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The level of benefiting from the practice schools of the mathematics Teacher candidates

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Abstract

This research study was conducted in order to determine the performances of the mathematics teacher candidates in the practice schools. In the spring semester of 2006-2007, the nine teacher candidates, in Yüzüncü Yıl University Education Faculty Primary Mathematics Teacher Program, compose the sample of the study. It determined the basic attitudes which teacher training courses aim to be gained, than teacher candidates were observed in the practice schools, and finally it was applied to the ideas and suggestions of the teacher candidates and the practice teachers. The results show that however teacher candidates have benefited from the practice studies in different ways, the level of benefiting will be better if the practice teachers and lecturers approach consciously to the subject.

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1. Introduction

While in traditional approach the role of teacher in learning – teaching is directly to present the available knowledge; today it has changed towards guiding directing to help students gain the intended behaviors. In order that the teachers will be trained in accord with these new conditions, the teachers’ training programs have became necessary to be changed. One of the most primary reasons of this program changement concerning with training of teacher candidates is that it isn’t effective if the learnt theoretic knowledge isn’t practiced. It is defined that if practice exercises are performed in real environment, it will help the teacher candidates gain the target experiences and skills and provide them know the environment the will work in before starting teaching (High Education Institution [HEI] and World Bank, 1998).

That the cooperation of school-university is an important element in pre-service of teacher education has taken “the course of practice teaching” to a different point (Dunne and Bennet, 1997). Practice teaching is a common experience that found the relation which will be useful for a meaningful and effective learning between teachers and teacher candidates and provide the sides improve (Long, 1995). Practice teachers have common responsibilities with

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universities for education of teacher candidates and their improvement in the way of profession (Goodlad, 1994). It is thought that knowledge, skill and behaviors which teacher candidates have learnt from practice teachers are an important and necessary complementary of education taught at university (Butt, 1994). Also, practice teachers are seen as persons who affect shaping the learning of teacher candidates, beliefs, thoughts about teaching job and application methods (Zanting, Verloop and Vermunt, 2001). To be able to carry out an effective and productive “practice teaching”, practice teachers should be aware of all of the aspects of learning and teaching should also be in a manner of critiquing, thinking and questioning (Tomlinson, 1995).

Not being able to reach target success in courses of teaching practice shows that the studies must be continued toward coming over the problems and troubles. Here are some troubles and problems that are faced in this field; teacher candidates’ being in able to use efficiently the field knowledge general knowledge and the knowledge of teaching job which they have learnt from practice teachers during pre-service of education (Shaw, 1992). Teacher candidates being in excited, double minded, shy and coward behaviors (Hacioğlu and Alkan, 1997). In practice schools, school coordinators and practice teachers not being aware of their duties and responsibilities towards teacher candidates adequately (Tüfekçi, 1999).

The aim of this study is to determine the level of primary school mathematics teacher’s reflecting the behaviors that they should learn with pre-service programs at application schools.

2. Method

This study has been realized by the method of special condition approach (Wilson, 1996; Tynjala, 1999; Smerdan and Burkam, 1999). In the study, the content of courses of teaching job knowledge which carried out at education faculties has been detected by document analysis. And then, behaviors which have been targeted to give teacher candidates have been obtained by carrying out interview with four teaching personnel teaching these courses at education faculty at Yüzüncü Yıl University.

At second step, the in-school activities of nine math teacher candidates of primary school who participated in the course of teaching practice have been observed in order to determine at which degree they have the opportunity to reflect the knowledge and skills they learnt in pre-service at primary schools and at which degree they can reflect by using an observation scheme prepared by the researcher.

At last step, the views and thoughts of nine teacher candidates who carried out the application and three practice teachers being responsible for them about school application have been obtained by semi-structured interviews.

3. Findings

3.1. The goals of the courses of teaching job knowledge

After re-structuring at education faculties, the contents and the courses of teaching job knowledge which take place in the four-year license program of math teacher candidates of primary school have been determined by document analysis method by benefiting from a study (Karamustafaoğlu and Akdeniz, 2002) carried out in this field. Some interviews have been also carried out with four teaching personnel who teach these courses at education faculty at Yüzüncü Yıl University about the goals and teaching these courses. The data obtained from book analysis and interviews have been given at Table 1 by being summarized as “target behavior” for each course.

<table>
<thead>
<tr>
<th>The Courses of Teaching Job Knowledge</th>
<th>Targeted Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction to profession of teaching</td>
<td>Learning of basic concepts of education, to get information about classroom and school structure, to know the elements of teaching job and teacher sufficiency, to know Turkish education system</td>
</tr>
</tbody>
</table>
### 2. School Experience I
Learning systematic structure and working of the school, getting visual knowledge about teaching job. Getting information about the relations between school management – teacher-students – the other workers.

### 3. Development and Learning
Understanding the natural structure of human being. Knowing development and learning properties of human in the basic periods of life. To be able to determine the students who have different development and learning properties and to be able to behave appropriately.

### 4. Planning and Evaluation at teaching
Knowing the all teaching methods and strategies. Having information about program development and processes. To be able to plan units of course, lecture program and daily plans. Knowing evaluation methods and using them.

### 5. Teaching Technologies and Material Development
To be able to use software programs in teaching. To be able to make teaching design in which it has various methods. Improving simple instruments which aim to get behavior.

### 6. Special teaching methods I
Teacher candidate’s learning effective and productive teaching methods and techniques that he or she uses them in his or her special field. To be able to use general teaching methods. To be able to prepare and present activities about concept teaching.

### 7. Classroom Management
Knowing the rules about classroom management. Using time during lecture well. To able to create an ideal learning atmosphere. Having knowledge about social and psychological factors which effect attitudes and behaviors.

### 8. Special teaching methods II
Teacher candidate’s preparing activities and presenting them in classroom. Improving and practice assessment materials by using of assessment and evaluation methods and techniques. Knowing and practicing of teaching techniques. To be able to use concreteness methods and techniques.

### 9. School Experience II
To be able to plan short time activities for teaching. To be able to comprehend individual differences among students at learning and developments. Having abilities to work efficient and well- matched with teachers and other personnel in school.

### 10. Education Management
Knowing the aims and basic laws of Turkish education system in general and elementary school system in particular. Having knowledge about management and education management laws. Having sufficiency about school management for staff- students-teaching facilities.

### 11. Evaluation of Course book
To be able to classify teaching materials. To be able to research and organize examination. To be able to create new approaches in evaluation of material. To be able to design and practice a Project to evaluate a teaching document.

### 12. Guidance
Knowing general guideline and concepts of guidance. Having knowledge about the content of guidance facilities. To be able to lead about profession. Learning of the aims of special teaching. To be able to determine the students who need special teaching. To be able to know environment and interfix in it.

### 13. Practice Teaching in Mathematics
Making practice in various classrooms of practice school to gain experience. Knowing and to be able to practice the curriculum of his or her area. To be able to use evaluation and assessment. To be able to be aware of incompetence and improving himself by sharing his experiences with practice teacher and practice lecturer.

### 3.2. Observations at the primary schools

In this part of the search, the in-school activities of nine teacher candidates of math have been observed to determine at which degree they have been given the opportunity to reflect the knowledge, attitudes and behaviors they are supposed to learn at faculty and at which degree they can transfer them. The observation tool used here, defined in the first step of the search, has been developed by the searcher by making use of the table of he behaviors targeted by knowledge of teaching job and also by examining “The practice teaching observation form” used in the practice exercises in schools (HEI and World Bank, 1999). Also, by interviewing the related teaching personnel in Education Faculty of Yüzüncü Yıl University, the eleven-titled observation the knowledge, attitudes and behaviors that the primary school teacher candidates of math perform during practicing process have been shown in Table 2.
Table 2. Observation Chart (N = 9)

<table>
<thead>
<tr>
<th>Behaviors</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Knowing the basic units and concepts about mathematics</td>
<td>- 1 2 6</td>
</tr>
<tr>
<td>2. To be able to display the roles and the behaviors of teaching job</td>
<td>- 2 2 5</td>
</tr>
<tr>
<td>3. To be able to use figures, graphics, formulas and tables appropriately</td>
<td>- 2 3 4</td>
</tr>
<tr>
<td>and suitably for mathematics concepts</td>
<td></td>
</tr>
<tr>
<td>4. To be able to select and use special teaching methods and techniques</td>
<td>- 1 2 6</td>
</tr>
<tr>
<td>for the lecture</td>
<td></td>
</tr>
<tr>
<td>5. To be able to use time and blackboard well preparing suitable</td>
<td>- 2 3 4</td>
</tr>
<tr>
<td>atmosphere during the lecture</td>
<td></td>
</tr>
<tr>
<td>6. To be able to make abstract mathematic concepts concrete</td>
<td>- 2 4 3</td>
</tr>
<tr>
<td>7. Improving simple instruments suitable for the subject</td>
<td>1 2 2 4</td>
</tr>
<tr>
<td>8. Preparing activity for teach theoretic concepts and present at</td>
<td>- 2 3 4</td>
</tr>
<tr>
<td>classroom</td>
<td></td>
</tr>
<tr>
<td>9. Preparing evaluation materials at learning level of students</td>
<td>- 4 3 2</td>
</tr>
<tr>
<td>10. To be able to perceive individual differences of students at</td>
<td>- 3 3 3</td>
</tr>
<tr>
<td>learning and progress</td>
<td></td>
</tr>
<tr>
<td>11. Planning of units, lecture and daily program in which aims and</td>
<td>- - 1 8</td>
</tr>
<tr>
<td>targets are clearly</td>
<td></td>
</tr>
<tr>
<td>12. To be able to start, keep going and finish the lecture</td>
<td>- 2 2 5</td>
</tr>
<tr>
<td>13. To be able to use education technology</td>
<td>3 2 - 4</td>
</tr>
</tbody>
</table>

NO = Never Observed (regarding the opportunities of Practicing School). O = Not Observed. PO = Partly Observed. ILO = Observed in Intended Level.

As seen in Table 2, it can be said that more than half of the teacher candidates have shown competence in many topics such as performing primary behaviors of teaching job, making use of suitable methods and techniques related to the subjects, preparing activities and plans concerning the course. Yet it has been observed that some of teacher candidates have shown incompetence in performing professional roles in comprehending personal learning differences among students about making good use of teaching materials, tools and instruments and computer. Finally it has been observed that the facilities of practicing school and its teachers have made it impossible for few teacher candidates to make use of teaching technologies and performing their behaviors about improving simple instruments and preparing assessment materials.

3.3. The ideas of practicing teachers and the students

3.3.1. The ideas of practicing teachers

The answers to the interviews made at the end of the term in question-answer form with three practicing teachers in three different primary schools where practicing exercises have been performed are as follows.

- How and at which level do you share your experiments with teacher candidates?

Practicing teachers have defined that the teacher candidates are generally excited because of giving a lecture. They have said that the most significant contribution of them to teacher candidates is about minimizing this excitement. Further more, they have helped teacher candidates feel themselves at the case by asking the students who are ready listening them in a different care and interest to pretend listening to an ordinary lecture. Regarding the lectures the student teachers will give, practicing teachers have transferred their experiences about defining
important concepts, the degrees of abstractness and concreteness and the levels of exemplifying the topic related to
the lecture. They have expressed that they had same advices to them about the topics, which require experience such
as communication with the students defining the levels of the questions they will ask to the students and using
productively the time of the course.

- What are the problems and difficulties the teacher candidates have came across throughout the
practicing?

Practicing teachers have expressed that the obligation of carrying spontaneously out the practicing exercises
with the courses and exams of the faculty is the most crucial problem in behalf of the teacher candidates. Expressing
they have observed that the teacher candidates have had difficulty in coming ready to the practicing school are
approaching and again in that period their interest has decreased and their motivation has been decreased because of
the attitudes of students of the practicing school towards the lecture.

Furthermore, it has been observed by the practicing teachers that the topics of math of primary school of 6-
7-8 classes such as measures, percents, statics, permutation, probability, modulus and operation are the topics which
the teacher candidates have the most difficulty in teaching.

- What are your advices for the teacher candidates?

It can be said that the practicing teachers evaluate this question with a very large perspective; they
significantly expressed that the primary condition of teachers’ being be well observed in order to improve fast in
their jobs. They suggested that they follow the educational and technological improvements related to their areas,
pay attention to the communication with their students and keep it spirited, transfer knowledge and skills at the
highest level to their students and be aware of being a model to the students in every aspect.

3.3.2. The views of teacher candidates of math

At the last step of the study, with nine teacher candidates who have completed practicing exercises and have been
observe by the researcher throughout the practice, an interviews has been carried out. And in this interview
regarding the following question, the ideas of students about the practicing exercises have been tried to obtain.

- What did practicing exercises contribute to you? And how would you expect them to be?

Teacher candidates expressed that with the exercises they practiced at schools; their interest and will towards
teaching job increased, they saw their lack of mathematics subjects better and they understand the necessity and
importance of the lectures of knowledge of teaching job and they felt better about how a respectful job it is by
performing teaching jobs.

In order that a better practicing exercise should be performed, teacher candidates said that first of all the
practicing teachers at schools should know and pay attention to their duties. They desired that all kinds of tool-
instruments and technological tools such as computer, which can be used at lectures, should be at schools and they
should be allowed to use them by the school and management. They expressed that they saw it essential that the
classes not be too crowded, the number of practicing students in the responsibility of practicing teacher not be more
than 3-4 and for the practicing exercises, and if possible, the schools of full-day teaching be preferred.

4. Results and Recommendations

Teaching job exercises which can be regarded as the lost rehearsal of teacher candidates before starting job can
be said to provide very good results together with some problems and troubles in practice. In these exercises carried
out in the base of faculty-school cooperation in order to obtain the best results, it is apparent that practicing teaching
personnel-teacher and teacher candidates whom can be seen as the basic actors, know, pay attention and carry out
their duties. In the light of this experimental study, it has been concluded that the teacher candidates are competent
in explaining the basic concepts and principles of mathematics, in performing professional behaviors in using tools, instruments and materials suitable for the course and in making plans about the subjects to be lectured.

It has been concluded that the practicing teachers contributed mostly to the teacher candidates about sharing experiences. They supported the teacher candidates about same topics such as feeling themselves at more ease at schools and how and at which level they should give lectures more careful. Furthermore, they have thought that the teacher candidates have had difficulty in explaining same subjects in mathematics.

They have suggested them that in the base of the success of the job, they have these principles; a “teaching love” which keeps itself alive and a “renewing itself” which has continuity. Teacher candidates think that these kinds of practices have somehow contributed to them in every aspect. It can be expressed that they have reached the belief that the practicing exercises should be continued in spite of some problems faced with during the studies.

When thought that the levels of interest and focus of the student an a course are shaped with the thought of having a good mark, the teacher candidates should be constantly warned about the importance and necessity of practicing exercises by practicing teaching personnel and teacher. In the same way, being aware of their duties and responsibilities, teaching personnel and teachers should carry out this course with a coordinated study. A teacher candidate, getting in the atmosphere of teaching in all aspects, will be more eager in his studies and thus the target success in teaching practicing course will be a little bit approached.

References