lithuania, Latvia or African countries are doing better than Polish ones because they have to speak English and there is one or two people from their countries and they get on with other students (...)" (Interview 20 – Teacher).* The school's students have the same opinion: *"(...) Unfortunately, there are too many Poles. This is my opinion, because we study, I mean we don't study well. I can say something but it gets on my nerves when we are speaking Polish all the time. We are three girls in the class. (...) But for example a year ago there was nobody. (...) A lot of new Polish students came this year, really. Fifteen people, yeah. But earlier there were very few of them. Some students left school, but still, it gets on my nerves. Polish and Polish all the time. Everyone together, during the breaks, all the time. There are the stairs, everyone sits there, twenty people, everyone speaks Polish. The Irish and the Polish separately. (...) we are simply separated into groups. The Poles sit together with the Poles and the Irish with the Irish (Interview 15).* A large group of students from the native country hinders young people's adaptation to a new environment and, thereby, acquiring linguistic and cultural knowledge. When most of the school time, which is the basic environment of language study, norms and rules in the new society, a student stays with the representatives of his or her own culture, he or she has no possibility of learning either the language or the patterns of behaviour of the new culture. They do not maintain contact with Irish peers, which is implied by the utterance above. Both groups separate from each other, only reinforcing stereotypes and prejudice against each other. In the circumstances, Irish teachers feel helpless and point out many school problems, which are the result of the isolation *"some of them have already been here for two or three years, they don't know English, come to the class, speak Polish and don't want to or pretend that they don't understand anything. There is a problem, because they don't pass tests (...) and we cannot do much"* (Interview 20 – Teacher).

Therefore, the lack of compatriots at school is a hindrance on the one hand, since during the first contact there is nobody who can help understand the basic

utterance as well as support a newcomer, but on the other hand, under the circumstances, immigrants learn the language more quickly and integrate with their classmates. Thanks to this they are a part of the class and they are not excluded. However, those who stay in their own cultural and linguistic society are very often isolated from the group. Teachers also treat the students who make progress in learning the language better. The lack of the command of the language makes it impossible to learn individual subjects as well as to work with this sort of student, who also does not have any motivation to learn. It causes discouragement and, as a result, paying less attention to this student. "(...) *I have Polish friends who don't want to learn English, they are always together, of course, they don't talk to the Irish, and teachers don't tell them to learn as much, because they know that they don't know English and simply they don't have to take tests or other things...*" (Interview 12).

From the respondents' accounts, it follows that the command of the language changed their position in the class and their relations with peers. "(...) *well, generally I had the same situation, in the beginning when my English wasn't so good, they could gossip, because I didn't understand, but later when I was getting to know English a little bit I understood and they stopped*" (Interview 4).

Using English names and terms in Polish utterances is indicative of young people's adaptation to the English language. Language and its context are indispensable to learn and understand the culture, as well as to adapt to the new environment. Unfamiliarity with the basics of communication in a given language prevents getting to know or learning this culture. The research shows that teenagers (under the favourable conditions mentioned) acquire skills to communicate in English very quickly, using phrases used by their Irish peers. The example could be the word "yep" repeated many times in Polish interviews.

Conclusion

Under the circumstances when the immigrants change the environment of their life, they are obliged to learn the language, adapt to new traditions, customs, or patterns of behaviour, which makes it possible to build lasting interpersonal relations. The lack of adaptation leads to alienation and anomie. The research conducted on Polish 1.5 generation in Ireland shows that the teenagers with school and family support, and who are willing and open to the new, acquire linguistic knowledge quickly, but only thanks to interpersonal contacts with the representatives of the adopted country. Those who are isolated from Irish peers generally learn the language more slowly and do not adapt to the new culture, among which they

live, so easily. A group of researchers from Trinity College in Dublin, conducting research on intercultural relations among children in Ireland, came to a similar conclusion. When it comes to the interviews with children and teenagers (not only from Poland), it follows that the isolation of immigrants due to unfamiliarity with the language considerably impoverishes their contacts with peers as well as making progress in studying in Irish school. Irish children also contribute to the isolation of those who they cannot communicate with since conversation with them is boring and unproductive, because "you have to explain a lot to them and they still do not understand" (Gilligan 2011, p.68).

The important conclusion for Poles from the research carried out by the author is pointing to the ineffective language teaching methods in Polish schools, which, in the students' opinion based on their experience, do not prepare for communication in English speaking countries. Thus, the linguistic knowledge acquired in Poland does not refer to using the language in a new environment. Hence, it is necessary to take this into account when it comes to education in Polish schools.

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Interview 1 – School Meán Scoil Mhuire

Interview 2 – Polish weekend school in Dublin

Interview 3 and 4 – Polish weekend school in Cork

Interview 5 and 8 – Polish weekend school in Waterford

Interview 12, 13 and 14 – Calasactius College

Interview 15 – Galway Community College

Interview 20 – Teacher from Galway Community College

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Field Qualifications: A Framework Suggestion

Abstract

Within the last decade the most significant development of the European Union in the education field has been the Bologna Process. The reference point of the Process is the European Qualifications Framework at the international level, and national qualifications framework at the national level. The Bologna term of “sector qualifications” is dealt with in two different meanings. The first is related to the hierarchy of the field of education from programme to broad field in the UNESCO approach. The second is sector standards determined according to the needs of economic sectors. This paper is devoted to developing the field architecture of the scientific family of program qualifications.

In this work, while the field qualifications have been developed in Turkey, international standard classifications of education, occupations and industries were taken into account; and moreover, qualifications were developed from the vertically and horizontally hierarchical point of view, and chronological perspective. In this work, it is suggested that EQF-LLL and NQF can also be applied to all types of field qualifications.

Keywords: *Bologna Process, narrow field qualifications, field qualifications, sector qualifications, knowledge, skills, competences.*

Introduction

Since 2001 Turkey has participated in the Bologna Process, which is aimed at increasing quality, transparency and recognition by establishing the European Higher Education Area. Turkey follows the coordinated action lines between the European Higher Education Area (AHEA) and European Research Area (ERA),

puts intensive efforts for its graduates to be able to work in Europe (or elsewhere) by organizing meetings to raise awareness, and by making secondary regulations in parallel with the ones made by the EU bodies (CEC, 2007; CEUR, 1999). Besides, new programs to train teaching and research faculty members nationally and internationally are being developed, and they should be seen as positive and important steps to reach this goal (Colardyn & Bjornavold, 2004).

In addition to 47 member countries in the Bologna Process, any other developed and developing countries outside the European Higher Education Area have developed a new form called “Bologna Policy Forum” to show their interest in the Bologna Process. For this reason we expect that this study will contribute to the literature as a new reference following the Turkish experience. The field framework developed here has two dimensions: (i) a methodology indicating how to develop field qualifications framework, and (ii) a framework which can be applied directly to any basic education field.

Method

There are two different overarching frameworks in terms of qualifications (Bjørnåvold & Coles, 2008). The overarching framework of qualifications of the European Higher Education Area (EHEA Framework or QF-EHEA) was adopted by the Ministers in May 2005. This framework for qualifications is adopted in the EHEA. This overarching framework comprises three cycles, generic descriptors for each cycle based on learning outcomes and competences, and credit ranges in the first and second cycles (Adam, 2006; Bergan, 2007). The European Qualifications Framework for Lifelong Learning (EQF-LLL) was developed by the European Commission in 2008 and is therefore formally adopted by the European Union procedures (EC, 2008). All references to vertical and hierarchical structures made here refer directly these overarching frameworks. Validation of non-formal and informal education is beyond this paper. Only formal education learning and procedures are used as criteria. However, the omission of informal and non-formal learning does not make a deficiency in terms of developing a framework structure. The processes of the alternative learning to the structured (formal) one make room for the dynamics of procedures and systems. Many examples could be seen on this track. For instance, the problem of ageing population has created many innovative mechanisms to cope with shortfalls of and outdated qualifications. Adult education is one of the most popular programs in terms of lifelong learning (Bilir, 2004).

Nevertheless, not only Turkey, but the EU countries also have no sector frameworks. Neither EQF nor EHEA have developed a sector or field qualifications framework yet. Therefore we consider the International Standard Classification of Education (ISCED) as an education classification reference. ISCED is the only classification of education programs across the world. The counterpart of ISCED is FOET in the EU. Actually, FOET is an adaptation of ISCED for the needs and relatively different education structures of the EU member countries. 22 two digit ISCED narrow fields have been studied by the committees established at the Council of Turkish Higher Education.

In this work, while the field qualifications have been developed for Turkey, besides ISCED, International Standard Classification of Occupations (ISCO) (ILO, 2010; TSI, 2008b) and International Standard Industrial Classification (ISIC) (TSI, 2008a; UN, 2008) have been taken into account as well; and moreover, by taking the eight-level descriptors of the European Qualifications Framework for Lifelong Learning (EU, 2008; EU, 2009), qualifications have been developed from the vertically and horizontally hierarchical point of view, and chronological perspective.

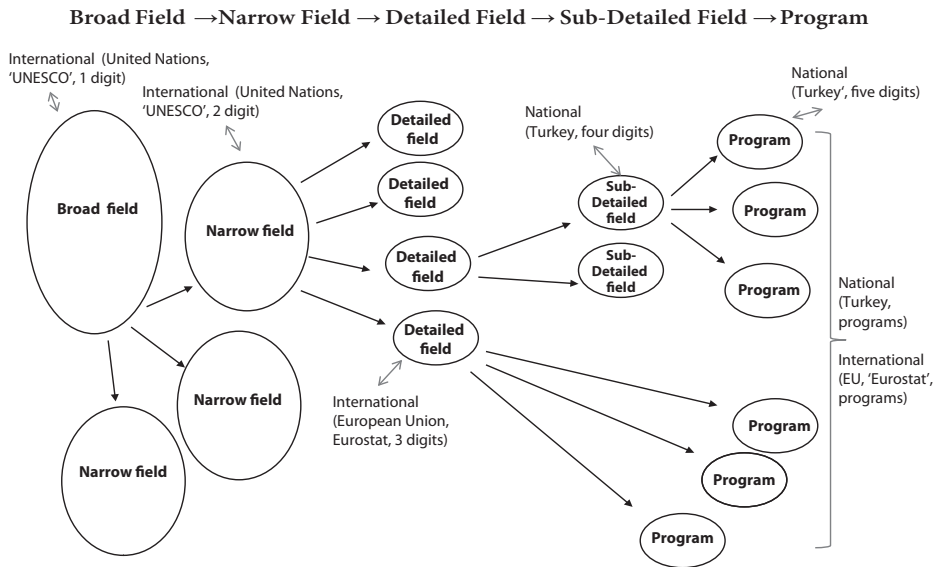
In the Bologna conceptualization there is a hierarchy starting with course learning outcomes, continuing with program learning outcomes and sector qualifications framework, and ending with national qualifications framework and European qualifications framework. In addition, there is another hierarchy in terms of a family of fields of education based on the UNESCO classification. The starting point launches with broad fields and continues with narrow fields, detailed fields and programs respectively. Number indicators for broad fields are one-digit, for narrow fields two-digit and for detailed fields three-digit. This hierarchy is developed by Eurostat. There is a need to add another field situated between a detailed field and program and indicated by a four-digit number. We call it a “sub-detailed field”. At the bottom of the hierarchy, the fields of education programs are located and indicated with five-digit numbers. However, the category of a “sub-detailed field” is not as common as others, so only the remaining four categories have been considered while developing horizontal and vertical relationships. Transparency and comparison of reporting via this classification would be easier and more efficient in both national and international contexts.

We handle the Bologna term of “sector qualifications” in two different contexts. The first standards of qualifications come from specific economic sectors and are mostly defined by public, private or mixed associations. In the daily-life sector related qualifications are vitally important. The second standards of qualifications should be related to the hierarchy of the program and the vertical and horizontal relationships with the sub-detailed, detailed, narrow and broad fields respectively.

In this paper we develop the second context of sector qualifications, i.e. field qualifications.

Following the UNESCO and Eurostat, we categorize educational fields into five hierarchical structures: (i) broad field, (ii) narrow field, (iii) detailed field, (iv) sub-detailed field and (v) program. From top to bottom, every level encompasses and covers the lower level which is in its domain; from bottom to top every level is in the domain of an upper level (Figure 1).

Figure1. Hierarchy of Fields of Education



With the starting of the year 2011, all higher education institutions were asked to adopt both national qualifications and sectoral qualifications frameworks (IHEA, 2010; TCHE, 2010). The deadline for this action was the end of 2012. As we observed, professors and other administrative staff are reluctant to adopt the framework because of new duties of establishing mechanisms. Transparency, accountability, efficiency and effectiveness are the challenges at Turkish universities.

Discussion and Results

In this work, *sector (field-based) higher education qualifications framework* through *Managerial, Administrative and Law Sciences*, based on the current EQF-LLL and TYYÇ (Turkish Higher Education Qualifications Framework) has been developed. In order to define the field-based qualifications, the Council of Higher Education had set up sub-committees constituted by the related deans, and had appointed Bologna experts in each committee. In June 2010, all the field based qualifications committees had a workshop to share their frameworks, and an editorial committee to edit these works was formed mostly by the Bologna experts. The editorial committee, in coordination with the sub-committees, will finalize the field based qualifications framework. When developing the field-based qualifications framework in this work, the classifications by ISCED, ISCO and ISIC were taken into consideration; moreover, considering the eight-level descriptors in EQF-LLL, qualifications were arranged vertically and horizontally from the hierarchical and chronological perspectives (JQIIG, 2004; Keating 2008). On 7 December of 2010, all the field-based qualifications were submitted to the General Council of the Council of Higher Education. Turkish higher education authority approved and declared the field-based qualifications on 13 January 2011. Nevertheless, besides the complexity of the subject, the relatively low interest levels of some committees produced low level outputs. We think that our framework tabled below would be a reference method for developing and updating current field-based qualifications.

EQF-LLL describes qualifications at eight levels. While first four of them are related to pre-higher education, the remaining ones are in higher education. In this respect, the Bologna Process and EQF have a strict relationship. EQF, firstly, defines qualifications in terms of knowledge, skills and competences, then grounds them on learning outcomes (Burke, 1995; Gagné, 1984; Gallavara at al., 2008).

While developing field-based qualifications we applied European dimensions in a strict manner. Therefore, to define some basic terms is a necessity. “Qualification” means a formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards.

“National qualifications framework” means an instrument for the classification of qualifications according to a set of criteria for specified levels of learning achieved, which aims to integrate and coordinate national qualifications subsystems and improve the transparency, access, progression and quality of qualifications in relation to the labor market and civil society.

“Sector” means a grouping of professional activities on the basis of their main economic function, product, service or technology. “International sector organiza-

tion” means an association of national organizations, including, e.g., employers and professional bodies, which represents the interests of national sectors (EC, 2010).

Field qualifications in terms of the Bologna Process or field-based qualifications in terms of the ISCED terminology are conceptualized hierarchically and chronologically. We argue that this approach is very practical to be used to develop or define not only narrow or detailed qualifications, but also program qualifications (Tables 1, 2, 3 & 4).

Table 1. Narrow Field, Detailed Field and Program-Based Qualifications of the Short Cycle

Knowledge	Skills	Competences
1. Knowledge of facts principles, processes and general concepts related to <i>narrow field</i> .	1. Cognitive and practical skills required to fulfill tasks and to solve routine problems by selecting and applying basic tools, materials and information in the <i>narrow field</i> .	1. To work or study in the <i>narrow field</i> in a formal structure having limited autonomy, under direct supervision and control.
2. Awareness of borders concerning the <i>detailed field</i> .		2. To exercise self-management within the guidelines of work or study, to take responsibility in completing tasks, to adapt one's own behaviours to circumstances in solving problems, in the general frameworks concerning the <i>detailed field</i> .
3. Basic general and factual knowledge of the <i>detailed field</i> .	2. A range of cognitive and practical skills required to fulfill tasks, and to solve problems in the <i>detailed field</i> by selecting and applying the related basic methods, tools, materials and information.	
4. Comprehensive, specialized, factual and theoretical knowledge within any field of work or study (<i>program</i>); and awareness of the boundaries of this knowledge.	3. A range of comprehensive cognitive and practical skills to produce creative solutions to specific or/and abstract problems in any work or study field (<i>program</i>).	3. To exercise management and supervision in contexts of work or study activities where there is unpredictable change, review and develop the performance of self and others in a work or study field (<i>program</i>).

Table 2. Narrow Field, Detailed Field and Program-Based Qualifications of the First Cycle

Knowledge	Skills	Competences
1. Awareness of detailed fields, their borders in the <i>narrow field</i> .	1. Ability to make evaluations and analyses at basic level, being aware of basic methods, tools and inputs concerning the <i>narrow field</i> .	1. To supervise and control the routine work, and to take limited responsibility for evaluation and improvement of work or study activities in the <i>narrow field</i> .
2. Theoretical and factual knowledge of facts, principles, processes and general concepts of <i>detailed fields</i> under the narrow field.	2. Cognitive and practical skills required to generate solutions and solve problems concerning the basic methods, tools and inputs in the <i>detailed field</i> programs.	2. To manage complex technical or professional activities or projects in relation to <i>detailed field</i> .
3. Advanced knowledge of a field of work or study (<i>program</i>) from a critical understanding of theories and principles.	3. Advanced skills, demonstrating mastery and innovation to solve complicated and unpredictable problems in a specialized field of work or study (<i>program</i>).	3. To take responsibility for making decisions on a work or study (<i>program</i>) field for any unpredictable work or study context. 4. To take responsibility for managing professional development of individuals or groups concerning a work or study field (<i>program</i>).

Table 3. Narrow Field, Detailed Field and Program-Based Qualifications of the Second Cycle

Knowledge	Skills	Competences
<p>1. Theoretical and factual knowledge on basic facts, principles, processes and general concepts (<i>at the interface</i>) for their interrelations and relative situations in the <i>detailed field</i> of work or studies (programs).</p> <p>2. Highly specialized knowledge in a field of work or study (<i>program</i>) in the context of some original thinking and/or original research to be able to form the knowledge border of the program, and to show critical awareness on the issues of knowledge discussions at the interface of <i>detailed field programs</i>.</p>	<p>1. Cognitive and practical skills required to generate solutions and solve problems concerning the applied methods, tools and inputs in the <i>detailed field</i> programs in the general contexts, <i>taking their interrelations and relative situations (at the interface)</i> into consideration.</p> <p>2. In a field of work or study (<i>program</i>) specialized problem-solving skills, required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields.</p>	<p>1. To take responsibility for managing routine work, and on evaluation and improvement of work or study activities concerning the <i>narrow field</i>.</p> <p>2. To take responsibility for designing and managing professional development of individuals and groups concerning the <i>detailed field</i>.</p> <p>3. To manage and transform work and study environments that are complex, unpredictable and require new strategic approaches in a work or study field (<i>program</i>).</p> <p>4. To take responsibility and/or to review the strategic performance of teams in order to contribute to professional knowledge and practices in a work or study field (<i>program</i>).</p>

Table 4. Narrow Field, Detailed Field and Program-Based Qualifications of the Third Cycle

Knowledge	Skills	Competences
<p>1. Knowledge at the most advanced level in a <i>subject specific</i> work or study field (<i>program</i>) to extend or develop the borders of knowledge produced, in this framework to make it possible for advanced analysis and evaluation of interdisciplinary facts, principles, processes and concepts in other relevant <i>detailed fields</i>.</p> <p>2. Knowledge at the most advanced level in the borders of a work or study field (<i>program</i>) and advanced knowledge at the <i>interface between detailed fields</i>.</p>	<p>1. Skills to interrelate functional and relative positioning of production of <i>subject specific</i> original knowledge with other subjects of the program in a field of work or study (<i>program</i>).</p> <p>2. The most advanced and specialized skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to define and extend existing knowledge or practices in a <i>subject specific</i> work or study field (<i>program</i>).</p>	<p>1. To take responsibility for designing, managing and developing work and study activities concerning the <i>detailed field</i>.</p> <p>2. To manage and transform work and study environments that are complex, unpredictable and require new strategic approaches, in the <i>detailed field</i>.</p> <p>3. To take responsibility and/or to review the strategic performance of teams in order to contribute to professional knowledge and practices in the <i>detailed field</i>.</p> <p>4. To show skills and behaviors in order to develop and extend the borders of knowledge and practice (at the interface) concerning the other subjects in a work or study field (<i>program</i>).</p> <p>5. To demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research in a work or study field (<i>program</i>).</p>

Conclusion

While developing the field-based qualifications framework, the structures of all economic activities in education, which are specific to Turkey, were taken into account; and narrow field, detailed field and programs were defined. By doing this, we assumed that the creation of qualifications would be easier and more efficient. In the narrow field of *Managerial, Administrative and Law Sciences*, the sub-field was understood as Business Management and Public Administration Sciences, and the program as Management. One of the reasons for this is that the programs in management, administration and law education (and their employment sectors in daily life) are related to the management, operation and problem solving of human resources, capitals, and assets in the public, private and non-profit areas of society. The second reason is that in our country faculties of administration, management and law are closely related both in education and employment areas.

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University Students' Motivation and Impulse Buyer Behavior

Abstract

There are contradictive explanations in the literature on the impulse buying behavior. Some research shows that consumers view impulse buying normatively wrong, while other research reveals that consumers buy impulsively. The purpose of this study is to examine the motivations of impulse buying behavior and to investigate the relationship between each set of motivation and decisions which lead to university students' impulse buying behavior. Multiple regression analysis was used to determine the predictors of impulse buying behavior. The results show that hedonistic desires, perceived decision-making accuracy and perceived decision effort were the determinants of impulse buying. As a recommendation, business strategies targeting Malaysians in this university should be carried out by considering their potential motivations and university students should not over-rely on their impulsiveness traits as complimentary purchasing alternative.

Keywords: *motivation, impulse buyer behaviour, hedonistic desires, perceived decision-making accuracy, perceived decision effort, social needs, esteem needs*

Introduction

Although some studies show that normative evaluations reduce impulse purchasing behavior by moderating impulsive drives (Rook & Fisher, 1995), studies show that about 90 % of consumers make purchases on impulse occasionally (Welles, 1986) and 30 % to 50 % of all purchases made are by impulse (Bellenger, Robertson & Hirschman, 1978; Cobb & Hoyer, 1986; Han, Morgan & Kang-Park,

1991; Kollat & Willet, 1967). Therefore, it seems to be that there are some circumstances which overcome the moderation effect. In 2009, Kong showed that there is a growing trend demonstrating that shoppers are less loyal and more inclined to store-hop, despite the fact that economic recession is turning consumers into more demanding, price-sensitive and cautious spenders.

As developed below, the concepts of impulse buying behavior are even more complex than formerly discovered because customers may regard impulse buying as rational and reasonable in particular perspectives and situations. Ritzer (1999) has referred to shopping malls as “cathedrals of consumption,” which have considerable financial significance and also become a way of life – a consumer paradise to some (Dawn, 2009). Thus, the underlying factors which counter-act negative normative evaluations can drive impulse buying.

In a study on malls by English and French speaking Canadians in Montreal (Michon & Chebat, 2004), the French were found less likely than English shoppers to use the mall for activities other than purchasing products and services, although French shoppers did score more highly on hedonism, but without significant differences in the consumption between the two groups. For our research, we investigate what are the individual needs and wants which constitute the impulse tendency, specifically in Malaysia.

From the cognitive perspective, complexities in the marketing environment sometimes encourage customers to respond impulsively. The Point of Purchase Institute of America has revealed that 75% of brand decisions are made in-store, and this was further reaffirmed by WPP's Sir Martin Sorrell. The study claimed that shoppers are getting less loyal and decide on purchases impulsively, based on pricing, promotions, marketing collaterals and packaging (Sailendra, 2008). According to Kong (2009), in one news release by Richard Hall, low income shoppers are less loyal, with an explanation that they decline to shop around and tend to simply pick out any brands that are promoted. This suggests that consumers with limited resources are neither price-sensitive nor attracted by product attributes. Therefore, information processing overload and decision-making difficulties in expanded product lines make impulse buying behavior an alternative which is relevant.

Literature review

As proposed by Hausman (2000), there are five factors which are perceived to be motivations towards impulse shopping. They are hedonistic desires, social needs, esteem and self-actualization needs, perception of decision efforts and perception

of decision-making accuracy. Since this hypothesis still requires further testing, the variables provided are used in this empirical study.

Hedonistic Desires

Many studies provide conceptual support for the relationship between individual hedonistic shopping motives and impulse buying behavior. Need for novelty, variety and surprise are amongst the higher-order needs revealed in the literature (Hirschman, 1980; Holbrook & Hirschman, 1982). Likewise, consumers report that several hedonistic desires are satisfied by impulse purchase (Piron, 1991; Rook, 1987; Thomson, Locander & Pollio, 1990). Apart from that, social interaction gained in the shopping activity may also satisfy the need for emotional support. According to consumers' testimonies from qualitative studies, they feel uplifted or thrilled after doing shopping. The fun or psychological lift is evident when consumers reveal the difference between the emotions evoked by the shopping experience and routine aspects of life. Novelty is shown when shopping is rather a replacement for a primitive sort of hunting and the exploration of items is not any purchase value, but the reward instead.

Social Needs

Common feelings that the shopping experience satisfies social needs were perhaps the most regularly expressed reasons given for impulse buying behavior in previous studies. In terms of the expression of social needs, potential purchases appear to trigger impulse buying behavior unintentionally. Normative events such as season festivals and significant others' celebrations, are examples of the sources of urges towards satisfying social needs. Thus, the motivation is somehow different from desires to fulfil personal safety and physiological needs that propel consumers towards specific buying for individual consumption.

Esteem Needs

Esteem needs can be expressed by shoppers by giving credence to their desires to stay fashion-conscious. Esteem-motivated shoppers emphasise the importance of buying the right outfits because other people judge them by their appearance. Self-esteem needy consumers may sometimes buy an outfit without determination of the selection criteria, due to an uncommon event to attend. Needs of a sense of self-identity are also part of the esteem needs to be fulfilled during shopping exposure. There are some who treat the act of impulse buying as a reward for having to consider a trade-off in their routine activities in order to achieve a long-term oriented purpose. Although some researchers may find it close to or even an

example of self-actualisation, it is only labelled here as esteem needs due to the absence of profound nature of the inspiration. For instance, some may reward themselves by impulse buying because a difficult period of enduring the task is over, or simply as a result of, e.g., success of losing weight.

Perceived Decision-Making Accuracy

Purchase decision involves complexes with no single criterion which suffices to be a measure of accuracy (Hausman, 2000). For instance, price and product attribution factors are no longer significant to manifest as a measure of accuracy while intangible criteria, which are subjective in nature, are probably the better surrogate measurement. From customers' perspective, impulse buying is seen as the most accurate decision-making tool above all means of measurement, by just pondering on the satisfaction gained from the process itself. In evidence, one study reported that 41 % of consumers were satisfied with their impulse buying (Rook, 1987).

Perceived Decision Efforts

Bettman and Payne (1991) found that consumers may start to feel overwhelmed and frustrated in trying to handle the volume of complex information they experience. The situation, which is termed information processing overload, raises worry and unpleasantness among consumers related to the decision-making process (Baron, 1994; Herbig & Kramer, 1994). Other research (e.g., Bettman & Payne, 1991; Kahneman, 1973) suggests that joint effects of decision-making complexity and information processing overload may weaken judgement quality or accuracy. Under such circumstances, decisions may be worsen despite the focus on making the "right" choice (Kahneman, 1973).

Methodology

Malaysian respondents of a public university situated in the southern region of Malaysia were subjects of the study. Questionnaires were used as the method of data collection. Items were developed to measure the variables of this study: impulse buying behavior, hedonistic desires, social needs, esteem needs, perceived decision-making accuracy and perceived decision effort based on Hausman (2000), etc. Factor analysis was performed to assess the validity of the constructs and Cronbach's alpha was carried out to gauge the reliability of each dimension. Multiple regressions were used to identify the predictors of impulse buying behavior.

Data Analysis

302 questionnaires were distributed to the respondents as encountered by survey distributors. From the total of the questionnaires distributed, 235 respondents managed to return the questionnaire in a stipulated period and answer it completely. As a result, the response rate for this research was 77.81%. Therefore, the sample size that was used for the analysis of this research was 235 respondents.

Regression analysis was used because the order of their importance in predicting the outcome was unknown. Backward method was utilized due to its lower risk of missing predictors that in fact predict the outcome, impulse buying behavior (Field, 2005). The coefficients of the selected regression model were tested and the results are shown in Table 1.

Table 1. Coefficients of the Regression Model

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.457	1.093		1.333	.184		
Hedonistic Desires	.181	.053	.197	3.437	.001	.743	1.346
Perceived Decision-making Accuracy	.426	.083	.285	5.146	.000	.795	1.257
Perception of Decision Effort	.391	.062	.358	6.252	.000	.746	1.341

Dependent Variable: Impulse Buying Behavior

All the dimensions in this model showed a significance level of lower than 0.05. VIF values of the current model were all well below 10 and the tolerance statistics all well above 0.2. Besides, the average VIF is very close to 1. These findings show that the collinearity problem is negligible. Three dimensions were used to form the equation shown below:

$$\text{Impulse buying behavior}_i = 0.243 + 0.325 \text{ Perceived decision effort}_i + 0.284 \text{ Perceived decision-making accuracy}_i + 0.181 \text{ Hedonistic desires}_i$$

Discussion & Implication

A number of implications of our findings are worth mentioning. One of those is the boundary of the definitions between hedonistic needs and social needs. Hedonistic desires are simply motives for self-pleasure, regardless of the way of shopping. Even if a shopper intends to buy some things in favour of others, there is hedonistic desire whenever he/she enjoys the experience during the purchase. By contrast, social needs in shopping are needs which require interaction with friends or family in order to be satisfied. This satisfaction, however, is not gained by physiological or safety fulfilment per se, but through the fulfilment of significant others' needs. This statement is supported by factor analysis, where "I usually end up shopping for myself when helping people to buy things" loaded on the hedonistic desires factor, separate from the social needs factor.

Drawing from the results of the analysis, buying things impulsively can contribute to a sense of freedom and a way to display shoppers' playfulness and innocence. Those who are feeling even the slightest pressure of it would like to escape from the discomfort by enjoying shopping pleasures, which are readily available in most cities in Malaysia. These findings implied that social needs do not play a significant role in their mind to engage in impulse buying. A possible explanation for this situation is that their impulsive intentions to shop may be moderated by the presence of significant others, even though others are not judging them. This may be induced by their own negative normative evaluations about impulse buying behavior. Another explanation is that sharing the cognitive evaluation of purchase selection with each other may be a common habit among those who are shopping with significant others, thus making the impulsiveness trait of shopping not appealing.

The findings also indicated that esteem needs were not a predictor of impulse buying behavior among the Malaysians in the public university. It could be concluded that most of the local communities in the university have a limited amount of disposable income for shopping, because more than 50% of the respondents have disposable shopping income equal to or less than RM 200.00. Therefore, they may not feel readily exposed to overall product and service offering development due to their restrained buying power, thus making their style consciousness less important in purchase decision-making compared to other features like price and durability.

Although the global economic downturn which began in 2007 has begun to recover, the recession is still felt by the Malaysians, and they are still being cautious in handling expenditures. When they decide to give up brand loyalty and go for something more economical, they face an array of unfamiliar products. With the

product differentiation of each brand in terms of price, quality and quantity nowadays, direct comparison was quite impossible, and cognitive evaluations would lead to product information overload. According to Kahneman, (1973), information overload potentially triggers the moderating effect by lowering perceived or actual decision-making accuracy. Therefore, it may be common to have people selecting items impulsively rather than taking detailed comparisons in order to have better selection choices.

In fact, perceived decision effort may be a greater concern. As recessions come into effect, people ensure that the items they buy will be worth more and therefore lower priced. One finding was that 59% of the Malaysians spent extra time dealing with price comparisons during the recession in 2008 (Nyee & Bhattacharjee, 2008). However, the complex store environment and numerous items of purchase may cause information overload and frustration to decide on better selection. Therefore, it is believed that local communities in the university most probably buy things on impulse because of the discomfort of information processing overload.

As for recommendations, it is advisable for retailers around the university to enhance the retail environment stimulation. Hyper stores and supermarkets may be able to compete with mall retailing by creating ambient and spacious surroundings, as well as changing the frontal settings and decorations in a stipulated season. By doing so, the communities would better create the shopping experience of involvement in impulse buying. In order not to neglect the importance of creating a healthy retail environment, stocking a variety type of merchandises in an appealing quantity and settings would encourage people to buy on impulse as the model of the rational decision-making is no longer suitable to such complexity of product displays.

In order to generate more revenues other than price leadership, marketers should create on-brand experience among staff to ensure that an enlivening brand personality message can be spread to delight customers. Aveling (2007) found that there were some companies that promoted the brand internally to employees, which improved profitability by over 50%, but there were some cases where 40% of marketing was wasted due to undermining of promotional promises to employees. Since the local university communities are in doubt of making good purchase judgements, maintaining deliverance of brand promises among employees would help to induce impulse buying. Besides, development of product packaging, especially in aesthetical and product feature aspects, would encourage point-of-purchase in a range of similar products displayed in the retail stores.

As marketing personnel become enlightened about ways of attracting customers, local communities in the university are also given advice on how to curb regretful

and unpleasant purchase decisions. Despite the complexity of brands on display nowadays, rational judgement can be made by filtering based on general criteria impulsively, and then constraining choices into measurable numbers of items. It could help to reduce the use of product packaging as a demand stimulating strategy as well. When making a purchase decision, avoiding emotional distractions, such as advertisements, would help to generate information processing efficiently. For those who are having problems in planning credit purchases, debit cards are an alternative rather than credit cards. Besides, they are advised to observe symptoms of overspending, such as the tendency to rely on certain heuristics or shopping sprees, rather than enjoying window shopping. These methods could help the communities improve their mood in shopping while making good purchase judgements.

Due to the complexity of psychology constructs and time constraints, this study was carried out using quantitative tools and it only targeted the Malaysian communities of the university to provide information on what were the positive motivations of impulse shopping in Malaysia. Therefore, it is strongly suggested that researchers carry out qualitative studies and narrow the scope down to a particular group of population in a representative region (particular state, country, etc.) in order to expand and solidify the psychology constructs of the interest group.

Furthermore, certain processes of statistical study were impossible to carry out in this study, such as casewise diagnosis and assumption checking from graph plotting, due to some complexity of statistical techniques. It is suggested that further studies be conducted with other techniques to compliment the reliability and validity of this study.

Conclusion

The results of this study show that hedonistic desires, perceived decision-making accuracy and perceived decision effort matter in impulse buying behaviour. Certainly, buying things impulsively can contribute to a taste of freedom and a way to display shoppers' playfulness and innocence. The findings also conclude that social needs do not play a significant role in their mind to engage in impulse buying. As a whole, the developed framework has provided a plausible explanation for the effect of hedonistic desires, perceived decision-making accuracy and perceived decision effort on students' impulse buying behavior.

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The Contribution of Sport to Prosocial Behavior in Youth

Abstract

For proper organization of sport and physical education in general, it is necessary to obtain empirical evidence on how sport influences youths' social and moral development. To that effect, the research aim was to provide empirical data on the existence or non-existence of a connection between doing sport and prosocial behavior of the young. An appropriate questionnaire of pro-social behavior estimation was implemented on the sample of 61 students aged 12–14. The research findings show that there is a significant difference in the level of display of certain forms of prosocial behavior among the young athletes and their peers that are not engaged in some organized sport activities. Further, it was established that the type of sport influences the level of pro-social behavior manifestation. It was not found whether the length of doing sport is correlated with the pro-social behavior of adolescents. The results obtained point that organized sport activities represent the context having positive effects on the development of pro-social behavior of the young.

Keywords: *the young, sport, prosocial behavior, physical education*

Introduction

Positive social behavior represents an essential characteristic of interpersonal relationships and interconnections with other people. In fact, the behavior intended to benefit another person represents one of the basic values interpersonal relationships are based on. What is more, it influences a person's quality of life. As such, it

is important for achieving competence among young people in different aspects of life: academic, social, family, professional. Led by the development of scientific thought, an idea arises in social pedagogy. The idea is that sport can have beneficial effects on the social development of adolescents. However, the claim that sport may develop pro-social behavior of the young through their inclusion in "helping relationships" is often criticized for being empirically unfounded. It is because of the proper sport organization as a comprehensive social-pedagogical intervention that it is necessary to obtain empirical evidence related to the relationship between practicing sport and social behavior of the young.

Positive effects of sport on the social development of the young have been explained by a range of relevant factors of various degrees of generality, from the moral or prosocial behavior of the coach, through the quality of peer relations in the context of sport, to fostering a positive motivational climate (McKenney, 2001; Rutten et al. 2007). One of the perceptions refers to sport's cathartic effect. According to this view, regular participation in sport, especially in aggressive forms of sport, provides opportunities to discharge negative energy and release aggression in a socially acceptable manner, so that the person doing sport is to be less aggressive in situations beyond sport. Previous research has not supported the notion that involvement in sports has a cathartic effect for young athletes (Endresen & Olweus 2005).

The authors that start with the theory of social learning, point out that sport "provides a forum for teaching responsibility, cooperation, subordinating oneself to higher goals and shaping moral behavior" (McKenney 2001, p.15). By observation of the pro-social behavior exhibited by teammates, the opponent or coach, young athletes learn such behavior and will tend to express it, especially if it is in some way rewarded (Joksimovic and Vasovic 1990). Sports activities require respecting certain standards of sportsmanship, which can contribute to learning to resolve conflict, develop a greater perspective and self-control and other social and cognitive skills. Some authors suggest that sport is an advantageous therapeutic context in which adolescents with behavioral disorders can learn pro-social behavior (McKenney 2001).

However, the world of youth sports also allows different interpretations. Theorists and researchers suggest that practicing sport at a high competitive level is coupled with the stress and anxiety of young people, even outside the sport context. Some authors further indicate that youth sport has become professionalized, marked by extreme training, early specialization and focused solely on the maximum score (Theokas 2009). Competition as the main feature of sport may contribute to reducing young athletes' empathy for the needs of others. Training in martial

arts, for example, requires acquisition of a repertoire of aggressive behaviors, and this exercise can boost aggressive behavior, not only in the situation of training and sparring, but in other circumstances as well. Excessive emphasis on winning in sports can lead to young people behaving in interactions with their peers as antagonists and less willing to help others. Vindictiveness can develop among athletes, and even victimization (e.g., of poorer players), suggesting that for many young people sports is not always a positive experience (Light Shields, Bredemeier, LaVoi & Power 2005).

In some studies, adolescent athletes reported that they are more likely to participate in risk behaviors, such as alcohol abuse and delinquency, compared to adolescents who do not do sports. In their longitudinal study, Endresen and Olweus (2005) found that participation in sport is related to the development of anti-social behavior among young people. Further, the findings, according to which young people who train team sports indicate a low level of social skills and moral reasoning, are worrying (Fredericks & Eccles 2006; Lai, Stoll & Beller 2006).

Research method

The research aims: How does doing sports affect social and moral development of young people? That is the issue that has both educational and broader social significance. Previous research on this issue has obtained contradictory results (Endresen & Olweus, 2005; Rutten et al., 2007). For the correct organization of youth sports activities and physical education in general it is important to examine the relationship between organized sports and young people's social behavior. The overall goal of this study was to examine whether sport contributes to the development of pro-social behavior among young people. The specific goals are related to understanding the similarities and differences in the impact of sport on the pro-social behavior of young people, in terms of: a) type of sport, and b) the length of training. In accordance with the presented goals, the research started with a general hypothesis that there was a significant positive correlation between sports and pro-social behavior in adolescents.

The sample: The design of accidental sampling was applied in the research. The sample consisted of youth aged 12 to 14. The sample consisted of 31 adolescents who were involved in sports and 31 adolescents who did not participate in organized sport activities. The sample included young people who trained team sports: basketball, football and handball.

The instruments: In the paper, pro-social behavior is defined as any social behavior that contributes to the well-being of another individual or group, regardless of the degree and type of personal gain or the victim (Krnjajić, 2002). Pro-social behavior is determined as a composite variable whose parameters are: a) readiness to help others; b) willingness to cooperate; c) nurture, d) empathy and e) altruism. For the testing of pro-social behavior, questionnaires were designed for adolescents who participated in sports and adolescents who did not train. Questionnaires were parallel (identical questions) and had been modified only in the aspect that related to the participation in organized sports activities. Formulation of items (questions) and offered alternatives was performed so that the participants could express the degree of agreement with each of the mentioned statements.

In addition to the basic descriptive statistical procedures, also used in the study were t-test, Mann-Whitney test, and Cruskal-Wallis test. Application of the above statistical procedures was determined by the nature of the data collected.

Results

In order to analyze the impact of sports on the development of pro-social behavior, the significance of differences at the level of expression of all forms of pro-social behaviors of the adolescents who did sports and adolescents who did not do sports was tested. The testing was performed by t-test at the significance level of $p < 0.05$. The results of data analysis showed that a significant difference between the two groups of subjects was found only in two dimensions of pro-social behavior. These were the following dimensions: willingness to help other and nurture (Table 1). As for the remaining forms of pro-social behavior, significant differences between the adolescents who did sports and their peers who did not train were not established.

Table 1. Readiness to help other persons in relation to doing sport

	N	M	SD	t – test (df)	p
train	31	29.73	.69	2.434 (60)	.01
do not train	31	25.28	1.16		

Table 2 shows the results pointing that among the adolescents who trained and the adolescents who were not involved in sports there were significant differences at the level of the expression of nurture. The direction of the differences was such

that it showed that young people who were involved in organized sports activities exhibited a higher level of nurture than their peers who did not train.

Table 2. Nurture in relation to doing sport

	N	M	SD	t – test (df)	p
train	31	28.60	.83	2.33 (60)	.02
do not train	31	26.45	1.07		

Further analysis was focused on testing the statistical significance of differences in the level of pro-social behavior among the young people in relation to *the type of sport* they were involved in (basketball, football and handball). A nonparametric test, Kruskal Wallis, was applied because conditions were not met (too small subsamples) for the application of standard parametric tests of the analysis of variance (ANOVA). The test results showed that among the groups of athletes there were statistically significant differences at the level of expression of willingness to cooperate with others and care for others. The obtained results are shown in Table 3.

Table 3. Willingness to cooperate with others and care for others in terms of the type of sport

		readiness to cooperate with others			nurture		
type of sport	N	Middle rank	Chi-square (df)	P	Middle rank	Chi-square (df)	P
basketball	11	22.09	9.02 (2)	.01	21.82	7.03 (2)	.03
football	9	15.22			12.83		
handball	11	10.55			12.77		

Further analysis showed that there was a significant differences in the expression of willingness for cooperation between the adolescents who trained basketball and the adolescents training handball ($p = 0.008$). When it comes to nurture, significant differences were found among the young people playing basketball and the young playing handball ($p = 0.05$).

For the purpose of testing the third research hypothesis, the significance of differences at the level of expression of all forms of pro-social behavior in relation to *the length of doing sports* was tested. The nonparametric Mann-Whitney test was applied. No significant differences between the young people who had been

involved in organized sports for a period shorter than 3 years and the young people who had been training for more than 3 years were established.

Discussion

The analysis of the relation between involvement in sport and young people's pro-social behavior was the primary aim of this study. What was the most important finding was the fact that doing sport encouraged two types of pro-social behavior: readiness to help others and nurture (concern about others' welfare). This only partially confirms the initial expectation that doing sport promotes the development of pro-social behavior of adolescents, which is consistent with other research findings (Rutten et al. 2007). Such a situation leads to the conclusion that sport represents a context for learning pro-social behavior among the young through their interaction with teammates, opponents, coaches and parents.

According to this finding, one could assume that with more intensive inclusion of sports activities in prevention programs oriented towards schools we could create the environment which would contribute to the prevention of youth problem behavior and the development of pro-social skills. Therefore, sports programs related to school have a series of advantages, such as availability to all students, absence of outside pressure directed at achieving the maximum result, possibility of integrating sport in other curricular and extracurricular activities. Furthermore, while analyzing the connection between involvement in sport and pro-social behavior of the young, it is important to point out that developed pro-social skills are an important condition for realizing positive social relationships, but they also affect the process of adjusting to the school environment and achieving school success. Cooperative and helping behavior, for instance, contributes to establishing a positive, academically relevant interaction between the teacher and the peers, which represents a desirable context for the realization of the process of learning and teaching.

As for other forms of prosocial behavior – readiness for cooperation, altruism and empathy – no significant differences between the adolescents involved in sports and their adolescent peers who did not train were found. These findings are not consistent with the results of other research (Gasic-Pavišić and Janjetović, 2007), in which it was found that engaging in team sport develops in young people the most readiness to cooperate with others. This finding poses a few questions and suggests, among other things, that doing sport does not develop the ability to adopt someone else's perspective among adolescents. Such a capability represents

the basic correlate of pro-social behavior (Carlo et al. 1999). What is more, it seems that sport does not develop the ability to identify with the other person. Bearing in mind that empathy is one of the basic form of pro-social behavior, it would be useful to conduct research on the relationship between involvement in sport and the development of empathy in the young.

From the perspective of social pedagogy, and from the aspect of decreasing and encouraging the possibilities for development of youth's pro-social behavior, the quality of the experience the young have in sport mostly depends on the influence of their natural mentors – parents and coaches. Coaches and parents, through adequate supervision and establishment of clear and mutually synchronized expectations, can satisfy the developmental needs of the young and therefore ensure their motivation for the internalization of norms and standards of pro-social behavior. Unfortunately, situations in which coaches and parents pressurize their players, tolerate bad sports behavior, or even force them to cheat, hurt their opponent and argue with referees are quite common. Those are the factors that can inhibit the development of moral thinking and pro-social competence of the adolescents involved in sport.

It has been discovered that the type of sport affects the level of expression of pro-social behavior. The adolescents who train basketball are more likely to cooperate with others in relation to young people who play handball. When it comes to nurture, significant differences between the groups of athletes are also established. Basketball players show greater nurture than handball players. Several possible factors constitute the basis of these differences. One of them is the difference in the intensity of physical contact in basketball, football and handball. Various levels of physical contact in different types of sport stipulate different goal orientations of young athletes (Kavussanu, Seal & Phillips 2006). Individual (ego) orientation, which can be related to aggressive behavior, is more prominent in the sports which involve a higher level of physical contact. It seems that in basketball, in comparison with football and handball, task orientation is more present. In other words, the young who play basketball mostly assess their competence in relation with their own previous performance and progress. In accordance with this, we are prone to conclude that the ego orientation of athletes is more present in football and handball and that the experience of success is based on social comparison. Success is regarded as the consequence of superiority over others, not due to the effort put in the task. It is understood that, provided they positively encourage progress, making effort and improvement, parents and coaches can contribute to the creation of a motivational climate which encourages task orientation, which will consequently lead to the strengthening of the pro-social behavior of the young. In other words,

if young athletes see that coaches and parents believe that the key to success is making effort, they will develop the same beliefs.

It has not been found whether the length of training significantly affects prosocial behavior of adolescents. Specifically, it has not been found if there are significant differences at the level of expression of pro-social behavior of adolescents who have trained for more than three years and those who have trained for a period shorter than three years. Although this finding suggests that the positive effects of sport on the pro-social behavior of young people are achieved after a relatively short period of involvement in organized sports activities, we believe that further studies on this issue are necessary. The need for further research is imposed by knowing that long-term involvement in sport is characterized by a higher level of specialization and competition (school competition, national and international competition), which can potentially lead to a bad sports behavior.

The results show that doing sport has positive socialization effects. However, these results do not allow us to make a definitive conclusion that sport contributes to the development of pro-social behavior because they are correlated and it is not possible to make an unambiguous conclusion about the direction of the association of these variables. It is possible that the effect of selection determined the results of the research. Namely, it is possible that the adolescents in the sample opted for sports because they were more willing to cooperate and care than their peers who do not do sports. But also, the findings can be interpreted as a significant contribution of sport to the development of pro-social behavior.

Conclusions

The summarized results of this study demonstrate that sport contributes to the development of pro-social behavior in adolescents. It was found that doing sport primarily develops two types of pro-social behavior: readiness to help other people and nurture, by which the thesis of the developmental benefits of the youth involvement in sports was confirmed. However, the lack of connection between practicing sport and other forms of youth's pro-social behavior suggests that sport does not have such a strong influence as one can expect.

Sport contexts are complex, dynamic and influenced by different factors, both visible and invisible. Positive social relationships and interactions with adults and peers in the sports context are a major factor in the quality of the experience of young people in sport. Nevertheless, there are often situations in which parents and coaches are putting pressure on their figureheads, sanction, support unsports-

manlike behavior for the sake of victory over the opponent. In this regard, it is important that open coach-player(s) dialogue on sports games, covers important aspects, such as: what is good and bad sportsmanship, personal and team responsibility, respect for teammates and opponents. One of the most important tasks of a coach is to create a positive motivational climate. When the coach creates a climate that emphasizes independent defining of the criteria of desirable behavior, young athletes will form positive beliefs about their own competence, have the feeling of independence and a high level of moral reasoning (Rutten et al., 2007; Theokas, 2009).

From the perspective of social pedagogy, the significance of the findings branches in two directions. The first one is related to the confirmation of the assumption that sport *could* represent a social environment which promotes the development of youth's pro-social behavior. Also, sport can be uniquely positioned as social-pedagogical intervention that provides many opportunities for preventing youth problem behavior. Furthermore, the results of the research are important because they support relinquishing of the traditional approach to organizing sports activities for the young and emphasize the need for more intensive pedagogical guidance (mentorship) of children and adolescents in the process of social learning in sports activities. We believe that the values and the system of beliefs of parents and coaches and behavior towards the young represent significant determinants of the value system, behavior and achievement of the young in sport. In other words, on the basis of the findings of this research it is obvious that achieving a desired role of sport requires all the participants to adopt a new way of thinking about sport and its developmental functions. More specifically, it is about conceptualizing sport as comprehensive social-pedagogical intervention, based on contemporary theoretical and empirical findings of social pedagogy. There is a doubtless potential for this direction of the development of youth sports, which has been proved by the findings of this research.

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Causes and Consequences of Labelling Gifted Pupils at Selected Elementary Schools

Abstract

The article describes qualitative research analyzing causes and consequences of labelling gifted pupils. Causes and consequences were identified after an analysis of semi-structured interviews with gifted pupils, their classmates and teachers. Identified causes included certain pedagogical strategies such as excluding a gifted pupil from a group of their peers, using specific names for classes, excessive media coverage of specialized classes and pupils. Labelling was further promoted by a curriculum differing in its content, processes and materials offered to gifted pupils only. Consequences of labelling included ostracism and ridiculing of gifted pupils by their classmates, rivalry and hostility. The article concludes with proposals which might help to reduce labelling.

Keywords: *labelling, gifted pupil, causes and consequences of labelling.*

Introduction and Present State of the Problem

The topic of our research is the category of labelling. The term itself is defined by a labelling theory. The labelling theory deals with labelling individuals according to their abilities and skills. After an individual is labelled, their attitude as well as the attitude of professionals and their environment towards them changes and the individual thus becomes stigmatized. As a label we understand, e.g., a psychiatric diagnosis, which may lead to a self-fulfilling prophecy. Consequently, a diagnosed person begins to show behavioural deviations (Urban, Prošek, 2008).

The labelling theory, except for its early concepts (G. H. Mead, E. Lemert) began to be explored in the 1960s (Munková, 2004) and was further made popular by a book *Outsiders* by H.W. Becker. A process of accepting new roles by labelled individuals was described on an example of people diagnosed with behavioural deviations (Munková, 2004). In his book *Stigma*, Goffman explores how stigmatization affects an individual's identity.

An individual's level of giftedness can also be seen as a stigmatizing attribute, negative or positive. The attribute "gifted" usually appears during the pedagogical and psychological diagnostic process and this label is given by subjects dealing with an individual. The label further affects the individual's sense of identity. Moreover, the level of giftedness is not a constant quality. Giftedness is associated with external factors of the environment and internal factors of an individual and its level changes during the individual's lifetime and may even disappear completely (Dočkal, 2005).

In spite of the above-mentioned, no thorough research is carried out in the Czech Republic. There are several academics that touch upon the subject but do not go into detail (Machů, 2010). Foreign scholars often discuss the subject of labelling gifted children, e.g., Matthews and Foster (2005) or Renzuli (2004).

As for research into giftedness, it is often carried out not only in the school environment, but also in the family and among one's peers and it relies on quantitative research methods. If we focus on research carried out in the school environment (Gates, 2010, Renzulli, 2004, Moulton et al, 1998), we find conclusions that point out positive as well as negative aspects of labelling. Negative aspects, which tend to be mainly social ones, include, e.g., stereotypical evaluation of a gifted pupil, a gifted pupil's concerns that they will fail the academic expectations, surrounding pressure and high expectations of their parents and teachers alike, which are not compatible with the pupil's level of giftedness. Positive aspects, which are mostly personal and academic, include, e.g., influencing the teacher's expectations, enriching educational methods and tools available for labelled pupils, a highly individual educational approach, interaction with other gifted pupils, etc.

Our research is qualitative and its aim is to analyze causes and consequences of labelling gifted pupils. As we employ qualitative research methods and we have a low number of informants, we are aware of the fact that it is impossible to generalize the results. Moreover, the experiences and knowledge of informants evolve and they cannot be treated as statistical phenomena. The above-mentioned fact frames our further thoughts about the researched issue and about possible further research.

Research of labelling gifted pupils

Aims of the research: a) define educational methods, strategies and attitudes which may result in labelling gifted pupils at elementary schools, b) find out if labelling tends to appear in connection with a certain educational form, c) assess the consequences of labelling.

Research sample: The research sample purposefully included 16 informants: 6 teachers of gifted pupils, 6 gifted pupils and 5 classmates of gifted pupils. As for the teachers, 4 of them taught their pupils in a specialized class for gifted pupils created specifically for educating gifted pupils at standard elementary schools (so-called transitional educational form, henceforth: transitional form) and 2 of them taught at standard elementary school with integrated gifted pupils (integration as educational form, henceforth: integration or integrated form).

A gifted pupil (henceforth: GP) in our research is defined as an intellectually GP, diagnosed by a pedagogical and psychological counselling centre. Interviewed classmates of these GPs were not diagnosed as intellectually gifted. All pupils attended the 4th or 5th grade of elementary school.

Data sources and their processing: Data were collected in semi-structured interviews. The interviews were recorded and transcribed. The data were collected in January 2011 at selected elementary schools in the region of Southern Moravia. After having processed qualitative data, we opted for the methods of the grounded theory including open, axial and selective coding (Strauss, Corbin, 1999).

Research data processing

Open coding

Transcribed interviews were given codes relating to the research aim. The codes were named and grouped into six categories (cf. below). The information in the categories was not retrospectively filled in.

1. Formulas of schools and teachers on education of GPs

In the given category, there is a clear difference in educational methods according to the educational form followed by each school.

One teacher describes how she usually works with a GP in an integrated class: *“The pupil excels in mathematics. At the time he spends with us in class he is given some extra work or he works with us for a while and is a kind of an assistant for me, he checks on other pupils, looks up information, I have him to help me”*. Another

informant adds: *"This pupil is given some extra work when he finishes before others do. He may be asked to look up some information online or help other (slower) children."* Another teacher says: *"Those two gifted pupils are able to do more than others and because I do not want them to feel punished for that, they are allowed to bring books, encyclopaedias to school, so they may fill up the remaining time the way they like."*

Transitional education forms do not single GPs out of class since all children are diagnosed as gifted. Nevertheless, GPs are singled out among individual classes of the school. To answer the question of what the school has to offer to develop the skills and abilities of GPs, one teacher said: *"We offer individual studying plans, we have a reduced number of pupils in classrooms and we use different teaching methods. We work on projects a lot and we speak with parents more often."* Apart from their usual subjects, GPs also attend a subject of enrichment where they learn more about their area of interest. As one of the teachers says, *"the subject of enrichment is attended by pupils from XY classes (name of GPs' classes) once a week... they work on projects or we invite interesting lecturers for them."* Some of these schools offer their pupils so-called work in blocs. GPs are taken away from regular classes and grouped into new working teams. Another school teaches its GPs in regular classes in main academic subjects, other subjects are taught together with pupils of the grade. One GP claims: *"We do not form a class together with class B, we are a group of gifted pupils so we only share several subjects – swimming, art and music."*

2. the attitude of schools and teachers to GPs

One of the strongest attitudes to GPs is held by a school with a transitional education form. The fact that the school is targeted at gifted children education is well promoted. The situation is described by one of the teachers: *"The management of our school often emphasizes the fact that gifted pupils may study here. It appears in the press and we often get the GPs involved in competitions and projects, so even other children hear about it even though they may not seek out the information themselves. They hear it on the radio, see posters, read articles on their gifted classmates."* The school also introduced specific labelling of classes with GPs, thus even the uninformed public knows which classroom is the one with GPs.

Another school with the transitional education form distributes GPs to its first level classes evenly (ordinary class mixed with a group of GPs). The school has not introduced special labelling of classrooms. It is clear that teachers are aware of certain risks when labelling GPs: *"It all started with a club of gifted children of Menza. But later on, we did not want to give way to labelling so we opened the club to everyone interested."*

The attitudes of teachers to GPs are of two types. Either a teacher considers as gifted only a pupil who has been diagnosed by experts as such – and selectively offers them an enriching curriculum: *“The pupil has their individual plan and may work with the class or by themselves”* or the teacher may understand all smart and motivated pupils in their class as gifted and thus they may offer an enriching curriculum to the whole of the class. *“I could call several other pupils gifted, or maybe smart ...”* The teacher says and then adds: *“Gifted pupils should be treated carefully and not ostentatiously. A teacher may say that there will follow an interesting task knowing that gifted pupils will be interested. They may motivate others who are just interested.”*

The category also includes labelling GPs as gifted and emphasizing the fact that they are gifted throughout their classes. The teachers claim that they do not label pupils as gifted. The specific term for GPs is used by one teacher only in the transitional education form. She calls her pupils either *“bright sparks”* or *“sillies”* and she uses it with humour and says the children do not find it offensive.

3. Self-esteem of GPs

The GPs consider their giftedness as something positive, especially from the personal growth point of view, even though they realize possible social disadvantages of giftedness. That may be why certain pupils deny it: *“It is an advantage even though it may be a disadvantage in this world. It seems average people talk more to each other to us.”* Another girl says: *“Sometimes being a gifted one is clearly a disadvantage, I may boast off and regret it later. And sometimes it is an advantage as I may attend this school and be in a nice classroom with a different style of teaching.”*

The teacher from the school with the transitional education form believes that recently society's perception of giftedness and being knowledgeable has changed: *“I think that nowadays people do not conceal so much that they know more or can do something. On the contrary, because they are appreciated for it and as there are more of them in a class; they do not feel ashamed of being gifted or smart.”*

4. Breeding elitism?

Teachers from schools with the transitional education form stated that they tended to meet parents who liked to stress the fact of being gifted to their child. *“In the beginning, some parents, even though asked not to do it, emphasized the child's giftedness in front of them.”* Another teacher says: *“The greatest weakness is that some parents like dwelling on the fact that their child is gifted, they like to breed elitism. When they consult counsellors, they push psychologists into diagnosing their child as gifted, they know that we are careful to do so, but they believe it is something extra for their child.”*

Teachers from standard schools are not aware of too much labelling going on among GPs' parents. Sometimes they come across the following situations: *"There was a diagnosed gifted boy. He kept telling me that he doesn't need to do this and that as he is really gifted, with very high IQ and his psychologist says that there is no need for him to do those things... we are speaking about elementary things, like taking notes or singing."*

5. Material provision as a guarantee of quality education

Computers with online Internet access and specialist literature constitute typical didactic aids for teaching GPs in specialized classes. One teacher herself says that ten computers in the classroom for GPs are above everyday standard and she explains it like this: *"They have computers here mostly because they start typing with their both hands, which is above standard. They work on an all-year-long project which they prepare by themselves. So we brought more computers, but we are still testing it."* Then she adds: *"At least one computer can be found in every classroom, but we tend to take pupils more often to a computer classroom as we have computer classrooms here so everyone works on a computer at least once a month."* In classrooms with so-called "regular-classrooms," didactic aids are used according to one teacher in the following way: *"In classrooms with gifted pupils, there are about 4 to 6 computers with online Internet access, so if they do not understand something they may look it up and sometimes they work on a task to look something up, they write essays, as most of them have trouble with hand writing, typing is, of course, more legible."* To a question whether only GPs can do so, the teacher answers: *"It is not only gifted pupils but also pupils not diagnosed as gifted, but about whom the psychologist said that they would be able to do it."*

Another teacher claimed that children from standard classes are aware of differences among classrooms: *"The only thing the children see is that classrooms for gifted children are better equipped so sometimes there is envy when passing the classroom, but this is about material provision. When they are envious that there are computers in other classrooms, we tell them it was paid for by the parents of GPs and if their parents contribute financially, they may buy whatever they want for their classroom."*

6. Social background of education

There is healthy competition among GPs and their classmates, but there is also hostility illustrated by the following words of a classmate of a GP: *"When we once went for lunch, Zuzka talked about things none of us really understood. She is into chemistry and lots of kids do not talk to her because she is so smart."* Another classmate of the girl expresses certain effort in making the girl part of the team and

says: “*She is interested in so many things almost as if she was an adult. And we have tried to tell her to be more involved with us, to enjoy her childhood more.*”

GPs educated in the system of regular classrooms talk of being sworn and sniggered at quite often by their classmates. It is a two-way process when a girl says that gifted children like boasting and that makes their less gifted classmates react. One of the gifted girls describes the situation: “*Sometimes we discuss it a lot that some kids like to sneer at us, ha, ha, ha, (a class of GPs), the smartest ones in the world... sometimes they are very rude.*” Even the teacher mentions mutual hostility: “*It happens sometimes in this class that when GPs fail, other children welcome it and say, well, finally.*” Another teacher comments on competition between GPs and their classmates in the class: “*Well, there is certain rivalry, a desire to show others what I am good at, but it is the teacher’s job to bring kids into line.*”

Axial coding

The aim of open coding was to map which education methods, strategies and attitudes may cause (and have consequences) labelling GPs. The aim of axial coding is to identify possible causes and consequences of labelling and show identified phenomena in a coding paradigm. We worked with a simplified model during axial coding: Causal conditions, Phenomenon, Context, Intervening Conditions, Actions and Interactional Strategies, Consequences (Strauss, Corbinová, 1999).

Phenomenon, its central category is labelling GPs. *Causal conditions*, which in our opinion may result in the occurrence or origin of labelling, include media coverage of classes for GPs or individual gifted children. Another cause may be inappropriate education strategies used by pedagogues. In elementary schools, GPs are often excluded from the group of children in order to be offered a specific enriching curriculum. Educating gifted children in specialized classes promotes labelling by the use of non-standard aids, but also by different pedagogical attitudes which are perceived by other pupils in the school. The way education is organized is an omnipresent *context*.

Intervening conditions, which may influence and promote the existence of labelling, include categories from causal conditions (cf., above), but also addressing children as bright sparks and sillies. *Actions and interactional strategies* show various reactions to the phenomenon, or elimination of the labelling of GPs. Most often it means that a school realizes the overuse of the adjective “gifted” or, more specifically, the school renames its club for gifted children. Another appropriate strategy is to apply an enriching curriculum to all pupils in a class, not only to gifted ones. *Consequences* of labelling include ostracizing a gifted child from the group of their peers, sneering at them by their classmates, rivalry and hostility, envy of other

children because of the equipment above standard and teachers not being able to explain the differences. Another consequence may be the attitude of a gifted child towards themselves and their own giftedness, calling their classmates ordinary, calling themselves “gifted”, refusal of necessary tasks and activities because of their giftedness and making their environment aware of their giftedness, which does not develop a GP in any way.

Selective coding

After having defined relationships among categories, let us now address the phase of selective coding. We deal with a simplified method of selective coding, so embedding of a theory is only implied.

The central category is formed by the labelling of GPs. It seems logical that the integrated form of education shows more labelling present on the level of a class. Once the form of acceleration is used, a pupil attends a selected subject in a higher grade, labelling appears on the level of school, too. The transitional form of education shows labelling both on the level of a class and school, as all pupils of a specialized class are diagnosed as gifted. Labelling on the level of a grade is manifested in standard classes with a group of GPs. We follow with specific data on causal and intervening conditions of labelling.

As for the integrated form of education, labelling appears mostly as a result of inappropriate pedagogical strategies which lead to ostracizing a GP. It may include the overuse of a strategy when a GP assists the teacher and helps them with slower children. Another inappropriate strategy is the use of an enriched curriculum for diagnosed pupils only and in the way that excludes them from the group of their classmates.

Transitional forms of education introduce labelling through classes or groups for GPs only where the above-standard teaching conditions are available. These may include above-standard material provision in the classrooms of GPs, application of an enriched curriculum to GPs only, calling children little bright sparks and sillies, specific names of classes for GPs and exaggerated media coverage.

Recommendations against labelling

Recommendations against labelling are our proposals of how to eliminate consequences of labelling. Nevertheless, these proposals are not based on our own research. Recommendations in all forms of education include:

- a) We recommend the following strategies to eliminate labelling in a standard integrated class. The first one is the use of so-called standard and above-standard tasks. Standard tasks are objectively simpler and are based on lower

levels of Bloom's taxonomy of cognitive aims. Pupils may individually choose tasks according to their knowledge and momentary dispositions. The second option is the use of so-called complementing tasks, which may be given to the children who have already finished their work (and they are not only GPs). Another strategy may be the incorporation of activating methods which enable a pupil to deal with a task individually and there is no need to single a GP out (Machů, 2010).

- b) As for recommendations concerning the so-called transitional form of education, schools may find inspiration in the Revolving Door Model by J.S. Renzulli (Renzulli, Reis, 1997). Enriching activities are offered to all pupils and only those who succeed in a series of tasks thanks to their interests and motivation follow to higher stages of enrichment. Dočkal (2005) suggests that GPs should be incorporated in small groups into standard classes. They have a supporting teacher at hand, who offers an enriching curriculum and tasks are not always carried out by the same pupils. GPs may attend standard classes as well as a pupil doing well in a subject, who may join the subject of enrichment.
- c) As to the causes of labelling, e.g., calling children little bright sparks and sillies, specific names for classes of GPs and excessive media coverage, it is essential to create a team of expert teachers in the field of giftedness and thus help to set up correct conditions for the development of children's giftedness.

Summary and Conclusions

The research was based on the qualitative research methods of grounded theory and touched upon the essence of labelling of GPs at selected elementary schools. As most of the cited researchers, we see both positive and negative consequences of labelling. Positive consequences include selected academic and personal aspects (cf., the Introduction). However, we identify differences in the social aspects, dependent on the specific character of the socio-cultural environment of research. Several cited foreign sources emphasize social aspects which appear as a result of private school education. Our research emphasized negative social aspects based on different development opportunities for diagnosed GPs only.

The expected consequences of labelling are those on the level of a standard integrated class and selected external consequences (codes of elitist parents, media coverage and specific names of classes). The surprising findings (and not described in any of the research cited) were the causes of labelling in specialized classes

related to the inner policy of a school, where we identified completely different opportunities for GPs in specialized and standard classes within one school. Moreover, these differences could be easily eliminated by the recommendations against labelling. As there is an ever growing number of specialized schools for GPs, we suggest that the above-mentioned phenomenon should be further examined in quantitative research which could be based on our conclusions.

Labelling of GPs is an ethical problem which, in the changing socio-cultural conditions, becomes even more urgent.

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Leadership Roles Displayed by Physical Education Teachers Working in Educational Institutions in Turkey

Abstract

This study was done in order to determine the leadership roles displayed by physical education teachers working in primary and secondary education institutions in Turkey. The sample group of the study included 170 physical education teachers working in these educational institutions. So as to determine the ideas of the sample group, the scale form developed by Beycioğlu (2009) in order to determine the teachers' perceptions and expectations related to teacher leadership was used. At the end of the study, a statistically significant relation was found in the ideas of the teachers in terms of school type variance in the "Institutional Development" dimension and age variance in the "Collaboration with Colleagues" and "Professional Development" dimensions. In all the dimensions, for gender, educational status and professional service period variances, no statistical significant relation could be found. As a result, it is determined that in order to increase leadership behaviors of the physical education teachers, measures should be taken by managers and studies about improving leadership behaviors with education supervisors' counseling applications and in-service training for physical education teachers should be increased.

Keywords: *educational institutions, physical education teachers, leadership.*

1. Introduction

Leadership is one of the main subjects for which scientific studies were done in the management field in the 20th century and which was analyzed by both theorists and practitioners. As a result of research into leadership and what leadership is,

many definitions were suggested about leadership in the related literature (Erçetin, 2000). Leadership abandoned the notion of “more managers few leaders” borrowed from management science at the end of the 20th century (Bogotch, 2005). This condition led to the change in leadership perception in an age when the leadership concept went through changes according to large-scale cultural, technological, economic and political forces (Mulford et al., 2004). In the studies on leadership, it was observed that leaders are not alone, there is collaboration among leaders, it is a matter of joint effort of other staff and different people display leadership roles (Anderson, 2004).

It is seen that many researchers in the management field define leadership as a process of directing and affecting the efforts of the people in the direction of reaching certain ends (Hodgetts, 1999). Leadership is affecting, guiding for redirection, efficient activity and appearance (Paksoy, 2002). Leadership is the efficiency to gather people around certain goals and to realize these goals together by motivating the individuals (Hale, 1998). Jagues and Celement (1991) define leadership as motivating more than one person in the direction of common goals with all their loyalty and efficiency and as a process of making them successful. Law and Glover (2000) stated that the managers displaying leader manager behaviors have a vision and they could gather the staff around a common goal.

Bolin (as cited in Murphy, 2005) states that leadership in educational institutions is now heading for a notion supporting the development and efficiency of education in contrast to the notion that controls education (Murphy, 2005). McCrackin (2007) lays emphasis on the fact that leadership in educational institutions should be away from a hierarchical structure depending on the scientific management approach. It is not possible to think that the leadership dependent on the bureaucratic principals of the past works in educational institutions, because leaders are now expected to make changes in their schools and to create learning groups focused on the improvement of school.

Teacher leadership means the support of educational staff such as social workers, heads of departments, experienced teachers, pioneer teachers and learning experts and supervisors (Sledge and Morehead, 2006). Teacher leadership is the efficiency to arrange class activities effectively by developing and sharing an educational vision and to play and improve functional roles in school activities (Can, 2006). A leader teacher means a person who teaches in the classroom and also spends all their time to fulfill their responsibilities and who plays some roles for this aim. Sometimes a leader teacher means a teacher whose teaching charge has been reduced and who displays some leadership roles in order to develop classroom practices spending all their time out of the classroom among other teachers (Lord and Miller

2000). Leader teachers should establish an environment to make other teachers eliminate what they do in time, reflect and improve their practices. In this case, a leader teacher should be one who develops a professional development group in accordance with their goals (Sledge and Morehead, 2006). Teachers should tend to take various risks to be leaders (Buckner et al., 2000). In the process of education, leader teachers have unique leadership styles along with their knowledge, skills, attitudes and behaviors. According to their leadership style, while some teachers teach using passive learning activities, as an authoritative and repressive teacher in the classroom, other teachers teach with the use of active learning activities, as a democratic and participator teacher. This is directly related to the leadership style of the teacher (Güllü and Arslan, 2009).

1.1. The Goal and Importance of the Study

Today, teachers' leadership behaviors are among the topics at issue in the field of organizational behavior. It is thought that to research the leadership behaviors of the teachers playing an important role in society will present data that could partially decrease the existing problems of the education system. Especially for physical education teachers, leadership roles are of particular importance for them to continue what they do successfully. In this study, it is aimed to determine the perceptions of physical education teachers working in primary and secondary educational institutions in relation to the leadership roles they display.

2. Methodology

The main population of this study included physical education teachers working in primary and secondary educational institutions in Turkey. The sample group was limited to 170 physical education teachers working in provinces chosen at random (Tokat, Düzce, Muş, Sakarya, Malatya, Kocaeli, Şanlıurfa and Mardin).

In order to determine the ideas of the research group, "*The Scale to Determine Perceptions and Expectations related to Teacher Leadership*" was used. The data obtained from the research group were analyzed by SPSS 17.0 package software. As a result of reliability analysis, Cronbach's Alpha coefficient values were determined as "Collaboration with Colleagues .812", "Institutional Development .700" and "Professional Development .780". The total Cronbach Alpha value was found to be .831. So as to evaluate the data better, the quintet grading of the scale was determined as "Never" (1.00–1.80), "Seldom" (1.81–2.60), "Sometimes" (2.61–3.40), "Often" (3.41–4.20) and "Always" (4.21–5.00). Normality and homogeneity analyses

were made by assessing the statistical data of the scale. Because the data have a normal distribution and a homogenous structure, in paired comparisons t-test independent from parametric tests and one-way analysis of variance (ANOVA) parametric tests for multiple group comparisons were applied. LSD test was applied to find the reason for the differences among groups. The statistical significance value was found to be Alpha (α) and the level of significance was accepted as $p < .05$.

3. Findings

In the direction of the study goals, the findings about the leadership roles displayed by the physical education teachers working in educational institutions were shown in tables below.

Table 1. T-test result of research group according to school type variance

Scale	Institution	N	\bar{x}	Ss	t	p
Collaboration with Colleagues	Formal	155	4.251	.632	-.804	.33
	Private	15	4.386	.486		
Institutional Development	Formal	155	4.018	.620	-1.787	.02*
	Private	15	4.311	.407		
Professional Development	Formal	155	4.357	.532	-.467	.59
	Private	15	4.424	.443		

After the independent T-test done to compare the research group according to formal and private educational institutions, a statistically significant difference was determined in the “Institutional Development” dimension ($t = 1.787$; $p = .02$). The physical education teachers working in private educational institutions presented more positive opinions when compared to the physical education teachers working in formal educational institutions. No significant difference could be found in the “Collaboration with Colleagues” and “Professional Development” dimensions.

Table 2. T-test result of research group according to gender variance

Scale	Institution	N	\bar{x}	Ss	t	p
Collaboration with Colleagues	(a) Male	131	4.262	.624	-.036	.97
	(b) Female	39	4.266	.617		

Scale	Institution	N	\bar{x}	Ss	t	p
Institutional Development	(a) Male	131	4.030	.637	-.545	.58
	(b) Female	39	4.091	.505		
Professional Development	(a) Male	131	4.364	.545	.031	.97
	(b) Female	39	4.361	.456		

After the independent T-test done to compare the research group according to males and females, a statistically significant difference was not determined.

Table 3. T-test result of research group according to educational status variance

Scale	Educational Status	N	\bar{x}	Ss	t	p
Collaboration with Colleagues	(a) License	156	4.251	.611	-.858	.39
	(b) Master	14	4.400	.731		
Institutional Development	(a) License	156	4.033	.618	-.783	.43
	(b) Master	14	4.166	.494		
Professional Development	(a) License	156	4.353	.518	-.869	.38
	(b) Master	14	4.480	.599		

After the independent T-test done to compare the research group according to educational levels, a statistically significant difference could not be found.

Table 4. ANOVA test results of research group according to age variance

Scale	Age	N	\bar{x}	Ss	F	p	Difference (LSD)
Collaboration with Colleagues	(a) 21-30	67	4.188	.601	2.886	.05*	a-c, b-c
	(b) 31-40	86	4.258	.654			
	(c) 41 and over	17	4.588	.409			
Institutional Development	(a) 21-30	67	4.263	.565	1.020	.36	-
	(b) 31-40	86	3.973	.634			
	(c) 41 and over	17	4.071	.640			
Professional Development	(a) 21-30	67	4.189	.533	2.891	.05*	a-c
	(b) 31-40	86	4.044	.529			
	(c) 41 and over	17	4.272	.391			

In the scope of the study, as a result of the one-way variance analysis made to determine whether leadership roles are equal according to the group age variance,

a statistically significant difference was found among the age groups in the “Collaboration with Colleagues” and “Professional Development” dimensions. In order to determine which age group is the reason for this difference, LSD test results were analyzed. In the “Collaboration with Colleagues” dimension, a significant difference was found among all the age groups ($F=2.886$; $p=.05$). The physical education teachers in the age group of 21–30 and 31–40 presented lower opinions in comparison with the physical education teachers at the age of 41 and over. In the “Professional Development” dimension, a significant difference was determined between the age group of 21–30 and 41 and over ($F=2.891$; $p=.05$). The physical education teachers in the age group of 21–30 presented lower opinions in comparison with the physical education teachers at the age of 41 and over. In the “Institutional Development” dimension, a significant difference among groups was determined ($F=1.020$; $p=.36$).

Table 5. ANOVA test results of research group according to professional service time variance

Scale	Service Time	N	\bar{x}	F	p
Collaboration with Colleagues	(a) 0–5	65	4.273	1.598	.17
	(b) 6–10	60	4.210		
	(c) 11–15	20	4.080		
	(d) 16–20	18	4.488		
	(e) 21 and over	7	4.571		
Institutional Development	(a) 0–5	65	4.037	1.124	.34
	(b) 6–10	60	4.013		
	(c) 11–15	20	3.894		
	(d) 16–20	18	4.271		
	(e) 21 and over	7	4.222		
Professional Development	(a) 0–5	65	4.318	1.051	.38
	(b) 6–10	60	4.354		
	(c) 11–15	20	4.295		
	(d) 16–20	18	4.555		
	(e) 21 and over	7	4.558		

In the scope of the study, as a result of the one-way variance analysis done to determine whether leadership role perceptions are equal according to professional service time variance, no significant difference could be found.

4. Discussion and Results

A statistically significant difference was found in the “Institutional Development” dimension according to the *school type* variance of the research group (Table 1). The physical education teachers working in private educational institutions presented more positive opinions when compared to the physical education teachers working in formal educational institutions in the “Institutional Development” dimension ($X_{\text{private}} = 4.311$; $X_{\text{formal}} = 4.018$). No significant difference was found in the “Collaboration with Colleagues” and “Professional Development” dimensions. The physical education teachers working in formal and private educational institutions have the same education, namely undergraduate. However, it is thought that the reason for this difference is the changes in management and institutional assessments in terms of institutional development. In private educational institutions, administrative structure and assessment could focus on flexibility and efficiency more. In the study done by Beycioğlu (2009), it is stated that institutional development is considered more important in private primary schools. In addition, the participants working in private primary schools presented their opinions with a higher arithmetic average when compared to the participants working in formal primary schools in terms of both expectations and perceptions.

No significant difference was found according to *gender variance* of the research group (Table 2). When the literature is evaluated, in the study done by Güllü and Arslan (2009), it was determined that there is not any significant difference among teaching styles according to physical education teachers’ gender. In the study done by Atar and Özbek (2009), no significant difference was found in terms of gender variance. Reason (2006), in his study on head masters’ harmony for teacher leadership and transformist and subscriber leadership approaches, did not find any relation between teacher leadership training and transformist and subscriber leadership in terms of gender variance.

No significant difference was found according to the *educational status* of the research group (Table 3). In the study done by Buyrukcu (2007), according to the educational status variance, while there is a significant difference among the ideas the “maintaining teaching time” dimension, there could not be found a significant difference in other dimensions. In the study by Güllü and Arslan (2009), it was concluded that there is not a significant difference among leadership styles of physical education teachers according to their educational status.

A statistically significant difference was found in the *age variance* of the research group in the “Collaboration with Colleagues” and “Professional Development” dimensions (Table 4). In the “Institutional Development dimension, no significant

difference could be determined among the groups ($F=1.020$; $p=.36$). The reason for this could be interpreted as the fact that as physical education teachers get older, they are more open to various activity richness and leadership roles in accordance with experience. In his research “The Investigation into the Relationship between Leadership Behaviors of Pre-school Teachers and Personal Characteristics according to Various Variances”, Akçadağ (2008) concluded that the teacher’s leadership perceptions do not change according to the age variance.

In the scope of the research, no statistically significant difference was found in the group according to the professional service time variance (Table 5). In the study by Seçkel (2005), it was concluded that there is not a significant difference among teaching styles of music teachers according to their service years. In their study, Güllü and Arslan (2009) stated that there is not a statistically significant difference among teaching styles of physical education teachers according to their service years. These results show similarities with the results of the research. In the research by Şen (2011), it was determined that students make the teacher’s leadership skills statistically different according to their professional seniority.

The above findings show that teachers’ leadership roles and perceptions, especially physical education teachers, are important while establishing an efficient educational institution. Not only teachers’ leadership behaviors are of capital importance but also the leadership behaviors of managers and other staff are necessary. In this case, the environment in educational institutions should be established in which physical education teachers could display their leadership behaviors. In educational institutions, they should be made to create team spirit and communication network with other branch teachers and managers. By giving necessary pre-service and in-service education to physical education teachers, they should be made more interrogator, active and dynamic. As physical education teachers are seen as role models by students, school management should take measures to increase leadership behaviors. Also, physical education teachers should be educated in displaying many more leadership behaviors in class management during their learning process.

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***I was expecting her to be a fanatic Catholic,
but she was not***
**How International Exchange Programmes
Reduce Prejudice**

Abstract

The text deals with the question of the influence of international exchange programmes on reducing ethnic prejudices in their participants. Apart from a brief introduction into the issue of reducing prejudice, it comprises 392 free responses of Czech respondents, predominantly students, who have filled out an online survey as part of the project *Intergroup Attitudes and Intergroup Contact in Central Europe*. The participants gave accounts of their real contacts with Polish people, oftentimes within the framework of international exchange programmes, Erasmus in particular. Based on the comparison of the results of the qualitative analysis of the statements with the conditions of successful reduction of prejudices, one can suggest that international exchange programmes should have a positive influence on reducing negative ethnic stereotypes and prejudices among their participants.

Keywords: *international exchange programmes, Lifelong Learning Programmes, Erasmus generation, prejudice reduction, qualitative analyses, students, Czechs, Poles.*

Introduction

Prejudice is a type of attitude affecting individuals as well as communities. Prejudice manifests itself in a fixed attitude used by an individual when judging others on the basis of some arbitrary attribute possessed by the target (Hayes, 1996,

pp. 119, 147). According to its definition, prejudice can be either negative or positive in evaluative terms, but when talking about ethnic prejudice most authors write about a negative attitude (Reber, 1995, p. 590). As based on negative traits assumed to be uniformly displayed by all members of a group, prejudice is irrational and its emotional background makes it stable and resistant to change.

Ethnic prejudices are closely associated with stereotyping. A group's name is connected with an abstract prototype or a set of features that are considered, according to social teaching among others, to be possessed by the group as a whole. When a person meets a stranger the stereotypes are diminishing the resulting anxiousness by providing some information about him or her even though race and ethnicity are thought to trigger stereotyping in almost every case (Výrost, Slameník, 2008, pp. 363–364).

This text is devoted to the issue of reducing negative stereotypes and prejudice in the actual conditions of international exchange programmes, Erasmus in particular. It is based on the responses to one open question a part of a survey distributed within the *Intergroup Attitudes and Intergroup Contact in Central Europe* project conducted at the Institute of Psychology, Academy of Science of the Czech Republic.

The aim of this text is to show why and how exchange programmes, like Erasmus, can influence the reduction of negative ethnic stereotypes and prejudice in their participants. In order to do so I will 1. Present a brief introduction into the issue of reducing prejudice; 2. Demonstrate a qualitative analysis of the participants' responses and its results; 3. Summarize the results of such an analysis with reference to the theory being presented and within the basic socio-cultural context of statements and comments presented.

Modern approaches to the conditions of reducing prejudice

Prejudice is explained in many ways; according to Wittig and Grant-Thompson, who summarized theories of prejudice and models of prejudice reduction, among those ways are evolutionary perspectives, personality/individual difference approaches, theories of group identity, and various social cognitive approaches (Wittig, Grant-Thompson, 1998, pp. 796–797).

Principles of reducing prejudice were, at the earliest stage, formulated by Gordon Allport in 1954 in his work *The Nature of Prejudice*. His Contact Hypothesis emphasizes the social situation, targets individual prejudicial attitude change and finally proposes several conditions for reducing prejudice and enhancing tolerance.

Contact Hypothesis became one of the most long-lived and researched principles of reducing prejudice (Wittig, Grand-Thompson, 1998, p. 795).

Inasmuch as different authors have focused on different variables, they have developed different versions of the contact theory. As a result, more than 50 different mediating variables have been suggested by different contact theorists to specify the conditions for the positive effects of contact (Forbes, 2004, p. 74). Yet, many authors still work with the “original” five conditions, out of which four were suggested by Allport in 1954 and one was added in 1978 by Cook. The views of Nicky Hayes are briefly presented here, including her declaration of taking all the psychological evidence together while suggesting a list of five conditions of reducing prejudice. Those five main conditions, which need to be present in order to reduce prejudice and which were mentioned in her popular academic textbook *Principles of Social Psychology* (1996), are as follows:

1. The participants need to have an equal status.

Visible achievement by members of a minority group and equal relationship between members of dominant and minority groups create new data and attitudes are often revised.

2. There must be a potential for personal acquaintance.

It must be possible for an individual to get to know the members of the other group on a personal level. However, it does not mean that contact alone is enough to reduce prejudice. Simply putting two conflicting groups in contact with one another can have the effect of actually reinforcing the prejudice, rather than reducing it.

3. There must be contact with non-stereotypical individuals.

It is harder for a prejudiced individual to maintain stereotyping when they are continually faced with members of the stereotyped group who do not fit in the stereotype; thus, contact with non-stereotypical others can have the effect of reducing prejudice, as it forces the individual to deal with the others on a human, personal basis.

4. There must be social support for contact between groups.

If the surrounding social environment favours inter-group contact and equal, fair treatment, prejudice is more likely to be reduced.

5. There should be some occasion for co-operative effort.

Joint efforts serve to widen social boundaries; members of the other group for a while become *us* instead *them*. Co-operative effort, breaking down this distinction (which is the major factor in determining prejudice), is a powerful tool in reducing prejudiced attitudes (Hayes, 1996, pp. 125–127).

Methods

Project *Intergroup Attitudes and Intergroup Contact in Central Europe* is focused on relations between the Czech Republic and its four neighbours: Austria, Germany, the Slovak Republic and Poland. The main data collection method used was an online survey comprising a moderate amount of attitude and evaluation scales and one open question: *To start off, try to remember a situation where you came into contact with a Pole, whether it was during your visit abroad or here in the Czech Republic. How did the person act in this concrete situation? How did you act? Please write it down into the empty space*¹. Question put in such a non-suggesting manner triggered immensely valuable free responses. Part of the received statements was naturally very brief or carrying no data of value but mostly they were so substantial and altogether showing such a big variety of information that their potential enabled (and enables) a detailed quantitative content analysis of the statements in all pairs of neighbours, as well as various qualitative analyses based on several topics from the respondents' statements (e.g. Kouřilová, Hřebíčková, 2011, Petrjánošová, 2012, Leix, 2012).

For the purpose of analysis devoted to the subject of reducing prejudice I focused on the bulk of statements by Czechs regarding Polish people. While both Czechs and Poles expressed their enthusiasm in regard to their contact with each other during the exchange programmes, the Polish respondents did not exhibit almost any negative stereotypes and prejudice towards Czech people. This is indubitably related to the continuing exceptional popularity of the Czech Republic in Poland, unbeknownst to most Czech people; I refer here to the countrywide survey results of the public opinion (Omyła-Rudzka, 2012). In contrast, the statements of the Czechs exposed the existence of clear, predominantly negative stereotypes and prejudice towards the Poles and thus establish more suitable ground for researching ways of reducing them².

The researched material consisted of 392 free responses of the participants who filled the survey forms sent to the Silesian University of Opava. One can thus assume that they were mostly students, which is coincidentally also implied by

¹ Version for the Czech participants. Within the project I work primarily with the free statements – answers to this open question – of the pair Czechs and Poles commenting on each other.

² Some of them are presented in this study; more of them are to be seen in the text „*Pepiki*” i „*Pšonci*”: *co u siebie wzajemnie lubią, co ich zaskakuje, czego nie lubią, a co wywołuje ich uśmiech?* (Leix, in press), containing more extensive qualitative analyses of both Czech and Polish respondents' statements from the same project.

their statements. The respondents declared to be between 18 and 49 years of age with the major part comprising 20–22, primarily women.

I refrained from using a computer for the purposes of the analysis. First of all, I did not want to be influenced by the specific software authors' predispositions nor did I want to distance myself from the data; secondly, given the brevity of the responses and long-time experience working with texts, I made do only with paper and pencil (Weitzman, 2003, p. 331, Gavora, 2006, p. 152). I went through sheets of the participants' statements with a pencil looking for and marking the items containing anything related to the relationships during the exchange programmes and to the prejudice reduction, which I registered during previous analyses (e.g. Leix 2011, 2012, in press). After second reading of all 392 statements, concrete examples started to recur; after another few readings I received a few sets of statements grouped according to the particular wider topics or categories. (Agar, 1980, p. 104; Gavora, 2006, p. 129). Analytical procedures similar to the one described above, in which there is no predetermined exact protocol and the way of analysing is created individually are widespread among the researchers working with texts (Peräkylä, 2010, p. 870).

In the following part, due to limited space available, I will present only a group of the most frequently represented shorthand topics/categories related to the theory of reducing prejudice and comment on each of them very briefly. I will use 1 to 4 of the original statements or their parts to illustrate every topic presented. Statements are translated from Czech and carry their file identification number, as well as the basic information about their authors (age, sex).

Findings

Positive findings made during real contact

When I was at an exchange stay in Austria I had a Polish roommate. He was quiet, polite, he helped me anytime possible, we chatted. We had a good relation. (235: female, 22)

Most often I meet Poles in a school environment. In those circumstances, they seemed to be very hard-working and highly motivated to achieve the best results possible. During personal contact I found them to be friendly, polite and very proud. (251: f, 23)

It was during an exchange stay of Polish students in the Czech Republic. I had personal contact with them at some disco in Opava. (...) After some time I decided to talk to those Polish boys so I could practise my very passive knowledge of the Polish language.

I also brought my female friends along to meet them, and they had nothing against it. They were very nice, friendly and they treated my female friends with courtesy. (52: f, 21)

The above citations illustrate the positive experience of Czech students when dealing with Polish students. Contact was made in different contexts – in dormitories, at school, at a disco.

There are other items included in my set of statements that give account of different types of exchange programmes as well:

I had the opportunity of being a part of an exchange programme together with a choir from Poland. They accommodated us very gladly in their own rooms, during breakfast we had a vivid discussion; they were very helpful. After one of our joint performances, and after bash and soiree which followed that concert, we got on our coach and some of our Polish hosts followed us in their cars. Our coach broke down on the road. One Polish man called a lot of his friends and relatives and during half an hour, another group of 6 cars arrived (it was after 3 a.m.) and we were safely and comfortably transported to our hosts' places. (94: f, 23)

The next category is likewise focusing on positive experiences of young Czechs in regard to Poles, however this time they contain an explicitly expressed surprise related to positive characteristics of the latter.

Positive findings made during actual contact – even surprise

I met a Polish student at our faculty where he was studying the same programme as me. I was surprised at his gallantness and courtesy towards female students, such as letting them go first through a door or opening it for them. I have never witnessed such a behaviour in any of my Czech male friends. (310: f, 22)

I had the opportunity of visiting their school, where they treated us really great. It was during an event at primary school in which all parents of the Polish students were involved. Their willingness to support financially all of the programmes took us by surprise. Such an attitude is unlikely in our country. (196: f, 20)

Because our school allows for exchange stays with a Polish university, two Polish students became our schoolmates. I was surprised what a great sense of humour they had. (128: f, 20)

There are many similar statements made by the respondents relating to various types of exchange programmes (in this case programmes between universities

and between primary schools). I have chosen the responses that amply illustrate the point of such findings being both inter-gender and intergenerational; a female student is amazed by the courtesy of Polish students (which she has never experienced from her Czech friends), another student is pleasantly surprised by the great sense of humour of his Polish schoolmates and a Czech parent compares the willingness of Polish parents to co-finance a children programme to the expected hesitancy of his countrymen.

Regardless of the unambiguous influence of these findings on the attitudes towards the given nationality, the source of the portrayed surprise remains a question. Does it stem only from the objectively great amount of positive characteristics of the said Poles or is it partly caused by the Czech respondents' prejudice towards them as well? Basing the conclusion on my work up to this point with the Czech respondents' statements, including the possibility of comparison with the statements of respondents from other countries, I think that both reasons might have contributed.

In the following part we will find explicitly expressed stereotypes and prejudice of the Czech respondents towards the Poles.

Actual contact vs. stereotypes and prejudice

One Polish girl, my girlfriend's roommate, had been studying a movie study programme in Prague. She was communicative and friendly. I was afraid she would change her friendly attitude towards us once she learned of our sexual orientation because Poles are very conservative in this matter. She did not, not even a bit. Before she went back home we invited her to see Petřín [nice hill and view point in Prague]. We became friends. (215: f, 25)

In this statement (also being a source for the paraphrased title of this text) the respondent directly declares her fears of expected behaviour of the Polish student based on one of the most deep-rooted Czech stereotypes related to the Polish. The expected reaction did not occur and the situation ended up in friendship.

The next response is by a Czech student who deals with the same stereotype although, based on multiple encounters, he does realize the limit of the "Polish believer" stereotype:

When talking about Poles and their faith, piety will come to everyone's mind; it is a religious nation. But as far as the younger generation is concerned, I had the chance to discuss it with them and the actual situation is that most of them are non-believers, going to church as a tradition or out of habit. (269: m, 23)

The values of the following statement within the analysis lies, among other reasons, in the fact that it points out the prejudice on both of the communicating sides, albeit the existence of “pseudo-truths” and “mistaken judgments” can be revealed during the communication process.

When I was studying in Poland, most Poles were very friendly and they were interested in me and in the Czech Republic. Many times, we had an opportunity to shatter common myths and explain mistaken judgements we had about each other. (...) There was no grudge or spite between us. Rather, we used to make fun of our history and of our countries' past. They even crowned me to be the Czech king during a student party. They are like us. (236: m, 22).

It is of note that only students of adequate education are able to make fun of history in this way. Young people lacking the knowledge would not know of the countries' identical rulers and of periods of close cooperation in the past; they will be by and large influenced by the experiences of their parents and grandparents (the Second World War and especially a number of territorial conflicts) which are a source of negative attitudes in both countries.

They are the same as us

Accounts of contact with a citizen of a foreign country often end up with a claim that *they* are virtually like *us*, as did statement 236 above. I will present a few more:

I met Poles during international projects organized by my high school. We visited their school and they visited ours. They acted in the same way as we did, we did not have any problem with them, and except for the language there was no difference between us. (248: f, 19)

During my Erasmus study stay in Germany I spent most of the time with Poles, they created a strong group of students, they were very friendly, helpful and national pride radiated from them. In this circle, I felt as among “us”, as if it were among Czech friends. (234: f, 25)

In descriptions of this type the respondents give account of situations where direct contact with a foreigner resulted in finding that they are “people like us”; *they* are getting closer to *us* and thus a strong determinant of the prejudice weakens.

Opportunity for cooperation

I was a part of a Czech-Polish project, Prevention of Pathologies, which took place in Poland. During the week-long stay I had the chance to experience my neighbours' behaviour, their culture, habits and their nature. I was grateful to the Polish citizens and students for having nothing against presenting their culture or showing their city to me. (...) We were all tolerant towards each other, we did not mind talking to each other, having to help each other the whole week, studying or just staying together almost daily. During this programme we completed a medical course where Czechs and Poles were in one group and we had to pull together. Poles made a very nice impression on me and I would not hesitate to say that the feeling was mutual. (386: f, 19)

“We had to pull together” explains the condition of “opportunity to cooperation” with no need for further explanation.

Study versus work – a different mind-set

In the wake of the hypothesis of the positive influence of the Lifelong Learning Programmes on the reduction of prejudice in their participants come the statements via which the Czech respondents compare their experiences concerning the Poles, both in the context of student and work visits. The overwhelming majority of utterances suggest a uniform tendency towards considering the school environment to be the one connected with more positive experiences:

A few different experiences. Both bad and good. Mainly abroad. A good one: younger generation, in Slovenia – the Erasmus/Socrates programme: open and friendly communication; very good behaviour; similar way of thinking and understanding reality; good language skills. Bad one: older generation, in Great Britain – my study stay combined with part-time job: shame, aggressive behaviour with signs of lower intellect. (135: f, 23)

Also the above-cited statement, 215, by a girl who was positively surprised by a Polish student, continues with these notes about other Poles:

A lot of Poles I met in Norway, where we were working on farms, were annoying, stealing stuff, trying to avoid work or making shady deals, not to mention making sexual allusions. When I told them I didn't want to be in contact with them they didn't accept it. (215: f, 25)

Conclusion

International exchange programmes seem to fulfil conditions for reducing negative stereotypes and prejudice. Strong social support for contact between groups, equal status for all participants and creating potential for personal acquaintance are among the very core ideas of international exchange programmes like Erasmus. Qualitative analysis of the free statements from Czechs verified it as well as showed concrete examples of co-operative effort and contact with non-stereotypical individuals. As a result of real contact, Czech respondents describe their wonder (sometimes even amazement) at the positive characteristics they discovered in Poles. Comparing Poles with themselves, they sometimes even conclude, that *they* are, in fact, the same as *us*. Additionally, according to the respondents' statements, the educational, cultural and sport international exchange programmes are predominantly better for the development of relationships than work stays.

By discussing the relationship between international exchange programmes and ethnic stereotypes and prejudice, the paper contributes to the very up-to-date but still under-represented topic in social sciences and humanities. The results of this study – qualitative analysis of the responses obtained in one region of the country – are not sufficient for producing any generalisation. However, they are consistent with the results of quantitative-oriented studies, according to which programmes such as Erasmus offer – next to unsuspected teaching and learning opportunities – social learning and the elimination of prejudice and stereotypes (e.g. Sebauer, 2003).

In the specific case of the relationship of Czechs towards Poles, the effect of reducing prejudice, which is connected with participation in international exchange programmes, could seem like highly desirable reduction of the negative impact of Czech mass-media which have been popularizing negative stereotypes and prejudice of Poland and its people for quite some time now³. Mass-media

³ What did the popular Czech stereotypes of Poles look like at the end of the eighties and nineties of the twentieth century can be seen in Ivo Bystřičan's *Zanussiho nejen italská pračka*. The author of this text (being a Czech himself) also confers that Czechs are not interested in Poland, except for easily popularised scandals (Nový Prostor, 1997, no. 293, p. 7. Full issue, dedicated to "Unknown neighbour", to see at <http://www.novyprostor.cz/pdf/293.pdf>). For the following two decades the situation was similar; even serious magazines openly used popular stereotypes when writing about Poland – for example the cover of the *Respekt*, to see at <https://plus.google.com/photos/114588478345569499171/albums/5739389905164788657/5739389902888800594>. Situation improved somewhat during and after the UEFA EURO 2012; Czech fans and correspondents were very surprised by the warm approach of Polish fans, and Czech mass-media published many texts re-discovering the long-neglected neighbour.

are known for a huge influence on creating stereotypes and prejudice – but the influence is the greater the lower the education of its audience is. The authors of the analysed responses belong to the so-called *Erasmus generation*, which is being referred to as the best-educated generation that will be deciding about our world's future (e.g. Benhold, 2005).

Lifelong Learning Programmes like Erasmus could admittedly face many critics, but it seems they offer solid grounds that can help reduce ethnic prejudice among their participants.

But while they offer good conditions, the rest depends on the students themselves.

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Gifted Students' Perceptions of Scientists

Abstract

Despite a high number of studies on students' images of scientists, there is a lack of research on gifted students' perceptions of scientists in the research literature. The aim of this study was to investigate gifted students' perceptions of scientists and stereotypical images of scientists. The participants were 42 gifted students. The Draw-a-Scientist Test (DAST) was used to collect data. The findings demonstrated that gifted students had a variety of stereotypical images of scientists. The findings also showed that students' drawings included fewer indicators of the stereotypic model on average. The drawings of fourth-grade students included more elements when compared to fifth-grade students' drawings. As a result, it was found that there are some findings different from previous research. Considering the findings obtained from this study, this study has provided findings for teachers and science educators.

Keywords: *gifted students, scientist, perception of scientist*

Introduction

Over the years, perceptions of scientists have become one of the most domains of research in science education. The research studies in this domain have focused on students' perceptions of scientists. Many studies have been conducted to discern what those perceptions are (e. g., Kaya, Ocal, & Dogan, 2008; Barman, 1999; Buldu, 2006; Christidou, Hatzinikita, & Samaras, 2010; Finson, Beaver, & Cramond, 1995; Fung, 2002; Koren & Bar, 2009; Losh, Wilke, & Pop, 2008; Medina-Jerez, Middleton, & Orihuela-Rabaza, 2010; Newton & Newton, 1992; Newton & Newton, 1998; Song & Kim, 1999; Turkmen, 2008). This type of research was important since the

research studies (Chambers, 1983; Schibeci & Sorenson, 1983; Finson et al., 1995) have revealed that students have a certain stereotypical image of scientists. Several researchers (Boylan et al., 1992) believe that perceptions about scientists influence students' interest, attitudes toward learning science and having science-related careers in the future. Hence, assessing and revealing students' perceptions about scientists have become important for science educators.

The findings of the studies investigating students' perceptions of scientists (Buldu, 2006; Finson et al., 1995; Fung, 20002; She, 1998) indicated that students' perceptions of scientists greatly influence the number of students interested in studying science and choosing a career related to science. In addition, researchers reported that students' perceptions about the scientist affect their willingness to become a scientist (e.g., Finson et al., 1995). In general, the findings of previous research (Buldu, 2006; Fung, 20002; She, 1998) revealed that students perceived scientists as males wearing white lab coats and glasses, working in a laboratory equipped with test tubes, flasks, books.

A number of researchers studying students' perceptions of scientists (Newton & Newton, 1992) reported that students began forming stereotypical images of scientists at elementary school (e. g., Losh et al., 2008; Medina-Jerez et al., 2010). These stereotypical images and perceptions about scientists may differ relating to age, gender, culture, socioeconomic level, and also with respect to the students' education level (Medina-Jerez et al., 2010). Although there is a relatively high number of studies on elementary, middle, and high school students, there is a lack of research on gifted students' perceptions of scientists in the available literature.

Gifted students have different cognitive, affective and physical, intuitive and social characteristics compared to their peers. Because of this, it is generally accepted that gifted students are academically strong and are a group of students from whom future scientists can emerge (Melber, 2003). In order to meet gifted students' special learning needs, science educators need a better understanding of the perceptions held by this group of students. If we know the way in which students depict and view a scientist, then it is reasonable to contribute to science education practices for students. Thus, a better understanding of the nature of gifted students might inform science educators about how science curricula contribute to students' stereotypical images of scientists. With this in mind, this study investigated gifted students' perceptions of scientists. The research questions of this study were as follows:

- How do gifted students perceive scientists?
- What are the stereotypical images of scientists among gifted students?

Method

Participants

For this study, a convenience sample of gifted students was used. A total of 42 gifted students who enrolled in a Scientific and Art Center were invited to participate in the study. Participants included 12 fifth-graders (8 male, 4 female) and 30 fourth-graders (15 male, 15 female) from the Scientific and Art Center in Ankara, the capital city of Turkey. The Scientific and Art Center is a typical government funded elementary school and accepts only gifted students. Of the students, 23 students were male and 19 were female. Participants were between 10 and 11 years-old.

Data Collection

A Draw-a-scientist-test (DAST), which was developed by Chambers (1983), was used to obtain students' images of scientists. It asks students to simply reflect their impressions about scientists in their drawings. It takes very little time to administer and has been used to reveal and assess perceptions of scientists in numerous studies (Chambers, 1983; Finson et al., 1995; Kaya et al., 2008; Monhardt, 2003; Newton & Newton, 1992). In this study, students were asked to draw their own illustrations of their image of scientists. A worksheet featuring a large framed area was provided and it asked to draw "a scientist at work". Students were also asked to clarify their drawings through their own sentences. Each student completed his/her drawing in approximately 25–30 minutes. There was no time limit. The DAST was administered by the science teacher in one of his lesson. Data were collected in the spring semester of the 2009 school year.

Data Analysis

A control list for the DAST instrument, which was originally constructed by Chambers (1983), was used to analyze the data obtained from the students' drawings. Accordingly, each student's drawings were firstly analyzed according to whether or not the students drew specific indicators in his/her drawings, such as a lab coat. In addition, both in one of the previous studies (Kaya et al., 2008) and in this study, a few indicators, such as "tie" and "garden," which actually do not exist in the control list were ascertained. As for the data analysis, data were firstly analyzed by one of the researchers. Then, other researcher separately analyzed the students' drawings. We used the rater codes for each indicator with either 1 or 0 points depending on the presence or absence of the examined feature in the checklist. Differences were discussed until we reached consensus. The correlation

for inter-rater-reliability was found .93. The statistical package for social science software (SPSS) was used to calculate the descriptive statistics analyses.

Results

The findings pertaining to the analysis of the students' drawings are shown in Figure 1 presenting the distribution of the stereotypical indicators by grade level and gender. The framework of analysis involves four distinct axes: a) stereotype indicators, b) researchers' gender, c) alternative views, d) researchers' activities. Each of these axes is presented along with their particular dimensions. Each drawing involved 2.92 stereotypic indicators on average, the boys' drawings being slightly more stereotypical than the girls' ones (3.42 and 2.42 average indicators per drawing). The most popular indicators included by the students were a lab coat, facial hair, and eyeglasses. In addition, various indicators, such as being bald, having a beard or mustache, and wearing a tie, were slightly present in the drawings. Research symbols (e.g., test tube, beaker, table, cupboard, chemicals, and other laboratory tools), technology symbols (e.g., computer and cell phone) and relevant captions (names of the renowned scientists, headlines – earthquake, electricity-, and mathematical formulas) are also found in the students' drawings.

The findings in Figure 1 show that 61.9% of the students imagined a scientist who wears a lab coat, 30.9% of them drew a scientist with facial hair, and 21.4% of them drew a scientist with eyeglasses. Moreover, 9.5% of the students drew a bald scientist, 4.7% of the students drew a scientist with a mustache. Similarly, 4.7% of the students used a tie in their drawings. Interestingly, the drawings of fourth-grade students included more elements when compared to fifth-grade students' drawings. For example, while 63.33% of the fourth-grade students drew a scientist with a lab coat (e.g. in Figure 2), 58.33% of the fifth-grade students included a lab coat in their drawings. Furthermore, the majority of the students used research symbols (59.5%), knowledge symbols (14.2%), and technology symbols (54.7%), and relevant captions in their drawings, respectively.

Science the equipment drawn by the students in this study included research symbols (scientific instruments and laboratory equipment of all kinds) and knowledge symbols (principally books, filing cabinets), technology symbols (computers, robots), and captions (mathematics or chemical formulae, names of well-known scientists, e.g. Einstein). In detail, 59.5% of the students included research symbols (e.g., Figure 2), 14.2 % used knowledge symbols, 54.7% involved technology symbols (e. g., computer in Figure 3), and captions in their drawings. It should be noted

Figure 1. The descriptive statistic of the image of scientist with relevant frequencies and percentages

DAST indicators			Grade		Gender		
		Properties	4 N (%)	5 N (%)	Boys N (%)	Girls N (%)	Total N (%)
Stereotype indicators		Lab coat	19 (63.33)	7 (58.33)	15 (46.87)	11 (57.89)	26 (61.90)
		Eye glasses	8 (26.66)	1 (8.33)	2 (6.25)	6 (31.57)	9 (21.40)
		Facial hair	9 (30.00)	4 (33.33)	9 (28.12)	4 (21.05)	13 (30.9)
		Bald	0 (0.00)	4 (33.33)	0 (0.00)	4 (21.05)	4 (9.50)
		Beard	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
		Mustache	0 (0.00)	1 (8.33)	0 (0.00)	1 (5.26)	2 (4.70)
		Tie	0 (0.00)	1 (8.33)	0 (0.00)	1 (5.26)	2 (4.70)
		Research symbols	19 (63.33)	6 (50.00)	13 (40.62)	12 (63.15)	25 (59.5)
		Knowledge symbols	3 (10.00)	3 (24.99)	3 (9.37)	3 (9.37)	6 (14.20)
		Technology symbols	17 (56.66)	6 (50.00)	12 (37.50)	11 (57.89)	23 (54.70)
		Relevant captions	12 (40.00)	5 (41.66)	9 (28.12)	8 (42.10)	17 (40.40)
Researchers' gender		Male	23 (76.66)	9 (75.00)	20 (62.50)	12 (63.15)	32 (76.10)
		Female	5 (16.66)	2 (16.66)	1 (3.12)	6 (31.57)	7 (16.60)
		Male and Female	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
		Indeterminate	3 (10.00)	1 (8.33)	3 (9.37)	1 (5.26)	4 (9.50)
Alternative views		Indications of danger	0 (0.00)	1 (8.33)	1 (3.12)	0 (0.00)	1 (2.30)
		Light bulbs	3 (10.00)	2 (16.66)	5 (15.62)	0 (0.00)	5 (11.9)
		Indications of secrecy	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
		Laboratory	24 (80.00)	8 (66.66)	18 (56.25)	14 (73.68)	32 (76.1)
		House	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
		Garden	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
		Middle age/ elderly					
		Happy	4 (13.33)	2 (16.66)	4 (12.50)	2 (10.52)	6 (14.2)
		Sad	1 (3.33)	0 (0.00)	0 (0.00)	1 (5.26)	1 (2.3)
		Angry	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
		Thoughtful	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
		Crazy	11 (36.66)	6 (50.00)	12 (37.50)	5 (26.31)	17 (40.4)
		Indeterminate	13 (43.33)	5 (41.66)	7 (21.87)	11 (57.89)	18 (42.8)

DAST indicators			Grade		Gender		
		Properties	4 N (%)	5 N (%)	Boys N (%)	Girls N (%)	Total N (%)
Researchers' activities		Repairing/ manipulating tools	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
		Inventing and designing a new material	26 (86.66)	10 (83.33)	20 (62.50)	16 (84.21)	36 (85.7)
		Doing experi- ments	16 (53.33)	5 (41.66)	12 (37.50)	9 (47.36)	21 (50.0)
		Explaining and teaching a subject	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
		Doing observa- tion	1 (3.33)	1 (8.33)	1 (3.12)	1 (5.26)	2 (4.70)
		Other (nothing)	2 (6.66)	0 (0.00)	2 (6.25)	0 (0.00)	2 (4.70)

that more than one of these symbols was observed in some students' drawings. The findings also indicated that non-stereotypical features, such as monsters, paintings, and typewriters, were drawn as well.

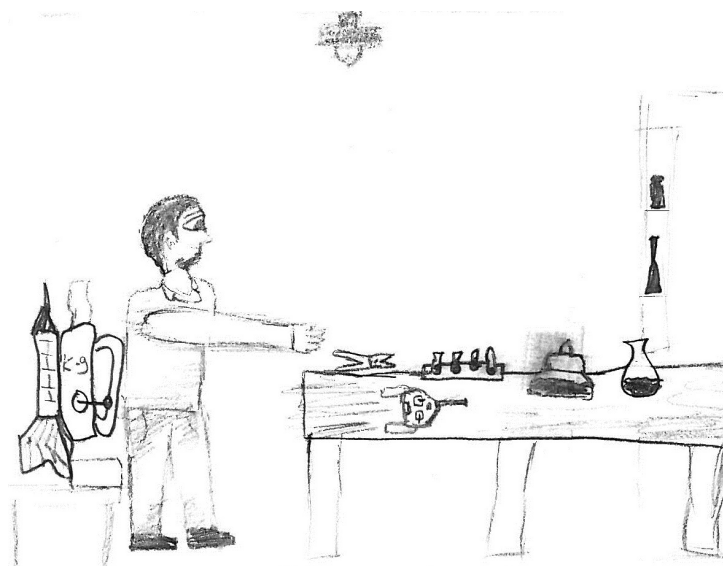
The findings related to the gender of the scientists showed that the majority of the students (76.1%) drew male scientists. However, a number of the students (16.6%) presented their scientists as female in the drawings. These findings demonstrate that there are strong preferences for male scientists. Regarding the presence of a female in the drawings, only 16.66% of the students in both grades drew a female scientist. Interestingly, our findings demonstrated that female scientists were drawn by female students. In a small proportion of the drawings, the gender of the scientists was not clear. The interesting finding here is that 31.57% of the female students drew scientists as female. It is important to note that only one of the male students drew a scientist as female.

The findings also revealed the students' alternative views about the scientists. The findings pertaining to the students' drawings associated with signs and symbols related to scientists demonstrated that a few the students did not include warning or privacy signs in their drawings. While only 1 student (2.3%) drew danger symbols in his drawings, 5 students (11.9%) drew light bulbs (cf. Figure 2). In terms of the research setting, the findings showed that researchers were most frequently depicted as working in a laboratory (as indicated in Figures 2 and 3). The majority

Figure 2. Researcher with a white coat, facial hair, research instruments (glassware), technology products (machine) and relevant captions (light bulb and stars)



Figure 3. Researcher with research instruments (tubes), technology products (jet engine) and light bulb



of the students (76.1%) drew a scientist in a laboratory. However, none of the drawings included both a house and a garden as places where scientists worked out. Furthermore, it was found that the majority of the female students (73.68%) used laboratory settings in their drawings that the boys did.

The drawings also included views of the personal characteristics of scientists. Nearly half of the students (40.4%) drew a scientist as crazy. In total, 6 students (14.2%) drew happy scientists. In addition, a small number of students (2.3%) also drew sad scientists. None of the students drew angry scientists. However, in some of drawings (42.8%) the personal characteristics of the scientists were not identified. The most common scientist type drawn in this study was that depicted as someone who tries to invent new materials/things (85.7%) and conducts experiments and tests (50%), and makes observations (4.7%). Interestingly, the majority of the students perceived a scientist as someone who tries to invent new material/things. On the other hand, a small proportion of students drew a scientist as someone who makes observations. Other stereotypical types, such as explaining a subject, or repairing tools, were not shown in the drawings. Finally, one of the interesting findings in this study regards the number of scientists. Table 1 illustrates the distribution of the numbers of scientists. 42 students drew scientists; most of the students (93.33%) drew only one scientist; and only one student drew one or more scientists (cf. Table 1).

Table 1. Number of children drawing scientists with relevant frequencies and percentages

	4	5	Boys	Girls	Total
One scientist	28 (93.33)	12 (100.00)	22 (96.33)	18 (96.33)	40 (93.33)
One or more scientist	1 (3.33)	0 (0.00)	1 (3.33)	0 (0.00)	1 (3.33)
No scientist	1 (3.33)	0 (0.00)	0 (0.00)	1 (3.33)	1 (3.33)

Discussion

Although many studies investigated students' perceptions of scientists (Kaya et al., 2008; Buldu, 2006; Chambers, 1983; Fung, 2002), gifted students' perceptions of scientists have been neglected. The purpose of the presented study was to investigate gifted students' perceptions of scientists. Overall, the findings obtained from this study demonstrated that gifted students had a variety of stereotypical images of scientists. The findings showed that the students' drawings included on

average fewer indicators of the stereotypical model. More than half of the students in this study drew scientists wearing a lab coat. This finding is consistent with the findings of previous research (Barman, 1999; Buldu, 2006; Chambers, 1983; Fung, 2002; Samaras, 2009). These findings suggest that the students perceive a scientist as someone who wears a lab coat. Another possible reason may be the impact of the textbooks, the mass media, and especially cartoons of scientists' images of scientists. Monhardt (2003) suggested that scientists presented in textbooks greatly influence what students believe about scientists (Monhardt, 2003).

The overall image of the depicted scientist in the presented study tends to be male. A low proportion of students included female scientists in their depictions. Interestingly, some girls drew a male scientist. This finding is important because it expresses the role of females in a given culture and/or male-biased presentation of scientists in the media. This finding is consistent with previous research findings (Buldu, 2006; Chambers, 1983; Finson, 2002; Losh et al., 2008; She, 1998; Turkmen, 2008). The reason might be that the students believe that scientific knowledge is predominantly constructed by male scientists, such as Einstein and Newton. In this study, the students typed the names of scientists, such as Einstein and Newton. The findings of previous research and this study reveal the need for presenting female scientists who could be role models for students.

The participants in the study drew scientists in laboratory settings. This finding is consistent with the findings of previous research (Barman, 1999; Buldu, 2006; Chambers, 1983; Kaya et al., 2008; Turkmen, 2008); however, inconsistent with those of Christidou et al. (2010), who found that research is predominantly performed in fieldwork. It can be said that, in general, students depicted a scientist as someone who works alone in a laboratory. This finding demonstrates that there is a need for teachers to emphasize that scientists can work together.

The students' drawings indicated that researchers are mostly represented primarily as those who conduct research and who try to invent a new material and secondarily as those who do experiments. The student's representations of scientists in such a way reveal a view which reflects scientific research. However, it should be noted that such a view is not unusual in the representations of scientists who are working in the field of social sciences. This finding shows that the social dimension of scientific research is missing in the students' representations of scientists. Our findings demonstrate that there is a need to point out the social aspect of scientific research.

Conclusion

This study showed that gifted students in fourth and fifth grades (10–11 years old) had a variety of stereotypical images of scientists and these images are more stereotypical in some respects and less stereotypical in others. The findings provide useful information for both science educators and the teachers of these students. In order to promote the image of scientists, teachers should employ a variety of activities in their lessons, including: visiting scientists who represent both social-related and science-related occupations, a scientist's visit in the classroom, presenting scientists' lives, organizing field trips that contain the works of scientists, giving details about scientists' work, working as a team in the classroom, and bringing more books to the classroom that are relevant stories of scientists. Each of these experiences would make a unique contribution to what perceptions students have of scientists.

It would be noteworthy to mention here that the media play an important role in shaping students' perceptions. Especially, the negative scientist characters, such as a 'mad scientist' or a 'man in a lab coat' in cartoons and TV programs, may cause the formation of negative image of scientists. Such an image could prevent students from becoming a scientist and having a career associated with science (Finson et al., 1995). There is a need to highlight that scientists could work on social topics.

While these findings provide valuable information about the perceptions of gifted students, they also offer an overall image that gifted children have about scientists and what scientists do. Considering the findings of this study, there is a need to highlight that science is a part of our daily life. Further research should investigate gifted students' perceptions of scientists and what factors affect students' images through a variety of data collection tools, including the DAST, interviews, and Likert-type questionnaires. Moreover, in order to help students to build an inclusive image of scientists, there is a need to conduct experimental studies.

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Mission Statement – a Component of the Strategic Management of University (on The Example of German Universities)

Abstract

Mission statement is an element of the strategic management, the basis for the strategic development of university. Mission statement provides orientation and increases the motivation of the members of university. The results of the research prove that the mission statement of universities must be developed in an open discussion with the participation of the members of university. The most popular commitments of the mission statement are equal rights and opportunities for men and women, internationality, unity of research and teaching, quality assurance, interdisciplinarity. Analysis of the content of mission statements which were formulated during the last years shows that they propose a partnership relationship between the administration of university and its members.

Keywords: *mission statement, strategic management, internationality, interdisciplinarity, orientation, motivation.*

1. Introduction

Mission statement development is a component of the strategic management of higher education institutions. It is necessary to distinguish mission from mission statement, the latter is just a written product of the former (Scott 2006). In the 1930s American universities began to define and publish mission statements in their catalogues. British, German and other European Universities have been

defining their mission statements since the 1990s to show their accountability to the public.

Today's mission statements are often based on the triad (the 20th-century) mission of university: teaching, research, and public service (Scott, 2006). The problem of mission statement is that only a very small number of the members of university take part in the process of its establishment and he thinks that in reality mission statement has little influence on the management of higher education institutions (Peeke, 1994).

The requirement for the accreditation of a higher education institution in Germany is that university must present documentation which concerns the management structures, mission statement and profile of university, study courses and defined quality goals and the system of quality management of education.

Mission statements of German higher education institutions contain goals and objectives of higher education, which are defined in the Laws for the Universities of the Federal States.

The mission statement of a higher education institution is defined as a normative goal, that is why it is a part of normative management (Zechlin, 2007).

Researchers (Kosmuetzky, 2010) distinguish the following functions of the mission statement of German university:

- provision of a basis for the objectives of university and the specific profile of the higher education institution;
- promotion of the strategic management and marketing of university;
- quality assurance in higher education.

The core elements of the mission statement are mission, vision and principles (Behm B. and Bertold Ch., 2011). "Mission statement should provide brief and clear information about the distinctive profile of university and the core tasks ("mission" – "What is our business?"), as well as the long-term development goals of the entire institution ("vision" – "What do we want to become?")". (Behm B. and Bertold Ch., 2011, p. 15).

Behm B. and Bertold Ch. (2011) formulated three main functions of the mission statement:

1. Orientation and steering. Mission statement must set guidelines for the subsequent strategic process.
2. Motivation. As a mission statement has a visionary character it should motivate institution members to identify with their institution.
3. Legitimization and promotion. Mission statement presents the profile and objectives of the institution to external shareholders.

They state that mission statement helps the university to formulate its strategy.

Behm B. (2011) asserts that the mission statements of German universities are very similar and they do not distinguish one higher education institution from another, in her opinion they must be developed on the basis of tradition, respond to the current situation and possibilities of university and contain a realistic vision. Mission statement must be developed in the process of open discussion with the participation of the members of the university. The university staff must understand the content of the mission statement and accept it, that it why it must be short and clear.

2. The aim of the research

The aim of the research is to determine how universities define themselves in order to be distinguished from other higher education institutions, to determine the functions and the main commitments of mission statements, to analyze the process of formulation of the mission statements of German universities and to find out the most preferable methods for the development of the mission statement.

3. Research Methods

The object of research is the mission statements of 30 German higher education institutions. The selection was made only from among those universities whose mission statements are publicly available.

The methodology applied in this study is the content analysis method of mission statements of German universities.

4. Results of the research

The sample consisted of the mission statements of 30 German higher education institutions. The structure and the forms of the mission statements are characterized by diversity because there are no official requirements concerning the structure content of a mission statement. The structure of 27% of the mission statements consists only of the fields of activity or text without any structural units, other 63% represent different combinations of such structural units as preamble, current situation.

Table 1. he structural units of the mission statements

Structural units	The number of examinees	Total number percentage
Preamble	5	17
Introduction	5	17
Mission	4	13
Current situation	1	3
Self-understanding	7	23
Principles	4	13
Goals	3	10
Values	2	6.7
Motto or slogan	4	13
Maximums	2	6.6
Vision	2	6.6
Aims and means	1	3.3
Corporate culture	1	3.3
Strengths	2	6.6
Mission statement only with the fields of activity	8	26.6

Among the whole number of universities, only 56% of the mission statements have dates of formulation and reformulation, which range from 2000 to 2012. Two of them were formulated in 2000 and updated in 2012 and 2010. There is information on 30% of the university websites about the process of mission statement formulation and in all these cases it was developed as a result of discussion in which the representatives of all groups of the university participated. There are 4 university websites which contain on-line discussions and give an opportunity to participate in the process of the formation of the mission statement and to express opinions about the existing mission statement.

Analysis of the content of the mission statements shows the following most popular commitments: equal rights and opportunities for men and women, internationality, unity of research and teaching, quality assurance, interdisciplinarity.

Table 2. Commitments of the universities

Commitments	The number of examinees	Total number percentage
Equal rights and opportunities for men and women	26	87
Internationality	25	83
Unity of research and teaching	23	77
Quality assurance	21	70
Interdisciplinarity	21	70
Development of the region	18	60
Responsibility towards society	16	53
Innovations	16	53
Partnership with the sector of economy	14	47
Knowledge transfer	14	47
Development of the personality of the students	14	47
Promotion of young researchers	13	43
Family-friendly university	13	43
Practical orientation of education	11	37
Support of the continuing education and development of the staff	13	43
Participatory management style when all of the members of the university are involved through representatives in the decision-making process	12	40
Lifelong education	11	37
Applied research	10	33
Connection with non-university research institutions	8	27
Preparation of the students for professional life	8	27
Cooperation and communication among colleagues and members of the university	8	27

The commitments which are very rare are effective use of the resources, the third party funds and their allocation according to performance criteria – 17%, suitable conditions for research, creation of modern infrastructure – 17%, raising of the third party funds for research projects – 7%, participation of the students in the research work – 17%, to preserve and defend freedom of research and teaching – 17%, autonomy of the higher education institution – 10%, open access to the education 7%, active fulfillment of duties by the members 7%, commitment to

and orientation on service when all the decisions must be aimed for the benefit of the members and partners of the university 10%, students as partners in the study process and dialogue between students and professors – 7%, promotion of a healthy lifestyle – 3%, help in the adaptation of international students – 13%, scholarships 3%, team-oriented learning – 3%, individual approach to teaching – 3%.

There is a very small percentage of the mission statements which describe and give guidelines about the management of the university. Among the whole number of universities 17% are committed to transparency in administration and decision-making, but 40% admit a participatory management style when all the members of the university are involved through representatives in the decision-making process and when internal-organization and decision-making processes of the university are based on participation, discourse, consensus, and transparency. At the same time, 3% of the mission statements assert responsibility of the administration of the university, 3% mention legal administrative barriers for research and 3% have intentions to provide suitable conditions for the development of management.

There are 47% of the universities which try to identify themselves in the mission statement with Germany, region, international or research orientation in order to distinguish themselves from other higher education institutions. For instance, 20% assert that they are internationally oriented universities, two of them connect regional and international orientation – internationally oriented university with a regional base and regionally based international university, 10% connect internationality and research and define themselves as a research university of international significance or internationally oriented university and center of research, a research university of international level. 10% of the universities distinguish themselves as cosmopolitan and other higher education institutions give the following definitions of themselves: a leading university in Germany, a modern university with a long-standing tradition, a research university, a comprehensive university striving for science and academic insight.

It is understandable that the mission statement is formulated, first of all, for the inner stakeholders of the university, such as students and the staff of the university and then for outside stakeholders, such as supporters and customers of the university – future students and their parents. In the content of 33% of the mission statements the addressee is defined as all the members of the university, students, researchers and lecturers and the administrative staff.

The functions of the mission statement are defined only in 27% and 17% formulate it as orientation for all the members of the university, policy framework which is aimed at formulation of the inner rules of the organization and basis for further development of the university. The function of the mission statement of

the University of Applied Sciences and Arts in Hannover is to formulate the profile of the university and assure quality management [19].

The mission of Potsdam University asserts that it must provide a basis for the identification of the members of the university, create the concentration of the forces on the stated goals and core values and define priorities [31].

Alice Salomon University of Applied Sciences, Berlin, defines the goal of the mission statement as the provision of a basis for the development of the strategic goals and measures with a high level of participation of the university members [25].

Discussion

The process of the development of the mission statement is characterized by broad discussions and participation of the university members. Higher education institutions use different methods of the organization of discussions on the content of the mission statement, e.g., in 2010 Alice Salomon University of Applied Sciences, Berlin, established a Worldcafe.

The mission statement of this university is focused on 10 fields of activity which were discussed at the Worldcafe. The most popular was the theme of «quality of learning and teaching». The students were even more active than the professors. The results of the discussion revealed and proved that it was necessary to conduct such discussions regularly according to their informative function concerning the implementation of the mission statement. All the members of the university have access to the discussion and its results on the Intranet. [1]

Regensburg University organized an electronic discussion platform in order to develop a mission statement. There were several directions of discussion: science in society; teaching, learning and research; relationship with each other; management, administration and quality assurance; location, region, internationality; infrastructure and central facilities. The Senate created a team which worked on the results of the discussion.

During three months, 2 266 participants registered at the forum and they expressed their opinions on 57 aspects. The number of the participants was 9% of all the staff and 61% of the participants were students [3]

In 2011, after a two-year development phase, the Senate of the University of Applied Sciences in Esslingen adopted a mission statement. Its content states that the mission statement was formulated, first of all, for inner use and for all the members of the university. That is why there was a discussion among 80 members of the university and on-line discussion on the website [2].

Ernst Moritz Arndt University in Greifswald adopted a mission statement in 2000 and updated it in 2012. A draft of the mission statement was sent by e-mail to all the members of the university and they could express their opinion by e-mail to the Senate within a month [5].

There are only 4 universities which conducted on-line discussions, which were held during 2010 and 2012. It can be considered as a positive tendency in the process of the development of mission statements, which will be more popular in the future.

The analysis of the structural units of the mission statements shows that their content is characterized by diversity and the universities prefer to divide the content of the mission statement into different structural units, which makes it easier to read and to understand the main ideas.

Almost 34% of the mission statements contain an introduction or preamble, where the addressee and the functions of the mission statement or the tradition of the university and current situation are defined. Only 13% of the mission statements contain principles on which the activity of the university is based, their number ranges from 4 to 12. Defining a motto or slogan, 13% of the universities try to formulate their most important quality, which really helps to distinguish one university from others, e.g., the motto of Hamburg University: «Gateway to the world of knowledge», Hannover University: «Shaping the future with knowledge».

The content of the mission statements looks like instructions and guidelines for the staff of the university and students. The most widespread commitments concern internationality, unity of research and teaching, interdisciplinarity, quality assurance, equal rights and opportunities for men and women and the development of the region. It means that most of the universities develop their strategy in these fields of activity and connect their future with research, which is of international significance and can be the basis for high quality education oriented on international standards. Besides internationality, universities try to contribute to the development of the region and perceive themselves as region-based universities, which is a positive tendency.

The mission statements look like guidelines for behavior not only for the staff but even for the students, e.g., «to act with responsibility in scientific, cultural and economic life» (George-August-University, Gottingen) [12].

The mission statements contain information about the relationships between the administration and the staff, e.g., Hannover University states «our staff is the root of our success, encourage personal and professional development» [10]. The mission statements of the universities which were formulated during the last years

propose a partnership relationship between the administration of the university and its members.

The members of the universities are understood as its main resources and as those who implement the principles and values expressed in the mission statement in everyday activity. Taking into account limited resources, the administration of the university understand that they can raise funds only if the staff jointly implement an elaborated strategy, but in turn they must motivate the members of the university to implement the mission statement and they recommend preferable conditions for doing research. Using these conditions the members of the university can participate in collaborative and individual projects raising funds for the university. The university and the staff must have partnership relationships, the personnel depend on the university, but the university admits that it also depends on the researchers and lecturers.

Conclusions

The results show that besides such functions as motivation of the institutional members, quality assurance, presentation of the profile of the university, promotion of the strategic management and marketing of the university, the mission statement has social and communicative functions. The social function of the mission statement is determined by the most popular commitments: equal rights and opportunities for women and men, development of the student's personality, responsibility towards society, family-friendly university. Family-friendliness is quite a new characteristic of the German universities, which becomes rather popular and provides the opportunity to the staff of the university and the students to make career and family compatible.

The communicative function is determined by the establishment of close links between the administration and the members of the university. Even the process of the formulation of the mission statement is aimed at establishment of communication between the management and the members of the university. The results of the research prove that the process of the development of the mission statement must be led by the university management, e.g., the Senate, but all of the groups of the university members must participate in this process. The most preferable method for the development of the mission statement is the combining of on-line discussions and forums with open discussions with the participation of the representatives of all the groups of the university staff. On-line discussion allows for direct participation of all the members of the

university including the students and it also makes the process transparent and clear to all the participants.

Broad participation of the staff in the process of the mission statement creation prevents it from being a set of normative goals developed by the administration of the university; instead, it is jointly established by the administration and the staff. That is why the university members and students have a feeling that they do not implement the decisions of the administration, but they implement a jointly elaborated strategy, they feel like creators of these goals, which is why their participation in the process of the elaboration of the mission statement increases their motivation. The mission statement establishes partnership relationships between the management and the members of the university.

The results of the research prove that the mission statement is a basis for the self-identification of the university because 47% of the universities identify themselves in the mission statement.

The results of the research indicate that mission statement provides a scale for internal and external evaluation and a basis for control. It defines the key guidelines for the measure of the performance of the university.

Mission statements of certain universities promote transparency in the process of decision-making, allocation of funding according to performance criteria and raising of external funding. It proves that the mission statement of the university contributes to the strengthening of its autonomy but, at the same time, the mission statement is a means of accountability of the university to society.

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Women's Career Development Towards the School Superintendency: An Investigation into the Effect of Tacit Learning

Abstract

Career development can be discussed in two primary ways: 1) as a type of formal education and job preparation that a person receives; and 2) as a type of informal learning-related career experiences that a person encounters. This study investigates the effect of learning preparedness on female school administrators' career development. For the data analysis, this study uses the Structural Equation Modeling statistics. The findings from the analysis support the view that tacit learning from both direct and indirect job experiences has a greater effect on women's career development than formal learning. The effect of these factors, however, varies according to women's aspirations for superintendency.

Keywords: *school superintendency; women administrators; career development; tacit learning.*

Introduction

Literature focusing on women in the school superintendency, the top leadership position in educational administration, has been growing for the past two decades. With the issues of women in the superintendency, many studies have produced findings related to job characteristics, leadership styles and to the professional perceptions of incumbents, rather than issues related to the career development towards the position (Brunner & Grogan 2007; Maienza 1986; Tallerico, 1999). In particular, studies that identify the relationship between determinant factors

and women's career development are rather unusual. With a blind eye toward the question of what constitutes superior preparation, differences between the ones who are in the superintendency and the others who are school administrators (except superintendents) could result in explicit variations in preparation profiles for the superintendency positions. For better elucidation of how the variation in career mobility patterns affects women's promotion to the superintendency, this study focuses on career development factors and their possible relationship with access to superintendency.

Career development can be discussed in two primary ways (learning preparation): 1) as a type of formal education and job preparation that a person receives; and 2) as a type of informal learning-related career experiences that a person encounters, including experiential or tacit learning (Author(s); Nestor-Baker & Hoy 2001; Reber 1989; Wagner 1987; Wagner & Sternberg 1985). Formal learning, such as receiving an educational credential, is generally assumed to have a positive impact on career development, particularly during the entry levels in an individual's career (Bills 1988; Spilerman & Lunde 1991; Useem & Karabel 1986; Wernick 1994). However, it is not clear whether formal learning has a consistent impact on the processes of career mobility as women move toward top leadership positions, such as school superintendency, which is the primary target group of this study.

As informal learning, the acquisition of tacit knowledge is considered to be effective for leadership practices as well as for career development (Bjork & Mueller 2006; Reber 1989; Wagner & Sternberg 1985). Previous studies have focused on discovering how tacit knowledge could be acquired from real-world experiences (Bjork & Mueller 2006; Nestor-Baker & Hoy 2001; Reber 1989); yet, it is rarely known which types of tacit knowledge are needed for leadership practice and career development. This study considers the acquisition process of tacit knowledge as informal learning that can develop one's knowledge structure for career development.

The aim of the study is to investigate what types of preparation and experiences (career mobility factors) differentiate women superintendents from women central (district) office administrators (except women superintendents) in their career development. In addition, this study identifies how the relationship between career mobility factors and women's career development varies depending upon whether women aspire to the superintendency. For this purpose, career developmental factors are investigated by comparing women superintendents to women central office administrators who aspire to the superintendency and who do not aspire to the position.

Four Career Mobility Factors

This study has four conceptual areas of career mobility factors: 1) *direct career experience on the job*, 2) *indirect career experience from professional relationships*, 3) *formal education and training* and 4) *personal perceptions of discrimination limiting administrative opportunities for women*.

First, *direct career experiences on the job*, generally refers to hands-on knowledge about enhancing a person's capability and opportunity for career development (Bjork & Mueller 2006; Wagner & Sternberg 1985). As asserted by Reber (1989), tacit knowledge is acquired through direct experiences on the job and moreover, the experiences can be fundamental resources for managing one's career. Action-oriented and real-world knowledge can be gained from work setting experiences, such as working directly with exemplary leadership, participating in high risk activities and being involved in career competitiveness (Bjork & Mueller 2006). In this study, the construct of *direct experience on the job* is estimated through the three indicators that represent an individual's career characteristics in school administration: women's career experience in education (including teaching and administration), the school level of their first administrative position and their experience as a principal.

Second, *indirect career experiences from professional relationships*, refers to the human network that is built through relationships with other people and participation in professional organizations. These activities are important components of tacit learning. Professional relationships are not always related to direct experience from real-world tasks; rather, the concept of tacit knowledge can be expanded to include the practical intelligence that is generally acquired through the socialization processes. In this study, the factor of *indirect career experiences* is estimated through two aspects of human networks for career development: mentorship experiences and the number of professional organizations to which school administrators actively belong.

Third, *formal education and training*, generally means learning opportunities in order to increase explicit knowledge for one's career development. While the previous two factors are concerned with tacit learning for career development, *formal education and training* refers to educational credentials and preparations which are acquired from formal educational settings and activities. Many studies have confirmed the strong positive relationship between educational credentials and career advancement (Bills 1988; Spilerman & Lunde 1991; Useem & Karabel 1986; Wernick 1994). Whether educational credentials are a critical factor for career mobility or simply a necessary qualification for top leadership positions in the

educational administration is investigated in this study. This conceptual factor is estimated through two indicators: highest academic degree and participation in professional training programs.

Last but not least, *personal perception of discrimination limiting administrative opportunities for women* refers to women administrators' views regarding the discriminatory policies and practices that are possibly held by school districts and/or school boards during women's career development in the educational administration. This factor includes women's perceptions about the existence of gender bias and a glass ceiling throughout the path of their career development. For example, women school administrators may think that school boards do not actively recruit women, and school board members do not perceive women as strong managers. The construct of this factor is estimated through three indicators: women administrators' perception about the glass ceiling, discriminatory practices and the school boards' perceptions regarding women's leadership.

In addition to the four conceptual factors, this study has a controlling variable: *district size*. Research has confirmed that the district size, which is measured by student enrollment, has a strong impact on the gender balance in school administration (Author(s); Brunner & Grogan 2007).

Methodology

Data Source

A large national data set, the *2002 National Study of Women Superintendents and Central Office Administrators* in the USA, was analyzed for the purposes of this study. The American Association of School Administrators (AASA) conducted Ten-Year Studies of the Superintendency since 1960, and the association completed the first nationwide study focusing *only* on women in the superintendency and central office positions. Their study provides the most up-to-date, comprehensive information on women and the superintendency in the USA. For the purpose of the current study, the data analysis concentrates on specific portions of the survey including career experience, mobility, formal and information education and the perception of discrimination in the selection process.

Analysis and Hypotheses

Structural Equation Modeling (SEM) is used to identify the indirect effect that may occur via a mediator factor (*personal perception of discrimination*) as well as the direct effect of the factors on women's career development. To compare

group differences, three structural equation modeling (SEM) tests were conducted with the same predictors (four conceptual factors), but with different dichotomous dependent variables, which are three combinations of women's groups: Group A comprised women superintendents and the overall central office administrators, including women administrators aspiring and non-aspiring to the superintendency. Group B consisted of women superintendents and aspiring women central office administrators, and Group C included women superintendents and non-aspiring women central office administrators. The hypotheses based on the relationships between the factors were as follows:

Hypothesis 1. Four latent factors are directly or indirectly related to the current administrative position of women (being a superintendent or central office administrator).

Hypothesis 2. All relationships and the effects of career mobility factors vary across the three targeted groups in this study; superintendents, aspiring women administrators and non-aspiring women administrators.

Validity and reliability tests were done in order to measure the model construct in this study. To consolidate the theoretical model, this study employed the theory of tacit knowledge (Bjork & Mueller 2006; Polanyi 1966; Reber 1989) and experts' opinions in the educational administration field. In addition, the result of the reliability test yielded adequate and marginal Cronbach's alpha coefficients ranging from .65 to .78.

Findings

Effects of Career Mobility Factors

All the values of the model that fit the indices in the model test for Group A are acceptable: $\chi^2 (45) = 150.8$ ($p < .001$, Joreskog's value = 3.4); GFI = .98; NFI = .92; CFI = .94; RMSEA = .043. Examination of the beta coefficients indicates that three career mobility factors, including *direct experience on the job*, *indirect experience from human relationships* and *personal perception of discrimination*, have significant direct effects on women's career development (cf., Table 1). *Indirect experience* has the strongest positive effect on women's career development ($\beta = .18$, SE = .43, $p = .014$), whereas no significant effect of *formal education and training* has been found ($\beta = .10$, SE = .13, $p = .101$).

This result indicates that women superintendents have more mentorship experiences and belong to more professional organizations than women central

office administrators. Also, *personal perception of discrimination* has a significant but negative effect on women's career development, which means that women administrators have a stronger perception of discrimination than women superintendents. However, as far as the *formal education and training* for women's career development, women central office administrators have nearly the same level of education and training experience as women superintendents; hence, this factor does not explain the variation in the career difference between the groups.

Meanwhile, the model tests for the three women's groups also check the indirect relationship between career mobility factors and women's career development, which are mediated by their *personal perception of discrimination limiting administrative opportunities for women*. The study has found no statistically significant indirect effects of all factors including *indirect experience on the job*. This result implies that women's formal and tacit learning preparation for career development to the superintendency does not have a significant influence on their personal perceptions of discrimination that limits administrative opportunities for women in educational administration; in addition, it suggests that these perceptions do not mediate the relationship between women's learning preparation and their career development.

Finally, a partial support is provided for hypothesis one, where some factors have significant direct effects, but all the factors in the analysis have no significant indirect effects on women's career development. In addition, the *district size* (the controlling variable) has been found to have a strong negative effect on women's career development ($\beta = -.39$, $SE = .007$, $p = .000$); this indicates that while women central office administrators generally work in large school districts, women superintendents generally have their current positions in comparatively small school districts.

Table 1. Direct, indirect and total effects of career mobility factors

	Variable Name	Direct Effects	Indirect Path	Indirect Effect	Total Effect
Group A	Indirect Experience	.177*	Indirect Ex à Perception à Current Position	-.014	.163
	Direct Experience	.128**	Direct Ex à Perception à Current Position	.000	.128
	Formal Education	.102	Formal Ed à Perception à Current Position	.000	.102
	Personal Perception	-.102**			-.102
	District Size	-.393**			-.393

	Variable Name	Direct Effects	Indirect Path	Indirect Effect	Total Effect
Group B	Indirect Experience	.099	Indirect Ex à Perception à Current Position	-.008	.051
	Direct Experience	.059	Direct Ex à Perception à Current Position	-.016	.084
	Formal Education	.087	Formal Ed à Perception à Current Position	-.002	.085
	Personal Perception	-.190**			-.190
	District Size	-.330**			-.330
Group C	Indirect Experience	.172*	Indirect Ex à Perception à Current Position	.001	.176
	Direct Experience	.175**	Direct Ex à Perception à Current Position	-.005	.167
	Formal Education	.140*	Formal Ed à Perception à Current Position	.000	.140
	Personal Perception	-.035			-.035
	District Size	-.382**			-.382

Note: ** $p < .01$, * $p < .05$

Group Differences in the Relationships

The result of the model test for Group B indicates that some indices' values do not meet the general standard of the model fit: $\chi^2 (45) = 168.2$ ($p < .001$, Joreskog's value = 3.7), GFI = .97; NFI = .86; CFI = .89; RMSEA = .053. On the contrary, all the indices' values of the model test for Group C are higher than the acceptable levels: $\chi^2 (45) = 152.7$ ($p < .000$, Joreskog's value = 3.4); GFI = .98; NFI = .90; CFI = .93; RMSEA = .047. The squared multiple correlations (R^2) for the current position (dependent variable) in this analysis were .187 for Group B and .333 for Group C (cf., Table 2).

Table 2. Comparison of goodness-of-fit measures and R^2 s

Tests	χ^2 (df)	GFI	NFI	CFI	RMSEA	R^2
Test for Group A: (Supts + Aspiring + Non-aspiring)	150.8 (45) P = .000	.98	.92	.94	.043	.291
Test for Group B: (Supts + Aspiring)	168.2 (45) P = .000	.97	.86	.89	.053	.187
Test for Group C: (Supts + Non-aspiring)	152.7 (45) P = .000	.98	.90	.93	.047	.333

As an indicator of the direct effect, standardized regression weights (coefficients) of career mobility factors vary across the three targeted groups. In the model test for Group B, only the *personal perceptions of discrimination* are a significant factor among the four career mobility factors (cf., Table 3). This result indicates that aspiring central office administrators tend to strongly perceive a glass ceiling, discriminatory practices and gender-biased perceptions of school boards during the selection processes, while the group of superintendents does not.

The result of the model test for Group C shows an apparently opposite pattern to the previous analysis for Group B. The result finds three significant career mobility factors: *indirect experience*, *direct experience* and *formal education and training*. This result demonstrates that non-aspiring administrators have characteristics different from those of superintendents regarding the three career mobility factors pertaining to formal and tacit learning preparation for career development, whereas the *personal perceptions of discrimination* are not significant in this analysis.

Table 3. Group comparison with standardized regression weights

Coefficients (Direct Effects)	Group A	Group B	Group C	Critical Ratios		
				A – B	A – C	B – C
Indirect Ex	.177*	.099	.172*	.825	.056	.743
Direct Ex	.128**	.059	.175**	1.258	-.659	1.848
Formal Ed	.102	.087	.140*	.071	-.180	.237
Perception	-.102**	-.190**	-.035	1.444	-1.524	2.884*
District Size	-.393**	-.330**	-.382**	-2.438*	-.884	-1.582

Note: If the critical ratio is greater than or equal to 1.96, then the coefficient is significant at the level of .05.

Finally, hypothesis two is partially confirmed, where the result shows that the effects of the career mobility factors on women's career development varies across the targeted groups. In particular, the model test for Group B has diminished coefficients (direct effects) of all the factors except for *personal perceptions of discrimination*, which means that the group of aspiring administrators generally has characteristics that are similar to the group of superintendents in terms of formal and tacit learning experiences for their career development; however, they have the strongest perceptions of discrimination in the selection processes. The model test for Group C, however, yields apparently different results from the test for Group B. The group of non-aspiring women administrators has characteristics different from those of the group of superintendents in formal and tacit learning preparation

for career development, whereas there is no significant difference between the two groups in the *personal perceptions of discrimination*.

Discussion and Conclusion

This study investigates the explicit variation in the profile of learning preparedness for the career development among groups of women administrators. The results provide a more complete understanding of women's career mobility towards the school superintendency in terms of formal and informal learning for their career development. There are two major findings. First, tacit learning has a more powerful effect than formal learning on women's career development towards the superintendency. Second, however, the relationship between career mobility factors and women's career development varies across the groups according to their aspirations to the superintendency.

Tacit learning can explain why some women reach higher leadership positions (such as the school superintendency) than others. This study confirms that women superintendents are more likely to acquire career management knowledge from their professional relationships and job-oriented experiences; thus, tacit learning becomes a more influential factor in women's career development. In fact, when applied to the top leadership position in the educational administration, tacit learning plays a stronger role than formal learning. However, this result does not necessarily mean that formal learning is insignificant in career development. Rather, the results imply that educational credentials and professional training are generally considered as qualifications required in the process of career mobility to the top leadership position.

Some studies have proposed a positive and strong relationship between formal education and career advancement (Spilerman & Lunde 1991; Useem & Karabel 1986; Wernick 1994). However, the results of this study suggest that the literature has overestimated academic intelligence, which is typically acquired from formal education settings and activities in the career developmental process (Nestor-Baker & Hoy 2001; Wagner & Sternberg 1985). In contrast, tacit learning has been underestimated, particularly in the process of career mobility to the top leadership position. Indeed, when considering that career development is a matter of well-balanced preparedness for future career mobility, tacit learning (in addition to formal learning) should be one of the primary ways to achieve career goals.

Finally, when preparing for career development, individuals must consider how to strategically develop their career by building effective human networks and

accelerating job-related experiences as well as accruing the required qualifications. For example, women's professional experience and knowledge in line-role positions (such as serving as a school principal) significantly improves their practical knowledge and job opportunities for career development.

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New Educational Review



Chosen Aspects of Psychology

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Psychological Factors Determining the Choice of a Future Job

Abstract

At the time of an economic crisis and its psychological consequences the attitudes and activity of young adults, who are just starting their vocational life, are of great significance. Graduates from colleges and universities are a very important group among them. Their abilities have an impact upon the intellectual potential of the country's economy, and consequently upon its novelty.

The present research concentrated upon the knowledge of graduates about ongoing changes and tendencies in the labour market, and their ability to communicate their needs in this respect. The study comprised 602 students of the final years of B.A. and M.A. studies, since they are confronted with making a decision concerning their future jobs. Decisions made at that time have a long-lasting influence on the quality of their life. It is therefore worthwhile to acquire better knowledge on the inner motives of their choices.

Keywords: *vocational career, entrepreneurship, labour market, planning, early adulthood*

Introduction

In 1997 A. Jansen asked college students aged from 18 to 28 to select the indicators of adulthood out of forty proposed terms. Most frequent choices of the students included four indicators: 1) taking responsibility for your own actions, (2) making decisions based upon your own beliefs and values, (3) becoming independent and not relying on parents and other significant persons, (4) partnership

relations with parents. It is worth pointing out that such indicators as finishing education and starting professional work were not mentioned. Yet, most authors consider the start of professional work or planning a vocational career one of the fundamental undertakings of early adulthood (Erikson, 1968).

The choice of a professional career is, as a rule, preceded by a long-term education and evaluation of one's own abilities. An additional criterion is taken into account by young men, namely, working conditions. It raises the following questions: What is the meaning of a professional career for contemporary young Poles? What criteria are they ready to accept? What are they aiming at and what are they taking into account in their professional plans?

Vocational career from psychological point of view

Social sciences define career as an individual course of events or progress in life. As a rule, it is believed to mean a vocational career, i.e., a job enabling an individual to realize his/her potential and abilities. It is also connected with the personal development of a given individual, while the development means changes occurring in activity, aspirations, and aims of the individual. It runs in turns from progress to regression and then from regression to progress (Werner, 1957). The phase of progress is connected with assimilation of new information and differentiation of experience, while regression results from a conflict between the new and old experience. The phase of plateau appears between the phases of progress and regression, which makes it possible to organize and initially integrate the new experience. Regression causes a crisis, which causes discomfort in all spheres of life. That is a significant breakthrough since it marks the end of one phase and start of the next phase of the developmental cycle. The form and intensity of the crisis depends upon many factors such as age, family relations as well as the previous experience of a person.

Super (1980) distinguishes four stages of professional life: (1) exploration, (2) stabilization, (3) maintaining status quo and (4) decadent. Their characteristics are determined by the degree of engagement in vocational activity.

The stage of exploration is concerned with looking for one's own place in life, trying on various vocational roles, and deciding which of them is appropriate for us. The developmental task of a young person is to integrate their knowledge about themselves and their current experience including the role played so far (son, daughter, student, friend) and an attempt to integrate the past, present, and future. Those who get encouragement and reinforcement through personal exploration

will emerge from this stage with a strong sense of self and a feeling of independence and control. On the other hand, those who do not receive positive identification standards and get no reinforcement from their family and significant others (e.g., teachers) will remain unsure of their beliefs and desires, and will be confused about themselves and the future (Erikson, 1968; Overmeier, Seligmann, 1967). An important factor of the exploration phase is connected with an attempt to look for a good and well-paid job. Hence, young people are ready for some renunciations if they believe that it might lead to gaining material success in the near future.

The next phase distinguished by Super (1980) is the stage of stabilization. It is connected with making a choice, and finding a permanent place and field of vocational activity. Naturally, some modifications of plans or even a need to change the type of work might appear due to recent social, economic and technical development (Gurba, 2000). During the stage of maintaining status quo a person strives to keep their vocational status, while the decadent stage means withdrawal from vocational activity. Yet, all the stages are developmental in their nature, and require changing activity in accordance with appearing circumstances. Hence, even at the decadent stage, man can engage in other than vocational activities or wait passively for the end. It all depends upon his/her motivation, beliefs, attitudes, and his/her previous experience first of all (Kaczmarek, 2012).

Social aspects of career choice

Nobody functions in isolation from her/his surroundings. Hence, besides psychological factors the economic and social conditions of a given family plays a significant role. Despite the declarations of 11–12-year-olds of being ready to give their parents financial help in case of need, only those living in small towns and villages really are ready to do it. Stefańska-Klar, (2000) who conducted such studies, points out that attitudes formed at that stage of development are of great significance in being able to act in an independent way, and making appropriate decisions in the future periods of life. They affect the ability to set goals, make attempts at their realization, and overcome obstacles that might appear. It is, therefore, a period of the acquisition of habits connected with work and dutifulness, as well as identification with future vocational roles (Stefańska-Klar, 2000).

Attitudes of young 20–35-year-old Poles towards making economic decisions were evaluated by Tyszką (1997). He also stressed the importance of previous personal experience in this area. A person who used to work and was able to buy some goods, acquires a sense of independence and a belief in an ability to have an

influence upon the quality of their own life. As a result, such a person is able to take into account the previous experience and make an appropriate decision. In other words, the attitude of resourcefulness or helplessness is created by upbringing in a concrete family setting.

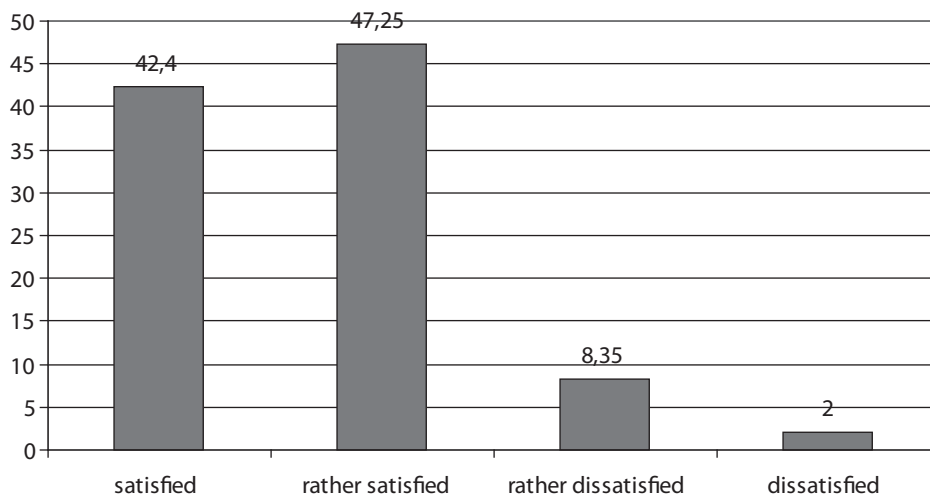
Planning the vocational career requires an ability to evaluate the results of undertaken actions. Young people at the above-described exploration stage are apt to take risk if it gives a possibility of immediate or at least very close financial benefits. Hence, they frequently change their jobs, and are ready to undertake them despite their onerousness or a long distance to commute. They are also apt to emigrate for some time in order to get a better job. As a rule, the perspective of long-term results is ignored. Possible consequences of physical and psychological overload are not taken into account. The attitude of “I want to have it now” is conducive to undertaking risky activities, such as borrowing without taking into account the real possibility of repayment.

The above-presented studies show that a significant factor in making decisions is “personal interest”. The youth take into account what they consider to be most profitable for them (Plassman, O’Doherty, Rangel, 2007, Kaczmarek, 2012). Research by Judd, Krosnick (1982), Davis (1982), and Lipset (1995) revealed that the idea of personal profit depends to a considerable degree on such a variable as the education level, as well as age or sex, but to a lesser degree. Persons having a higher education exhibit market-oriented behaviors, they are more active and professionally oriented. On the other hand, those with a lower level of education frequently exhibit demanding attitudes (e.g. they believe that the state should provide a citizen with a stable and well-paid job). A low level of education is often connected with external locus of control, and the belief that the state should control the labor market, wages, production and sale. Such persons expect to get high benefits, high minimum income, and low income inequality (Tyszka, 1997). A higher level of education shows greater approval for economic changes. It probably results from the ability to anticipate new chances and profits following system changes. Young highly educated people show a tendency to expect positive rather than negative events. They expect to change their job for a better one, and not to be confronted with being left without a job. It is an effect of wishful thinking closely connected with consumer needs typical of that period of life. Middle-aged persons look for stabilization and attempt to maintain the acquired position.

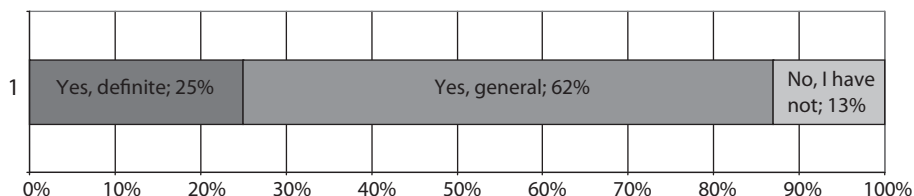
Results

The presented study comprised 602 participants. They were asked to specify their satisfaction with the chosen field of study. The data gathered in this way are presented in Figure 1.

Figure1. Satisfaction with the chosen field of study.



It can be noted that 90% of the participants were satisfied with the chosen field of study (43% to a high degree and 47% quite so), and only 10% were not happy with it. Moreover, 8% of them reported moderate lack of content. At the same time, 62% of the examined students declared that they would make the same choice again, and only 24% would change their field of study. Others were apt to change the form of study (intramural/extramural courses), but within the same field. It shows that the previous decisions of the examined youths were taken consciously and responsibly. Quite optimistic are also the data showing that the interest in a given domain was the main factor taken into account while choosing a field of study. Accordingly, 57% of the respondents (in the multiple choice questionnaire) pointed to the interests, 40% took into consideration a possibility of getting a good job, while for 33% the distance from the place of residence proved to be of importance. The additional reasons enumerated by the examined students in the final part of the questionnaire were failure to be admitted to the first choice studies as well as clear coincidence.

Figure 2. The degree of defining occupational plans by examined students.

Closely connected with the study choice is the future job. As illustrated in Figure 2, only 25% of the examined subjects reported defined career plans, while 62% had but a general idea about them, and 13% had not formulated any plans as yet. It confirms the assumption that the youth taking part in our research were at the stage of exploration. They were looking for fulfillment of the planned tasks in accordance with the already acquired abilities and skills.

Among other factors having impact upon the chosen field of study, financial attractiveness of a job was taken into account by 58% of the respondents, while 12% of them thought it was of no significance. What proved to be important was the possibility of making a career (53% of choices), and easy access to the workplace (52% of choices). At the same time, the prestige of a profession was considered only by 44% of the participants. It means that well-paid jobs were not perceived as prestigious. Family traditions were taken into consideration only in 8% of the cases. In a similar vein, 7% of the participants undertook a given field of study under family pressure, and 23% of their choices were influenced by family connections.

It is of interest that only 43 % of the participants believed that the field of study chosen by them would make finding the desired work easier for them. It means that more than a half of the examined students did not expect to take up a job in accordance with the acquired qualifications. There is also a rather loose connection between the evaluation of the practical value of their study and the feeling of being satisfied with it. Let us remind here that 90% of the participants reported being happy with their choice, yet only 18% believed that theoretical classes may be of some value in their future vocational life. It does not mean that theoretical classes do not take into account vocational usefulness, but lectures often do not take care to expose mutual connections between theory and practical skills. It needs to be stressed that nearly half of the participants (48%) appreciated the practical experience of lectures. They appreciated flexibility and attractiveness of classes: lecturers with practical experience often give examples which make theoretical issues of a lecture more interesting and easier to understand.

Conclusions

The nature of a vocational career is subjective to a considerable degree since each person attempts to realize his/her own goals in accordance with the accepted values and attitudes. It should be stressed that the ability to set a goal is a significant condition for achieving success. Those who are able to plan their own career have a feeling of being a creator of their own destiny, which in turn strengthens the sense of one's own value. Such persons find their strong points and analyze their own capabilities, which stimulates their further development and active search for a position that would suit their needs and capabilities. It need not be reminded that a satisfying job gives you a feeling of well-being and happiness.

The dynamics of social and economic changes makes young people undertake new challenges and change the forms of activity during their vocational career. It is connected with the shortage of workplaces, new ways and character of occupational tasks, and increase in the requirements of professional qualifications. Therefore, it is of import to be flexible and able to change vocational activity in accordance with new labor market needs.

The above-presented data points to many aspects of the complex nature of career planning. The choices made by young people are influenced by their previous experience and acquired attitudes. It makes it possible to take up various forms of activity as well as an ability to overcome problems that might appear. It is of particular importance due to the constant change of economic and social conditions. The present financial and economic crisis shows that apart from economic factors, psychological attitudes of consumers and bank clients are significant. Hence, despite possible problems that might appear at the labor market those who know their own possibilities and are able to act in an entrepreneurial way will have a greater chance to win.

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A Stigmatising Stereotype or a Universal Gap in Expectations? Lessons in Mathematics in the Perception of Polish and Ukrainian Students

Abstract

Referring to the results of the authors' own research published in *The New Educational Review* (Turska, Bernacka 2010; Turska 2011), this article attempts at competitive verification of a hypothesis that explains differences in the perception of a mathematics teacher by Polish male and female students in view of a popular stereotype that Mathematics is a domain for males. It was assumed that diverse perceptions may result from different interpersonal expectations of the two genders. A comparative study carried out on a group of Ukrainians, established in accordance with the principles of ecological validity, seems to further substantiate the stigmatising effect of the stereotype in Poland.

Keywords: *stereotypes, mathematics as a domain for males, interpersonal expectations.*

Introduction

The majority of the students at technical universities in Poland are male. The preponderance of male students who major in strictly technical fields of study closely linked to mathematics (e.g. mechatronics) can be as high as 98% (Sivińska 2011). *Perspektywy*, a non-government educational foundation, was the first to undertake measures to counteract the prevailing trend. The "Girls for Engineers" programme, implemented in 2006, is today a recognised permanent feature of technical university recruitment campaign. In 2009 the programme, conducted

under the auspices of the Minister of National Education, obtained official support of the rectors of technical universities and of the Ministry of Science and Higher Education in the form of scholarships for outstanding female students.

While the activities undertaken are fully justified, they are hardly sufficient, since they focus on decreasing the impact of the phenomenon without explaining its root causes. The apparent natural superiority of males over females in terms of mathematical capacity cannot be easily accepted be it merely in the light of the report by PISA (2011) – in Poland the average score of males was only marginally higher than that of females (497 and 493 respectively). The explanation proposed in the authors' research refers to the stereotype whereby "mathematics is a domain for males" (Gavin, Reis 2003). It was assumed that the content of the stereotype, a part of which is regarded as common knowledge, also determines education at large, as it provides teachers of mathematics with ready-made models of what is expected of students of the opposite sex. These expectations, in turn, translate into a different approach of the teacher. In line with the self-fulfilling prophecy in education (Dee 2007), teachers activate the Golem effect with respect to female students and the Pygmalion effect with respect to males. The results of a comprehensive study, (Turska, Bernacka, 2010), demonstrating that female students (in relation to male students) register a less favourable climate of a maths lesson, the superficiality of feedback, a lower level of encouragement and stimulation of cognitive processes seem to confirm the hypothesis suggested. Another argument in favour of the hypothesis comes from the proposed interpretation of the particularly unfavourable perception by female students of classes conducted by female teachers (Turska, 2011). References to the concept of a stereotype threat (Schmader, Johns, Forbes, 2008) help explain the phenomenon as a sign of rejection by female teachers of their own gender group identification. This mechanism makes sense only when the commonly held conviction about mathematical capacity of females is stigmatising in nature.

However, in order to avoid the trap of a "paternal effect" with respect to the conclusions drawn, the author decided to confront her interpretation with a competitive proposition. After all, "the history of science in general, and the history of psychology in particular, prove that many of us remain in the wrong longer than they should because we widely overrate our own theories" (Rosenthal, 1991, p. 238). Consequently, the purpose of this article is to formulate and to verify the viability of a method to explain the results obtained, which stands in contrast to that based on the stereotype that "mathematics is a domain for males".

Competitive explanatory hypothesis

The existing interpretation of the results obtained stressed the significance of expectations formulated by teachers. In the first instance (Turska, Bernacka 2010) these were diverse interpersonal expectations addressed to students in different gender groups caused by the effects of the stereotype; in the other instance, these were the expectations of female teachers themselves as to how they should behave in order to avoid being pigeonholed as acting in compliance with the stereotypic perception of the stigmatised group (Turska 2011). It is worth bearing in mind that education is an interactive process and not merely a reaction of students to stimuli offered by their teachers. A different perception of a teacher's conduct depending on the student's gender may therefore be caused primarily by diverse interpersonal expectations of boys and girls with respect to their male and female teachers. So far, such an interpretation has not been taken into consideration.

Assuming that a typical female student, relative to a typical male student, is statistically less frequently criticised and reprimanded by her teachers due to her higher degree of concentration on school-related activity (Turska 2006), such critical remarks and reprimands must be subjectively perceived as more potent. Incomplete though promising, this is a totally new explanation of a particular sensitivity of female students to the climate of a lesson whose assessment was the lowest of all the aspects of the teacher conduct, notably, female teachers. Furthermore, Cross and Markus (2002) claim that women and men use different forms of discourse and diverse verbal communication styles. Women tend to adopt a pro-social and empathic style, while men tend to underline competition and hierarchy. For this reason, female students may tend to formulate higher expectations of female teachers, perceived as members of a more empathic gender group, as to their friendliness and willingness to help, in line with the metaphorical "angel of the classroom" (cf.: Tamboukou 2003). This aspect of the teaching profession is likely to have a lesser appeal to male students.

A competitive hypothesis was adopted, whereby the reported differences between the way teachers of mathematics are perceived by male and female students result from diverse interpersonal expectations of boys and girls. In order to verify the adequacy of this hypothesis, more research was required.

Verification procedure adopted

The apparently obvious procedure consisting in replicating the study already performed with respect to other subjects, e.g., falling within the terms of reference

of humanities, was abandoned. It turned out that adapting individual items of the research tool (Turska, Bernacka 2010) to reflect the specific nature of another subject would place students under significantly different stimuli from those originally used. Therefore, a quasi-experimental research model was developed based on two groups and a post-test on the dependent variable (Brzeziński 2000, p. 366).

Assuming (in a consistent manner) that the effects of the stereotype (in Polish experimental conditions) constitute the main independent variable, there is a need to find “a social milieu” (i.e., control conditions) where this variable is either absent or occurs to a lesser degree. It was further assumed that a comparison of the values of the main dependent variable (teacher conduct as perceived by students), using the same diagnostic tool, will help establish sound grounds for the verification of one of the competitive hypotheses: the effects of the stereotype or universal differences in interpersonal expectations of male and female students. At this point, it is important to justify the claim that control conditions exist in the “social milieu” of Western Ukraine.

Gender-related stereotypes, deeply rooted in Ukrainian society, constitute an important mechanism of social control and provide justification for patriarchy and prestige (Gender Plan of Action 2001; Goroshko 2008; Shmelova, Parsons, Shmelova 1995). An in-depth study by Goroshko (2008), which outlines a wide spectrum of gender-related stereotypes, does not include a conviction that “mathematics is a domain for males.” Despite numerous demands to counteract gender discrimination, the report by the Ukrainian Minister of Education and Science (2010) does not indicate the pressing need to increase the number of females in technical education. Arguably, such a stand may be a side effect of the gravity with which mathematical education was perceived in the former Soviet Union. Mathematics was seen as an important weapon of the Cold War, and later as a measure with which the famous slogan by Khrushchev of 1957 – to catch up and overtake America – was to be implemented (Karp 2006) and a key tool of the “scientific and technological revolution,” as announced by the Central Committee of the Communist Party (1966) (Wirszip 1981). Several years of concerted efforts of a team of distinguished mathematicians headed by Kolmogorov and psychologists of learning, teachers and methods specialists have resulted in the development of an educational programme that was modern in content, innovative in approach, well-integrated, and highly sophisticated. “Moreover, hundreds of thousands of youngsters take part in an exceptional range of extracurricular activities – mathematics clubs, circles, and contests – or study in unique schools specializing in mathematics, all designed to discover mathematical talent and to train it from the earliest possible age” (Wirszip 1981, p. 359). It does not seem

“economical” to restrict talent search and development only to half of the student population. The effects of a strong conviction about the importance of mathematics, deeply instilled in all students, can now be easily traced in the children from the former Soviet Union who live in Israel. Apparently, and irrespective of their gender, they treat fluency in mathematics as a major part of their own identity (Sfard, Prusak 2005).

For the purposes of the study described here, it was assumed that a similar diversity of perception of mathematics lessons by male and female students in control conditions (the Ukrainian test group) and in Polish experimental conditions will be ascribed to universal differences in interpersonal expectations between boys and girls. Consequently, a hypothesis whereby a less favourable perception of teachers (and female teachers specifically) by Polish female students is caused by the effect of the stereotype that “mathematics is a domain for males” will no longer hold.

Method and Participants

The Teacher Conduct Scale developed by D. Turska, and translated and adapted by O. Hirnyy¹, was used, the same as the scale applied to Polish students. The scale measures four aspects of teacher conduct, i.e., climate, feedback, input, and output. The person examined is to assess the degree of accuracy of a given statement (in the scale from 4 – “totally true” to 1 – “totally untrue”). Theoretically, the raw result of each subscale ranges from 6 to 24 points.

No effort was spared to ensure that the criteria of selecting Ukrainian participants matched those used in Poland (students from secondary schools located in small towns of the Lubelskie Voivodship, Turska, Bernacka 2010). Out of 314 students selected, 163 were females and 151 males from grades 10–11 (years of schooling comparable with those of Polish secondary school students), from small towns of the District of Lviv (like the Lubelskie Voivodship, a border district).

¹ I wish to thank dr O. Hirnyy of the Post-Graduate Teacher Training District Institute in Lviv for his work on adapting the scale and organizing research in Ukraine.

Results

In order to determine whether Ukrainian male and female students assess the conduct of teachers of mathematics differently, a single factor ANOVA variance analysis was performed with respect to the results obtained from the four subscales. Statistical conclusions are presented in Table 1 (relevant results of the Polish research by Turska, Bernacka, 2010 are shown for comparative purposes).

Table 1. Conduct of teachers of mathematics in the perception of Ukrainian (U) and Polish (P) female and male students

PERSONS EXAMINED	SUBSCALE							
	<i>Climate</i>		<i>Feedback</i>		<i>Input</i>		<i>Output</i>	
	U	P	U	P	U	P	U	P
Female pupils	18.54	16.66	18.24	17.39	20.50	17.55	19.56	16.89
Male pupils	18.41	17.25	18.04	17.90	20.19	18.35	19.34	17.73
Value F	.18	6.31	.34	4.65	.79	8.37	.35	10.19
Significance	p=.66	p<.01	p=.55	p<.05	p=.37	p<.01	p=.55	p<.001

The data presented in Table 1 indicate no significant differences in the assessment of Ukrainian male and female students with respect to all subscale results of the Teacher Conduct Scale. It was therefore agreed that subsequent analyses concerning the importance of the gender of the teacher would be carried out with the exclusion of one variable, i.e., the gender of the student, since it proved insignificant in the study described. A two-factor variance analysis was employed: country X teacher gender.

The data obtained were subsequently classified under two analytical categories. The first one refers to the results reported on the *Feedback* (Figure 1) and *Climate* (Figure 2) subscales. No significant differences were reported for the Ukrainian test group as regards the assessment of teachers of the opposite sex. Interestingly, the result is significantly different for female teachers (*Feedback* – $F=56.99$; $p<.001$; *Climate*– $F=82.07$, $p<.001$) from the one reported for the Polish test group. No differences were reported in the assessment of male teachers depending on the country of origin.

The second analytical category refers to the results obtained on the *Input* (Figure 3) and *Output* (Figure 4) subscales. This time, teacher gender is also significant for the Ukrainian test group although this significance stands in reverse relation to

Figure 1. Assessment of the conduct of maths teacher. Comparative analysis: country x teacher gender. Subscale: *Feedback*

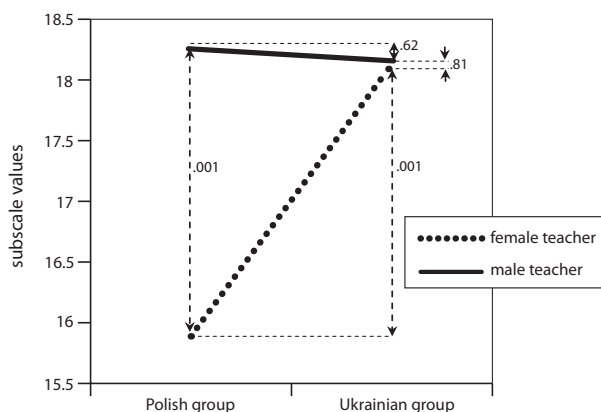
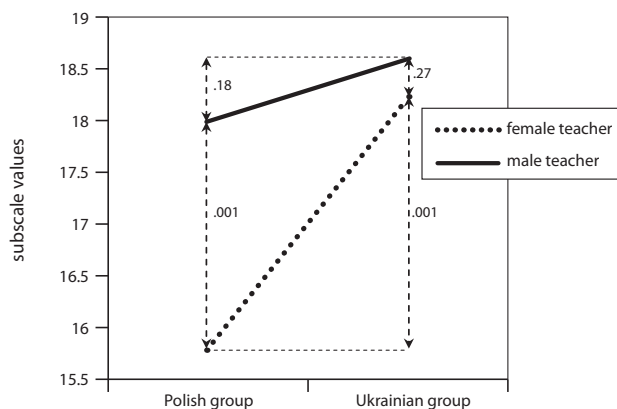


Figure 2. Assessment of the conduct of maths teacher. Comparative analysis: country x teacher gender. Subscale: *Climate*



the Polish test group. The Ukrainian students give a higher score to the conduct of female teachers ($p < .01$) as compared with that for male ones. Thus, the diversity of assessments of female teachers' conduct by the students representing the two groups under analysis demonstrates its discriminatory value on an unprecedented scale (*Input* $F=164.08$; $p < .001$; *Output* $F=163.76$; $p < .001$). And again, there are no grounds to establish that the assessment of male teachers in the Polish and Ukrainian test groups is any different.

Figure 4. Assessment of the conduct of maths teacher. Comparative analysis: country x teacher gender. Subscale: *Output*

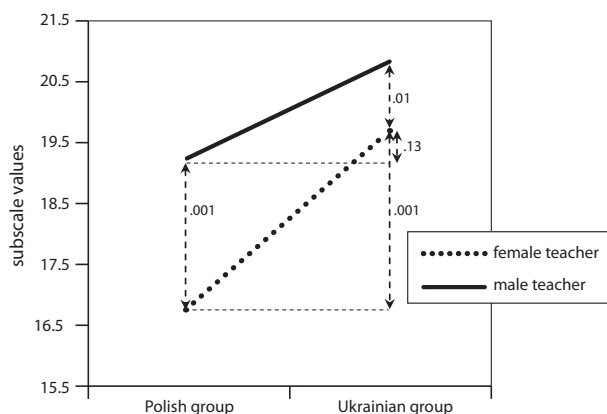
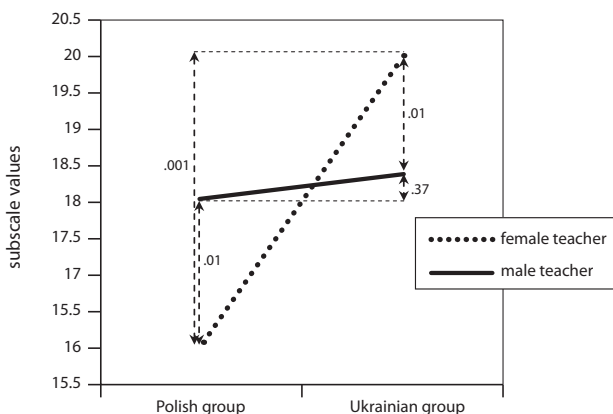


Figure 3. Assessment of the conduct of maths teacher. Comparative analysis: country x teacher gender. Subscale: *Input*



Discussion

A discussion of the results presented should start from their reliability. A quasi-experimental research model involving two groups was employed, since such a procedure offered the possibility of a comparative analysis and interpretation of the results obtained. This approach did not, however, have the precision required of an experimental method. There was no manipulation of the main independent variable (the stereotype that stigmatises girls and women); it was simply assumed

that this variable has an effect on the Polish participants in the study while this effect is not reported for the Ukrainian test group. The justification for such an assumption may not necessarily convince everyone. Furthermore, the content of the items in the Teacher Conduct Scale, despite cultural transposition, may have had a somewhat different meaning to the Polish and Ukrainian students. Nevertheless, there are grounds to believe that the comparative study was performed in a reliable manner. This is evidenced in the identical assessments of Polish and Ukrainian male teachers (i.e. representatives of the group which the stereotype favours) in all the aspects of their professional conduct. It is highly unlikely that such a convergence was accidental, especially if the average raw result of approximately 18 points should be treated as the “golden mean” of a realistic assessment – neither excessively critical nor overtly uncritical.

Arguably, the results obtained seem to disprove the adopted competitive hypothesis whereby the diversity of perceptions of mathematics lessons depending on the teacher and student gender can be ascribed to universally diverse interpersonal expectations of boys and girls. In the Ukrainian conditions (described as control conditions), student gender does not determine the assessment of a teacher's conduct (as is the case in the Polish conditions). Moreover, the effect of a teacher's gender clearly differs between the Ukrainian and Polish groups. It is worth bearing in mind that Ukrainian male and female students perceive male and female teachers in an identical manner in situations that require an individual contact between the teacher and the student, where young people are addressed directly. It is therefore clear that female students do not expect a greater degree of empathy from their female teachers. On the other hand, all the students rate the value of the lessons conducted by female teachers higher than those conducted by male teachers. This is easily noticeable with respect to the care about the clarity of the subject matter presented in class ($F=33.03$; $p<.001$) and activating all students ($F=20.01$; $p<.001$).

It was not the purpose of this article to determine the perception of mathematics lessons by Ukrainian students in an independent manner, but to establish a point of reference against which to compare the results of the Polish research. The rationale behind this approach was to avoid “the paternal effect” with respect to the hypothesis presented in earlier publications by the author. Arguably, the study provides additional evidence in support of the hypothesis put forward by its author: in Poland the stereotype, according to which mathematics is a domain for males is still alive.

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New Educational Review



Review

**Book Review:
Acta Technologica Dubnicae
(ISSN 1338-3965)**

Acta Technologica Dubnicae is a peer-reviewed international and interdisciplinary journal published by the Dubnica Institute of Technology in Dubnica nad Váhom (Slovakia) twice a year since 2011. Its primary objective is to meet the need for a thorough discussion on research results in disciplines relevant to pedagogical, psychological and technological aspects of education and to contribute to the wide diffusion of scientifically sound contributions in this domain.

Acta Technologica Dubnicae provides a venue for research studies, theory papers, case studies, critical essays, book reviews and informative articles from across the globe. Of particular relevance are quantitative and qualitative research studies that involve the application of science to an important educational issue. The journal attaches a lot of importance to the quality of research methodology, measures including both reliability and validity.

The scope of the journal is broad in terms of the range of issues to be addressed, e.g., the impact of educational technology on student achievement, methods and criteria for the evaluation of the effectiveness of educational technology or changes in teacher roles due to the current trends in educational technology. Papers may represent a variety of theoretical perspectives and different methodological approaches.

Regular issues have an open call for manuscripts. There is an Editorial Board policy that poorer manuscripts or manuscripts that do not follow the Guidelines for Authors (available at: <http://www.dupres-group.com>) will be rejected before review and quality manuscripts will be reviewed. Work must be undertaken in accordance with *Acta Technologica Dubnicae* guidelines on publication ethics and malpractice statement (available at: <http://www.dupres-group.com>).

Papers are subject to a peer review process, using an international panel of researchers, who are expert in relevant fields. Referees are asked to judge the quality of research and also the relevance and accessibility of a paper for an international audience. The journal uses double blind review, meaning the reviewers are not able to establish the author(s) of a manuscript and vice versa. Submission of an article implies that the work described has not been published previously, it is not under consideration for publication elsewhere, its publication is approved by all the authors, and, if accepted, it will not be published elsewhere in the same form, in English or in any other language.

Book Review:

**P. Hlaďo, *Profesní orientace adolescentů: poznatky z teorií a výzkumů* (Career orientation of adolescents: findings from theories and research). Brno: Konvoj, 2012. 140 s.
ISBN 978-80-7302-164-1**

The monograph *Career orientation of adolescents: findings from theories and research* (*Profesní orientace adolescentů: poznatky z teorií a výzkumů*) is the outcome of the work of PhDr. Petr Hlaďo, Ph.D., assistant professor at the Institute of Lifelong Learning at Mendel University in Brno. He is a renowned author who has long been committed to researching career choice of primary and secondary school students, career maturity of students, career counselling, career education and other topics related to the subject-matter of the publication reviewed.

The aim of the monograph is to provide a summarizing overview of theories and studies in the area of decision-making of lower secondary school students in the transition between the lower and upper secondary education, and to acquaint the reader with a longitudinal research survey aimed at finding out how students and their parents currently experience and resolve the career choice at the end of lower secondary school. The goal has to be evaluated very positively since it deals with the transition period when students think about their course of education and their career orientation for the first time. As the author himself aptly adds, “the choice of a profession that students have to make at the end of lower secondary education is not an irreversible act, any revision or change in the original decision is associated with considerable effort”. Psychological studies have shown that the population of lower secondary school students is not yet sufficiently mature for this important decision, which results in the fact that students are not able to rationally assess their qualifications, compare them with the objective requirements of the education system and the world of work and find a reasonable compromise among them.

Career choice is therefore quite a difficult problem for many students and they have to be systematically prepared for it. Effective preparation should have several levels: leading students to career choices within the formal curriculum, providing information and counselling services at schools and school counselling facilities, preparation in the families, informing through mass media of communication, etc. Findings about the career choices of students at the end of compulsory schooling are therefore necessary for the educational and counselling-psychological practice, where the target group of readers of the publication is primarily teachers and counselling staff. The findings presented in the publication may also be used by parents of students who are facing the first career choice, or makers of educational and school policy. It has to be added that on the Czech and Slovak book market there are few recent professional (not popularization) publications dedicated to this subject. The important ones include publications by Š. Vendel (*Kariérní poradenství (Career Counselling)*, Grada 2008; *Výskum školskej a profesijnej orientácie žiakov (Research on educational and career orientation of students)*, State Pedagogical Institute 2007), E. Walterová et al. (*Přechod žáků ze základní na střední školu: pohledy z výzkumů (Transition of students from lower secondary to upper secondary school: views from research)*, Paido 2009), J. Balcar et al. (*Zvolil jsem si techniku. Proč? Faktory výběru studijního oboru a střední školy (I have chosen technical sciences. Why? Factors of the choice of subject and secondary school)*, Mendel University in Brno 2011), a part of publication by E. Gajdošová and G. Herényiová (*Rozvíjení emoční inteligence žáků (Developing emotional intelligence in students)*, Portal 2006) and some others.

The strong point of the monograph *Career orientation of adolescents: findings from theories and research* is its comprehensive approach to the subject of career choice, which is not viewed from a purely educational or pedagogical-psychological or counselling point of view, but it attempts to capture the decision-making process in a broader social context. This is also reflected in the balanced structure of the publication.

The introductory part (numbered as the first chapter) aptly acquaints readers with the issue of career choice of lower secondary school students, problems in this area, exigency of career decision-making and the importance of systematic preparation of students for this decision-making process. Besides, the content of the publication and the target group of readers are outlined.

In the second chapter, the basic conceptual apparatus used in the text is defined. This chapter is important for the orientation of the reader as there is no consensus in the specialized literature as to the use of terms such as career choice, first career choice, first direction selection, secondary school choice, choice of further course of education, career (or professional) orientation, career counselling, professional

counselling, vocational counselling, career choice counselling; career education, education for career choice, education towards profession, etc. The concepts are defined precisely in the manuscript, the definitions are based on both the theoretical knowledge of the author and the relevant specialized literature. The author accompanies the basic concepts with a relatively new term “course of education and career management skills”, which has begun to appear in specialized texts, but it is not yet well known in educational and psychological practice.

The third chapter gives an excursion into the theory of career choice. It presents major career development theories, or approaches to career development theories, which are divided into content and process ones. Elaboration of this chapter can be evaluated very positively. It contains a precise characterization and specification of the concept of a person's career development by the world's leading authors such as F. Parsons, E. Ginzberg, D.E. Super, J.L. Holland, A. Roe, etc. A pitfall, however, is the fact that the chapter maps the career theories mainly in the Anglo-American area. Its content could be expanded to include findings from the Czech-Slovak environment (they were developed mainly between the 60s and 90s of the previous century), because it is a territory somewhat different as to the specifics of the education and counselling system as well as historical development, culture, tradition, etc. In spite of this observation, the chapter can overall be evaluated as balanced and elaborated with expertise.

Inclusion of the fourth chapter, “Evaluation of ontogenetic characteristics and career readiness of adolescents,” is appropriate for the understanding of the problems students face and the impact of developmental particularities of adolescents on the career choice. Discussed are the effects of social development, development of perspective orientation on career decision-making. The career readiness of students is briefly evaluated and obstacles occurring in career choice are outlined. Out of many taxonomies of obstacles, whether these are theoretical models or empirically validated taxonomies, published in the foreign literature, the author describes a taxonomy of obstacles to career choice in the population of U.S. adolescents designed and empirically validated by I. Gati, M. Krausz and S. H. Osipow in 1996. Although this taxonomy is not recent, its importance is testified by the fact that it is still quoted. The chapter is concluded by the assessment of risks of Czech students' career choice, which include little knowledge about the world of work and various occupations, ignorance of the education system, insufficient level of self-knowledge, short-term perspective orientation and vague ideas about one's future. Overall, it can be said that the career readiness (maturity) of students in our country receives little empirical attention. This opens considerable space mainly for psychologically oriented research.

Career counselling for students and its institutional support are the topic of the fifth chapter. This chapter helps understand the rather confused system of support for pupils and parents provided at schools (in school counselling offices), school counselling facilities, but also in other institutions of the Ministry of Labour and Social Affairs. Czech studies (including the research presented in the fifth chapter) confirm the long-term low utilization of counselling services. The causes of this trend are low awareness among parents and students about the information and counselling possibilities the two institutions offer (here I see the importance of the chapter), little or negative experience with their use and poor accessibility.

The sixth chapter acquaints the reader with the preparation of primary and secondary school students for career choice within the formal curriculum (thematic area World of work at primary schools and cross-sectional topic Man and the world of work at secondary vocational schools). The information may be used by parents to orient themselves in preparation as well as by counselling staff and teachers themselves.

The seventh chapter provides an overview of current research results in the Czech Republic and abroad concerning actors that co-influence students' career choice and career orientation. It focuses on the influences of family, peers, teachers and counselling staff. Discussed is the topic of students' autonomy in the process, decision-making and strategies of parents aimed at influencing students' aspirations and decision-making depending on the socio-economic status of the family. The chapter is a rewrite of a study that was published by the author in the *Pedagogická orientace* journal in 2010 (vol. 20, issue 3) and extended by findings from new research studies.

The greatest benefit of the monograph lies in the eighth chapter, in which Peter Hlaďo presents a concluded qualitatively oriented empirical survey (using the design of a case study) on the decision-making of lower secondary school students and their parents in the transition from lower and upper secondary school. It evaluates the views of students and parents on the role of actors in the career choice, describes strategies applied by parents in career choice and sub-stages of decision-making in students. The author does not limit himself to the level of empirical findings. The results of the analysis and synthesis of available theoretical materials, curricular documents and his own research conclusions is a longitudinal program of career orientation. Due to the high selectivity of the Czech education system, it is logical that this chapter includes information about the admission procedures, which is a key criterion for students in their career choice. The author introduces the strategies of students and their emotions in the period before and after admission procedures to upper secondary schools.

The conclusion summarizes the major findings and makes suggestions for changes in both the educational and counselling areas. The summary is concise, clear and understandable.

I believe that the monograph "*Career orientation of adolescents: findings from theories and research*" by Petr Hlad'o is a valuable monograph, which provides a cross-section through theories and findings of studies on career choice. I am convinced that thanks to its clarity its readers will recruit not only from the narrowly defined group of experts-researchers, but also from a broader range of so-called caring professions. These include educational counsellors, school and counselling psychologists and social pedagogues. The presented text could also serve as a recommended study material in preparation of future teachers at primary and secondary schools.