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A study of trainee teachers' image of practising teachers and their ICT expectations

Katalin Harangus*, Faculty of Technical and Human Sciences, Sapientia – Hungarian University of Transylvania,
Op. 9., Cp. 4., 540485 - Tîrgu Mureş, Romania

Zsófia-Irén Horváth, Faculty of Technical and Human Sciences, Sapientia – Hungarian University of Transylvania,
Op. 9., Cp. 4., 540485 - Tîrgu Mureş, Romania

Gabriella Kovács, Faculty of Technical and Human Sciences, Sapientia – Hungarian University of Transylvania,
Op. 9., Cp. 4., 540485 - Tîrgu Mureş, Romania

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Abstract

Digital illiteracy is one of the great challenges of education. In our information society, an adequate level of digital proficiency is an important requirement and teachers' skills, personality, competence and professional experience are important factors in determining the efficiency of the teaching-learning process. This research has two goals. First, we tried to find out what characteristics a "good" and a "bad" teacher would have based on the trainee teachers' own experience as secondary school students. We also wanted to know what they think about the social roles of teachers; about the importance of native language in education; what expectations they have regarding the computer skills and competences of secondary school teachers; and what experience they have regarding the use of ICT equipment in the education process. The answers to the open questions about teachers were grouped into four categories: professional expectations, preparedness, teaching skills, personality traits and behaviour. We developed four statistically relevant factors to determine the level of teachers' computer skills and we used a set of questions containing 10 items to examine the experience of trainee teachers regarding the use of ICT in education. Our study reveals the situation of Hungarian vocational training from Romania, which is a key factor for high-quality teacher training.

Keywords: teacher image, computer skills and competences, trainee-teachers

*ADDRESS FOR CORRESPONDENCE: **Katalin Harangus**, Faculty of Technical and Human Sciences, Sapientia – Hungarian University of Transylvania, Op. 9., Cp. 4., 540485 - Tîrgu Mureş, Romania. E-mail address: katalin@ms.sapientia.ro

1. Introduction

1.1. *The teacher's personality*

The teacher's personality is considered an important influencing factor regarding the efficiency and quality of the educational process. The pedagogue's competence, aptitude, professional, educational and linguistic preparedness, social status and prestige all influence the teaching-learning process. From this perspective the issue of teacher training becomes especially significant. In minority education, the institutional background and autonomy of teacher training becomes even more relevant (Csata, Márton, Papp, Salat & Péntek, 2010).

The characteristics of an efficient teacher were described by Strom and Bernard (1982) in 1960, based on the results of research conducted by the American Council on Education. The first characteristic deals with the importance of the antecedents to a teaching career. According to this a successful teacher used to like games where they could play the role of a teacher even in their childhood and they often decided to become teachers before starting their university studies. The second characteristic is career motivation defined by love of children and interest in their development. Good teachers think that pedagogues should be friendly, tolerant, determined and not arrogant, sarcastic or biased.

Smith (1974, in Zetényi, 2002) emphasizes that an efficient teacher should be able to manage a class as a whole, as well as each student separately, and organize the learning environment and the learning tasks. According to him, an efficient teacher is responsible, organized and sympathetic, communicates well, can explain his/her subject and requires an acceptable quantity of work from his/her students.

1.2. *Information and communication technology*

Digital illiteracy is one of the great challenges of education. According to the Digital Agenda presented by the European Commission regarding the enhancement of digital literacy, ICT competences should be included in education according to their growing relevance and importance (COM, 2010).

An adequate availability of digital equipment in educational institutions and the training and encouragement of teachers to use this equipment in the teaching-learning process have been priorities in the Romanian educational policy over the last few years. According to the strategic initiatives for development of the Europe 2020 Digital Agenda for Romania, educational institutions should be provided with ICT infrastructure; educational materials and courses should be digitally stored and accessible for students; the digital competences of students and teachers should be enhanced by special courses meant to improve the quality of the teaching-learning process; Web 2.0 interfaces helping both professional development and classroom activity should be included into the teaching-learning process; students should be encouraged to use information provided by interactive teaching materials and the internet (MSI, 2014).

Consequently, a significant change in attitude is expected to take place in the education system, setting new goals, expectations and requirements for the institutions involved in teacher training. These institutions have an important role in transmitting the necessary knowledge to the teacher trainees and developing their ICT skills in order to motivate and encourage them to use up-to-date methods in their future profession*.

* According to the indications framed in the Europe 2020 Digital Agenda for Romania, by 2020 75% of the students will be experienced ICT equipment users and 75% of the institutions will use Web 2.0 interfaces in the teaching-learning process.

The teachers of the future should be aware of the scope and usage of ICT equipment; they should be skilful and experienced users of the most current devices, ICT elements and applications, in order to be able to enrich the teaching-learning process with multimedia materials and digital course materials appropriate for their students' level, needs and interests.

2. The aims of the research

In our research we intended to find out what characteristics a "good" and a "bad" teacher would have according to our respondents – first-year trainee teachers from various fields of technology. We also wanted to know what they think about the social roles of teachers; their opinion about the importance of native language in education; what expectations they have regarding the computer skills and competences of secondary school teachers; and what experience they have regarding the use of ICT in the education process.

This study serves as a starting point for further investigations, in which we plan to compare the teacher trainees' view with the teaching experience of vocational school teachers.

3. Presentation of the study

The Teacher Training Institute of Sapientia - Hungarian University of Transylvania was initiated in 2013, by starting the first Hungarian teacher training programme in the domain of engineering and technology. According to Pletl (2014) the institution fills a gap in the domain, because one of the pressing problems of Hungarian vocational training in Transylvania is the lack of Hungarian-speaking teachers who know the Hungarian specialized language.

The target population consisted of students of Sapientia University – Faculty of Technical and Human Sciences, Tîrgu Mures, studying in the domains of engineering and technology. The sample (N=54) consisted of first-year informatics students and first- and second-year engineering students (automation and applied informatics, computer sciences, computer-aided operation planning, mechatronics, telecommunication).

We used a questionnaire containing 20 groups of questions. The students were asked about the following topics: their personal background (gender, department and year of study, information about their secondary school studies); their views related to teaching as a profession; the role of the mother tongue in the teaching-learning process; the availability and provision of ICT equipment; THEIR? knowledge in the domain of ICT; experience in Web 1.0 and 2.0 applications; previous educational experience; their expectations regarding the teacher-training process.

The data was collected in the second semester of the 2014/2015 academic year.

In this enquiry we tried to reach all the students studying in the domains of engineering and technology. We handed out 70 questionnaires, from which 54 were sent back; hence the response rate of the survey was 77.14%.

4. Results

In the first part of the questionnaire we asked first-year teacher trainee students to answer the following three questions based on their school experience: (1) how would they describe a "good" and a "bad" teacher? (2) what do they think about the social role of teachers? (3) what do they think about the importance of native language in education?

The answers given to the open question about “good” and “bad” teachers were categorized according to four viewpoints: professional expectations and preparedness; teaching competences; personality traits; behaviour and attitude. Afterwards we calculated the frequency of the answers and defined the order of importance of certain characteristics.

(1) The most frequently mentioned characteristic of “good” teachers referred to professional preparedness: they are professionally well prepared and well informed. This was followed by: interesting, diversified classes and effective teaching; clear explanations. Regarding teaching competences, the students most often referred to verbal skills – good speaker and lecturer; creative; clever and intelligent. Besides professional preparedness they often mentioned personality traits in describing a good teacher: sympathetic, self-confident, firm, purposeful, patient, friendly, nice, helpful, fair, trustworthy, funny, with a sense of humour. From the point of view of behaviour and attitude a teacher should be strict, motivating, wholehearted and interesting, consistent and organized.

The most frequently mentioned characteristics of “bad” teachers also referred to professional preparedness, or more precisely the lack of such preparedness, followed by incomprehensible explanations or lack of explanations and boring, monotonous classes. Teaching competences were less frequently referred to in relation to “bad” teachers and, if they were, they referred to the lack of verbal skills: too fast speech, inadequate explanations; intolerance. The most frequently mentioned personal traits of “bad” teachers were the following: impatient; favouritism, unfair, insincere; aggressive, short-tempered; selfish, taunting, insulting; cold, withdrawn. From the point of view of behaviour and attitude a bad teacher is too indulgent or too severe; inconsistent, unsystematic; disorganized, negligent; unable to keep order and discipline.

(2) Most of the trainee teachers have a positive opinion about the social role of teachers: teachers are role models; their task is to teach, educate, transmit knowledge; teachers can be the second most influential people after the parents in a child's life; they have a great responsibility as educators of future generations. According to the respondents, teachers are not suitably appreciated by society.

(3) The question referring to what they think about the importance of native language in education was answered by the majority of the respondents (98%) stating that studying in one's native tongue is easier, faster, gives deeper understanding and results in more efficient learning. Learning and preserving their native language and keeping their national consciousness were found important by a fairly large number of students (46%). Studying in one's native tongue also helps a more accurate communication and the acquirement of the necessary terminology. As a new viewpoint, some students emphasized that they have the right to study in their native language (7%).

In the second part of our research, the trainee teachers' opinion regarding the use and importance of ICT in the education process was measured with a set of questions containing 63 items. The items were divided into three modules according to the scope of the research: (1) teachers' computer skills; (2) the use of ICT in education; (3) the usefulness of ICT equipment in education based on the students' personal experience.

(1) In the first module we measured teachers' computer skills regarding the following: their experience in online communication, file-management, word processing, table management, preparing presentations and the usage of multimedia. Factor analysis was used for data compression. In order to prove the applicability of the collected data, the Kaiser-Meyer-Olkin factor was calculated (0.65). In the case of the generated factors the cumulated total variance was 68.90%. During the analysis we applied the Varimax rotation. Thus, the following four, statistically relevant factors were found with the help of the analysis:

- 1. factor: beginner/intermediate computer user level (writing and reading e-mails, file-management, text formatting, basic Excel skills, basic PowerPoint skills). Although the teaching of computer skills in schools is compulsory and their application is a graduation requirement, the

students still believe that in the 21st century such knowledge and skills are necessary but not essential.

- 2. factor: advanced/experienced computer user level (using the spell checker, drawing, editing references, editing headnotes and footnotes, diagrams and preparing presentations). These operations are not part of everyday computer skills; therefore, the respondents think they are less important to be known and used by teachers.
- 3. factor: Web 1.0 technology (create an e-mail group, subscribe or unsubscribe to an e-mail group, share files, install or update software, use cloud storage). Although future teachers should be able to use virtually available materials in the teaching process, only 43% of the respondents think that it is essential for teachers to be familiar with Web 1.0 technology.
- 4. factor: Web 2.0 technology (using digital imaging software, film design, music making, web design, designing digital teaching materials). The respondents have diverse opinions as to whether teachers should be familiar with Web 2.0 technology or not: 23% find it essential, 34% necessary, 29% less necessary, 14% not necessary.

(2) In the second module we were interested in the respondents' expectations regarding the utilization of ICT by the teachers of the 21st century.

The usefulness of ICT equipment in education was measured on a 1 to 5 scale (1- not helpful at all in the teaching-learning process, 5 – very helpful in the teaching-learning process). According to the respondents the use of ICT in education helps students to comprehend and learn the material ($x = 4.27$, $t = 42.61$, $p < 0.05$).

Therefore, they believe that it is necessary to use ICT equipment in the teaching-learning process. All of them think that teachers should use it in order to transmit the material more efficiently. Almost a quarter of them believe that ICT equipment should be used in the classroom and 40% think that they should be used in the major part of the teaching-learning process. According to one third of the respondents, traditional and ICT equipment should be used to the same extent.

(3) The usefulness of ICT equipment in education based on the students' personal experience was measured with a set of questions containing 10 items. The use of ICT in the teaching process by their secondary school teachers and their lecturers in higher education was measured with separate questions.

The use of ICT in secondary school education does not show satisfactory results. Although there are endless possibilities to utilize ICT equipment, 18.87% of the respondents have never encountered their use in secondary school, because their teachers did not utilize them. Just over half, 56.60%, answered that their teachers used ICT equipment to elaborate new materials, exemplify something or simply communicate in 25% of the class activity. Only 18.87% said that their teachers used ICT equipment in 50% of the class activity and 5.66 % answered that they were used in 75% of the class activity.

In universities the use of ICT equipment shows more satisfactory results. All lecturers use some kind of ICT equipment in their classes. There are very few who hardly use them (7.55%). The majority of the lecturers use digital materials and methods to make their presentations more understandable (41.51% of the teachers in 50% of classes, 45.51% in 75% of classes and 5.66% in 100% of classes).

Comparing the results, it can be concluded that secondary school teachers use less ICT in their classes than lecturers in higher education ($\bar{x}_1 = 2.11$, $SD = 0.77$, $\bar{x}_2 = 3.49$, $SD = 0.72$, $t = -10.38$, $p < 0.05$).

According to the respondents, their lecturers in higher education use static visual aids (texts and pictures) (85.19%) and dynamic teaching materials such as animations, simulations and videos (72.22%) in teaching. The respondents believe that ICT equipment helps them in understanding and learning new materials. It can also be stated that interactive and dynamic teaching materials containing multimedia elements engage their attention more intensely than static visual aids.

Lecturers often use an e-learning framework that offers several possibilities – a characteristic of interactive websites – in order to solve various communication, teaching and teaching arrangement tasks (64.18%).

Wikipedia, a popular online source of information, could also be an important aid in the teaching-learning process, but it is rarely used by teachers (18.52%). The reason for this might be some critical opinions regarding the quality and reliability of its contents. A lower percentage of teachers use interactive materials that actively involve learners (31.48%). Video sharing services are used by 35.19%. Web applications and software enabling photo sharing or video chat are used even more rarely (5.56% and 3.70% respectively).

5. Conclusions

In this study we asked the opinions of first-year informatics students and first- and second-year engineering students regarding the use of ICT equipment in education, their views on the teaching-learning process and the teaching career and their expectations regarding teacher training.

We revealed the trainee teachers' opinions about the characteristics of "good" and "bad" teachers based on their school experience and their expectations of what teachers should be like. The respondents approached the questions unreservedly and from several viewpoints. Their opinions correspond with the descriptions from the literature and express that it is important to have good and well prepared teachers who can play an important role in children's lives through exemplary behaviour and education.

Regarding the importance and use of ICT equipment and multimedia in education they believe that teachers should use them more intensively in the teaching process, but they do not think that teachers of the 21st century should possess high-level computer skills.

It is the task of teacher training institutions to demonstrate the possibilities offered by ICT equipment in the teaching-learning process and to prepare future teachers to select and utilize interactive teaching materials according to their students' needs, create multimedia materials and learn to utilize those web applications that can be useful in their everyday teaching practice.

We would like to continue our study by comparing our results with the goals of the teacher training programmes, because we would like to ensure a continuity and connection among the different levels of education: leaving secondary school – enrolling in teacher training – and returning to secondary school as teachers.

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