

Perspectives of students - Future natural sciences teachers regarded teacher's role as educator

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Abstract

One of the important segments in the initial education of the teachers is creating positive attitudes of students for the importance of teachers' role as educator. The aim of this research is to determine the attitudes of students – future teachers about the role of the teacher as an educator and to determine the differences in student's attitudes regarded their sex. The study was conducted on a sample of 94 examiners, students at Teaching Faculties in Republic of Macedonia preparing for future teachers in natural sciences. Obtained results were analyzed using quantitative and qualitative analyses. Differences in student's attitudes regarded the sex were determined using Pearson chi - square test. It could be concluded that students-future teachers in natural sciences have developed positive attitudes toward teacher's role as educator, establishing teacher's personal characteristics, its authority, and reputation and building quality relations with pupils as one of the important aspect. Yet it's notable that for most of the examiners, teacher's role as transmitter of knowledge is defined as more important and priority. These findings suggest on need for greater emphasis of the teacher as a factor in creating student's personality through educational activities and realization of teacher's role as educator.

Keywords: Competences, pedagogical work, educator, students.

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1. Introduction

One of the key issues faced in front of the education nowadays is: What kind of education do we need for the 21 century? The Director-general of UNESCO, Irina Bokova emphasizes that "Societies everywhere are undergoing deep transformation, and this calls for new forms of education to foster the competencies that societies and economies need, today and tomorrow...we need a new focus on the quality of education and the relevance of learning, on what children, youth and adults are actually learning. Schooling and formal education are essential, but we must widen the angle, to foster learning throughout life.....we need a new focus on the quality of education and the relevance of learning, on what children, youth and adults are actually learning.... there is no more powerful transformative force than education – to promote human rights and dignity, to eradicate poverty and deepen sustainability, to build a better future for all, founded on equal rights and social justice, respect for cultural diversity, and international solidarity and shared responsibility, all of which are fundamental aspects of our common humanity (Foreword, paragraph 4, UNESCO, *Rethinking Education: Towards a global common good?* 2015)

One of the key questions related to the initial education of future teachers are the issues related to the teacher, particularly: How the teacher should be? Which knowledges, abilities, skills and competences he/she should have in order to full – fill his/her role and work successfully? In this context, this paper refers to one of the three previously named aspects, particularly, the role of the teacher as educator, analyzed from the aspect of students – future teachers in natural sciences.

The teachers have the key role in preparation of the youth for the challenges that future brings. The role of the teacher is not just to transmit knowledge to the children, but also to have an educational impact toward their personal development, this way realizing the educational role. The essence of the educational role is the impact on development of complete personality of the student by developing positive personal and moral characteristics, creation of positive attitudes, and development of system of values as well as abilities for critical thinking. Such complex task that refers to the individual development of the students and in the same time, their preparation for accomplishing the obligations as citizens in the contemporary global society, could be accomplished only by planed and systematic realization of the educational role of the teacher. Related to this, as the author Rubin (2012) declares: "teachers have much more serious obligation than just preparation of the students to accommodate to the environment. They must recognize their obligation to help to the students to learn how to design their present and future, not just to adjust to the status - quo situation. This means that young people should prepare for responsible independence" (Rubin, 2012).

Based on this, preparation of the teacher for this role should be given a special attention during the process of initial education of future teachers, considering the fact that to be a teacher, does not only means acquisition of knowledge and skills, but also means development of conciseness for the importance of the educational role of the teacher, building a proper view and awareness for self as a teacher during the transition from student to a teacher despite all the challenges and responsibilities that the profession teacher brings by itself. Related to these is the requirement for quality education of the teachers as a part of the agenda of UNESCO "Beyond 2015: The Education We Want ", one of the goals for education is defined as "creating a qualified, professionally responsible and motivated teachers" considering that "the quality of the education depends from the quality of the teachers" (UNESCO, "Beyond 2015: The Education We Want", 2015).

When speaking about the initial education of the teachers, many different factors should be considered if we want to create future teachers that will possess all required qualities for properly to work and to represent the teaching profession. One of the factors is the well-known fact that personal understanding of each person, teacher or professor for the question of characteristics of good teacher, how to be a good teacher and how the profession teacher is understood by others, just conform the fact that that profession "teacher" is define by numerous facts. According the results from several studies (Powell, 1992; Hollingsworth 1989; Woodlinger 1985; Weinstien 1990, noted by Collins, 2000) this is related with personal knowledge and ability that knowledge to be transmitted to others. Personal attitudes, views and believes of the person have an important role in this process. These characteristics largely determine the way that teacher understands the teacher profession, which is the goal that should

be achieved with his/her work and what is the role of the teacher upon the development of the student. "Reassessment of the beliefs what means to be a "good teacher" is very hard and resistant. The way to understand what does means to be a teacher, neither is straight, neither is easy but for sure is worth to be examined" (Collins, 2000).

For this purpose, a special instrument was created in order to determine the different approaches in teaching profession, named as Teaching Perspectives Inventory (TPI). Applying this instrument, the researchers (Pratt, Collins & Chan, 2006) determined the existence of five perspectives on teaching profession: Developmental, Nurturing, Apprenticeship, Transmission and Social reform. These perspectives on teaching determined as "mutual interrelated believes and intentions in knowledge, learning of the students and the role and responsibilities of the teacher. They are glasses upon with we inspect our work as teachers, but we are not always aware of that" (Collins, 2000). The authors Pratt & Collins suggest that teachers that have the Nurturing perspective in their work pay equal attention to achievement of academic results and to the individual development of the person. "They believe that results are consequence of the head as well as to the heart" (Pratt & Collins, 2006). They set clear standards that students should achieve, request accomplishment of the tasks but they also create an atmosphere of trust, safety and mutual cooperation in which the honesty and truthfulness are valued and encouraged. Great attention is dedicated to the self-perception of the students, considering this element as very important and with impact upon the achieved results in the learning. Similar to this perspective is the Perspective of social reform. Considering the teachers' opinion, according this perspective, teaching and learning could result to essential changes in the society. Teachers encourage their students to use a critical thinking, to ask questions, to consider about the values and ideologies, to develop critical attitudes with aim to develop an ability to have impact of the society and to improve their own life and the lives of other people (Pratt & Collins, 2006).

Considering the differences between teachers' attitudes and approaches toward the teachers' profession, Pratt and Collins (2000) determined differences based on the subject they prepare to teach. Namely, the students that are preparing for natural sciences, existence of Perspective of transmission is notable. They are mainly oriented toward clear explanation and transmission of the contents, compared with teachers that are preparing to teach humanities, languages and art, which are oriented toward development of abilities and critical thinking as a characteristics of the developmental perspective. Related to the nurturing perspective, it was noted that is more present and notable for females compared with male examiners. The conclusion from this research is that "likely, the curricula for preparations of teachers based on the subject that they are going to teach, have different impact toward the individual attitudes for teachers' profession. Therefore, it is important for each student - future teacher to encourage building and creating their own understanding of the teacher profession, creating their own, unique profile of teacher" (Collins, 2000).

Regarded the preparation of future teachers in Republic of Macedonia, they are educated for teachers at separate study programs specialized for teachers for certain subjects where special subjects are integrated with aim to ensure required pedagogical and psychological competences and knowledges (mainly subjects named as Pedagogy, Psychology, Methodic and Didactics of certain subject. For students that finished their initial studies at certain faculty (for example, biology) an additional qualification for pedagogic work is required. This qualification is named as Pedagogical – psychological qualification, and it's aim is to ensure the acquisition of the required competences for teaching profession. The requirements for this program as well as contents for study are defined in the study programs at each faculty separately. For the purposes of this paper we analyzed the study programs for future teachers for geography, mathematics and physics (Study programs from the Faculty of natural sciences, on line sources). These programs give possibility for future teachers to obtain required knowledges, abilities and competences for being a teacher. From the aspect of preparation and qualification for teachers and realization of their educational role, the current curricula in Republic of Macedonia have certain contents related to this issue, but yet, they are not sufficient. Last few years a certain modification and improvement were made in the curricula for Pedagogic – psychological qualification of the teachers in a sense of adding contents that are related with the educational role of the teacher, but yet, these changes are not implemented at all faculties. Considering this, there is still a need for improvement and enlargement of the curricula for teacher's qualifications that will contribute

toward more efficient and systematic preparation of future teachers for establishing the educational role as an important and consistent part of the work of the teachers (Mitevaska & Petrusheva, 2015). Considering the importance of the realization of the educational role, the importance of the initial education of future teachers and the contents in the curricula dedicated to development of certain characteristics that have an impact toward the successful realization of this role, are determined as important aspects in the initial education of the future teachers. Therefore, these two aspects are considered as main interest of this paper. According this, the main goal of this research is to determine student's attitudes about the teacher's role as an educator and factor in building children's personality, as well as to determine the differences in students' attitudes regarded their sex.

2. Methods and materials

Based on defined aim of the research, the attitudes of students – future teachers were analyzed in relations to the following three questions: 1) What is the importance of realization of the educational role of the teacher compared with the task to transmit knowledge? 2) How certain personal characteristics of the teacher influents toward the realization of the educational role and 3). Are there any differences in the attitudes of the respondents in analyzed questions based on the gender? The research was conducted on a sample of 94 respondents, 23 males and 71 females, students in the third and the fourth year of study at the Faculty of Natural sciences and Mathematics in Skopje, Republic of Macedonia, and study program for teachers. The research was realized using a specially designed questioner composed from open and close type questions, and a scale for measurement of the attitudes of the respondents. The test characteristics of the questioner are previously determined (Mitevaska Petrusheva, 2015). The applied scale was a four-point Likert-scale ranging from 1 (fully disagree) to 4 (fully agree). The obtained results were analyzed using basic descriptive statistics parameters and qualitative analyses of the results. Differences between the respondents based on their gender were determined using Chi-square test. The results were presented numerically in tables and graphically.

3. Results and Discussion

3.1. Educational role of the teacher

The first group of questions in applied questionnaire is related with the importance of realization of the educational role of the teacher compared to his/her role in transmission of knowledge. Obtained results suggest that most of the respondents (89.4%) agree or completely agree that teacher's task to transfer knowledge is equally important as his/her educational role (Table 1). Yet, the answers obtained of the next question related to the priorities in teachers' work (Table 2), show that the same number of respondents (89.4%) share the opinion that the priority in the teachers work is transmission of knowledge.

Table 1. Educational role and transmission of knowledge

	Male	Female	Total
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I do not agree at all	4.4%	0.0%	1.1%
I do not agree	8.7%	9.8%	9.6%
I agree	65.2%	60.6%	61.7%
I fully agree	21.7%	29.6%	27.6%
Total	100.0%	100.0%	100.0%
	$\chi^2 = 7.54, df=3, p<0.05$		Mean (3.16)

Table 2. Priority in the teachers' work

	Male	Female	Total
I do not agree at all	4.3%	2.8%	3.2%
I do not agree	13.0%	5.6%	7.4%
I agree	39.2%	43.7%	42.6%
I fully agree	43.5%	47.9%	46.8%
Total	100.0%	100.0%	100.0%
	$\chi^2 = 7.62, df=3, p<0.05$		Mean (3.33)

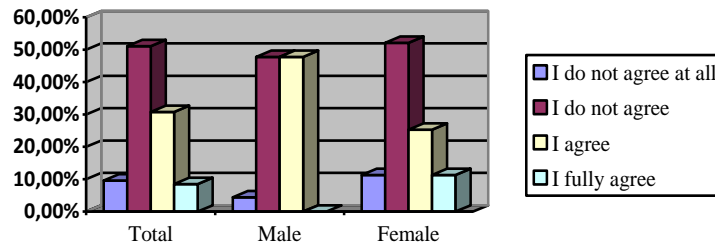
In this context is the analyses at following question that was open type question and the respondents were requested to give their opinion about the most important thing that the teacher should pay attention during his/her work in order to be a successful teacher. Obtained answers were analyzed using qualitative and quantitative analyzes and were grouped in four categories. As presented in Table 3, summarized answers from the respondents suggest that transmission of knowledge is noted as most important task in the teachers' work (37,4%), followed by establishing a quality relationship between the teacher and the student (22.7%), realization of the educational role of the teacher (14.5%) and the importance of the personality of the teacher (2.7%).

Table 3. The priority in the work of the teacher

	Male	Female	Total
Transmission of knowledge	32.2%	39.0%	37.4%
Educational component (building student's personality)	25.0%	11.0%	14.5%
The personality of the teacher	0.0%	3.6%	2.7%
Relation teacher-student	17.8%	24.4%	22.7%
No answer	25.0%	22.0%	22.7%
Total	100.0%	100.0%	100.0%

To addition of this question is the analyses of the answers obtained on the statement: "Teacher is obligated to accomplish his/her educational role only in certain problematic situations". (Figure 1). According the answers, more than the half of the respondents (60.7%) do not agree with this statement, while 39.3% of the students agree or totally agree with this statement. According the indicated answers, a part of the respondents limited the educational work of the teacher only in problematic situations and do not understand it in broader context or its effects toward the development of the personality of the students. These answers could be analyzed as negative in the context of our problem of research.

The teacher is obliged to influence educational only in certain problematic situations



Mean (2.38) $\chi^2= 6.38$ df = 3 p<0.05

Figure 1. Teacher's obligation to accomplish educational role

Based on the presented results, it could be concluded that most important aspect in the teachers work from the aspect of students – future teachers in natural sciences is transmission of knowledge. Aldo many of them consider the educational role of the teacher as important, yet it is not rated as equally important and many of them limited this role only in problematic situations. Similar findings are noted in the research realized on a sample of students – future physical education teacher's (Mitevaska – Petrusheva & Popeska, 2015). These findings can be explained with the orientation of the curricula and lack of involvement in practical teaching. These means that during the studies, students are mainly oriented toward gaining general knowledge for the subject as well as knowledge for didactical aspects of teaching process – forms of work, methods, organization of the teaching process etc. They analyze the educational work only in small segments such as determination of educational tasks and not so dedicated to their implementation. The lack of involvement in practical teaching and practical work with students could be also one of the explanations for this situations. Theoretical preparations for classes and teaching include only determination of educational tasks. Real educational work could be expected only in real educational situations which means interaction with students and facing different situations that requires different approaches in a sense of educational impact and impact on the development of the personality of the students. Both, the obtained results and noted experiences from the practice suggest on the importance of certain changes in the initial preparation of the students - future teachers regarded the realization of the educational role of the teacher.

3.2. Personal characteristics of the teacher as a factor for realization of the educational role

The next group of questions refers to the importance of certain personal characteristics that the teacher should have and which are considered important for successful realization of the educational role. Some of these characteristics are very important considering that very often teachers are role model for their students and these means to be a role model for behavior of the students, with own build system of values that will transfer through actions, not words (Gordon, 2001). For some characteristics such as integrity, consistency and principles, 62.8% from the respondents agree and 15.9% fully agree that are personal characteristics that every teacher should have. These characteristics are highly valued as personal characteristics and are noted as important factor that helps teachers to work on development of the personality of the students. The percent of interviewed students that disagree with this opinion is totally 21.3% (Figure 2).

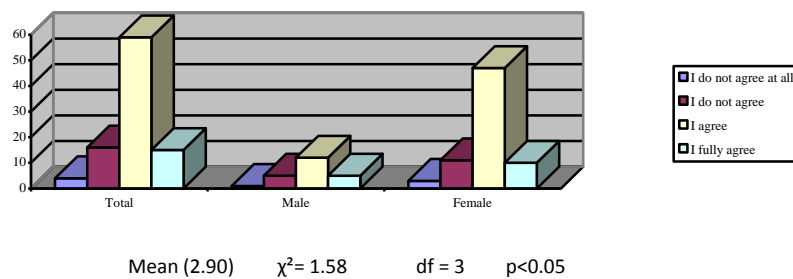


Figure 2. Personal characteristics important for realization of educational role

Other personal characteristics which importance also was examined were the authority and the social reputation of the teacher. For these characteristics totally 84% from the respondents (53.2% agree and 30.8% fully agree) declare that they consider that these personal characteristics have a positive influence upon the realization of the educational role of the teacher. A disagreement with these statement was noted in totally 16% of the respondents (Figure 3).

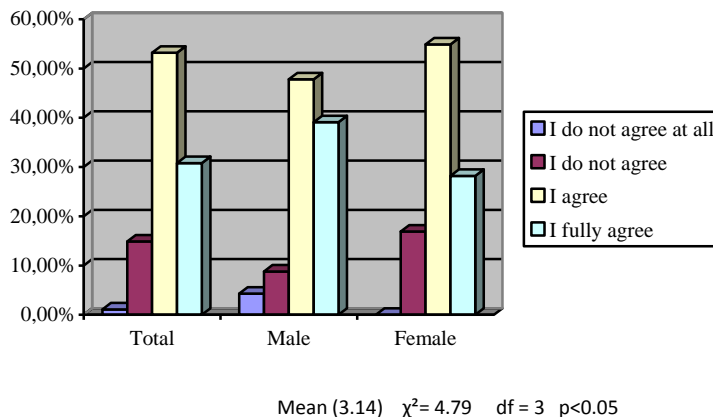


Figure 3. Impact of the authority and reputation of the teacher

Closely related with the issue of authority is the question of manners that teacher uses to building its integrity. The opinions of the respondents toward this question are almost equal. Particularly 93,6% of the respondents stated that authority should be built by mutual cooperation, respect and agreement with the students (Table 4).

Related to the social reputation of the teacher as one of his/her important characteristics, the respondents were required to give their opinion on the following open form question: Do you consider

that social reputation of the teacher is important from the aspect of educational work and why? The obtained answers were analyzed with both quantitative and qualitative analyses and they were grouped in following categories: social reputation is important; social reputation is not important; social reputation is partly important. For better understanding, obtained results are presented graphically (Figure 4). According the results, nearly half of the respondents (56.3%) declare positive and for the reason why do they consider this important, most of them stated that social reputation is significant element in the image that students create for their teacher; the teacher that has a positive social reputation is respected, have a greater positive influence on students and represents a role model of behavior as well as this characteristics was also recognized as a condition for successful realization of the educational role of the teacher. Very little percent of respondents consider that this characteristics of the teacher is partly important or is no important at all (totally around 10%) and for a reason for this statement is the attitude that having the required knowledges is sufficient condition for successful work of the teacher or that is more important whether the teacher knows or not how to transmit its knowledge to the students.

Table 4. Manners of bulding authority

	Male	Female	Total
By strict requirements, orders and commands that students should obey	8.7%	2.8%	4.3%
Through mutual cooperation, respect and agreement with it's student	87.0%	95.8%	93.6%
By controlling whether or not they have fulfilled required tasks	4.3%	1.4%	2.1%
Total	100.0%	100.0%	100.0%

Do you consider that the social reputation of the teacher is important from the aspect of his educational role and why?

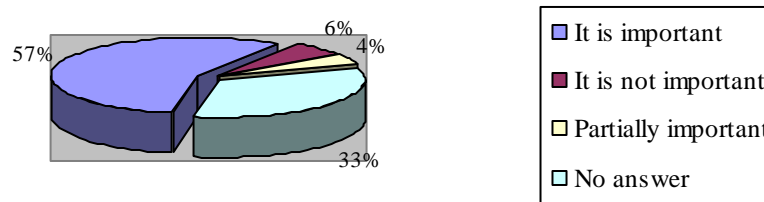
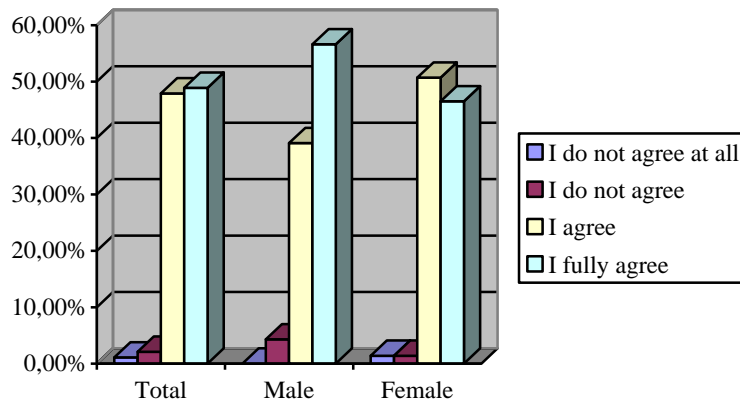


Figure 4: Social reputation of the teacher

Nearly half of the students, particularly 47, 9% of the respondents agree and 48.9%, totally agree that teacher as person with its personal characteristics and manners of behavior should represent an example and role model for his/her students (Figure 5). This remain as confirmation of the great importance of educational role of the teacher in creation of the personality of the students (Gordon, 2001; Logan, 2003).

Based on obtained results and opinions of the students – future teachers, we could conclude that the teacher should have many personal qualities and characteristics, particularly he/she should be a responsible person, with well-developed moral characteristics and internalized ethic values in order to be able to realize its educational role and to have a positive impact toward the complete development of the students. These personal characteristics are very important because teacher is not just transmitter of knowledge and evaluator. In the same time teacher is also a role model and model of behaviour for his/hers students. This is a great privilege but also a great responsibility as well. In these regard, “although is hard to be aware how we affect others with our behavior, teachers should take the responsibility to be a positive role models of behavior for their students” (Berman, Hornbaker & Ulm,

2000). According to Rebecca Alber (2011) this task, sometimes is especially inconvenient and extremely exhausting, but yet a part of the teaching profession.



Mean (3.45) $\chi^2 = 2.31$ $df = 3$ $p < 0.05$
 Figure 5: Teacher as a role model for the students

3.3. Differences in students' attitudes upon the opinion for educational role based on the gender

The last task of this research was to determine whether there are significant differences in attitudes for the importance of the educational role between male and female students – future teachers. In this aim, we used a Chi – square test. The differences between male and female participants were tested on a 0.05 ($\alpha = 0.05$) level of significance. Obtained results for each of analyzed questions are presented in Tables: 1 and 2 and consequently in the Figure: 1, 2, 3 and 5. According the values of the tests, significant differences are obtained between attitudes for educational role on male and female respondents. These results in relation with the results from qualitative analyzes suggest that at six from totally seven questions, emphasize the importance of the educational role in the teaching process is more frequent and more maintained at female students, compared with their male colleagues. At only one question, particularly the question that refers to the importance of the social reputation and authority of the teacher, male students emphasize the educational role more, compared with their female colleagues. These findings are also confirmed in the study conducted by Collins (2006) according which, the educational approach is more often used in female than male respondents.

4. Conclusion

Positive attitudes of the respondents – future teachers in natural sciences and mathematics suggest that the process of initial education of the future teachers have a positive impact in creation of positive attitudes for the importance of the realization of the educational role of the teacher. The successful realization of this role is closely related to certain characteristics of the personality of the teacher such as: consistence, integrity, social respect, authority. These characteristics are defined as factors that create a greater possibility for the teacher to have a positive impact toward the creation and development of the personality of the students. But yet, also the educational role is considered as important, when compared with the transmission of knowledge as one of the obligations of the teachers, the educational role is still in the second row position and it is not payed so much attention in the overall process of teaching and education. Based on these findings our recommendations are pointed toward the need of greater attention of the importance and realization of the educational role of the teacher during the whole educational process especially nowadays when contemporary way of life put the school and the teacher in a position to be the main educational tools for children, and sometimes more influential than parents. Therefore, the importance of this issue should be emphasized more in the curricula in initial education of the teachers, regarded their preparation and their qualification for

educational work considering the desired directions in the development of the teachers' profession, defined in some strategical document in the field of education. According our opinion, one of the manners to foster the preparation of future teachers for successful realization of the educational role is through enriching curricula with more carefully selected contents related to this issue. Other also important way is by giving greater emphasis on this issue during the practical training of students, particularly by observation and analysis of certain real educational situations during and after attending lessons in schools, analyses of different case studies, debates with students on some real situations that refers to educational role, playing roles etc.) In this way, linking theory with practice students will acquire the necessary knowledge and skills for its successful implementations.

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