Pre-service teachers’ self-efficacy for alternative assessment

Cigdem Sahin-Taskin

Abstract—Since the paradigm of teaching and learning has been changed in Turkey as well as in many countries throughout the world, the primary curriculum introduced in the 2005–2006 academic year considered constructivism as a model. Through these changes, the importance and use of alternative assessment strategies are also emphasised. This brought the issue of training pre-service teachers in which they can use these strategies effectively when they become teachers. Many researchers agree that self-efficacy is one of the determining issues in understanding pre-service teachers’ actual behaviour in practice. This research aims to investigate pre-service teachers’ self-efficacy on alternative assessment. This study is supported by the Scientific and Technological Research Council of Turkey (project number 112K321). Data are collected from the primary pre-service teachers in CanakkaleOnsekiz Mart University. The ‘Self-efficacy Scale for Alternative Assessment’ developed by the author was administered to pre-service teachers. In addition to this, 7 pre-service teachers are also interviewed to elaborate the issues raised in the scale. Findings revealed that pre-service teachers have high self-efficacy regarding the use of alternative assessment. Among the pre-service teachers, there is no statistically significant difference regarding gender and regarding their educational background. Pre-service teachers’ responses to the interviews also supported the findings from the quantitative part of this research. Although pre-service teachers indicated that the nature of the subject and students’ level will influence their way of using alternative assessment strategies, they all claimed that they will use these strategies when they become teachers.

Keywords—Alternative assessment, pre-service teachers, teacher training

1. Introduction

In the past few decades, there has been a major shift in our understandings of learning towards constructivism in which learners actively construct their own meaning. This influenced the use of assessment in education and alternative assessment strategies are required to be utilized in practice. Macellan (2004:312) stated that alternative assessment is characterized as an alternative to standardized, norm-referenced, multiple choice testing. Besides, Herman, Klein and Wakai (1997) indicated that alternative assessment encourages students to think critically, draw their own conclusions to complex problems and create extended responses. These features are also emphasised in constructivism. Similarly, Anderson (1998) pointed out that constructivism supports alternative assessment practices. She draws attention to the differences between the underlying assumptions of alternative and traditional assessment and explained that alternative assessment treats learning as an active process in which students actively search for new meanings to transform their present understanding and produce knowledge.

Educators and policy makers have expressed a preference for alternative assessment all over the world. Through the National Curriculum for primary education in Turkey, teachers are also required to use the alternative assessment methods during their teaching. Ministry of National Education [MEB] (2006) stated that alternative assessment strategies such as projects, portfolios, self and peer assessment should be used as well as the traditional assessment strategies in order to assess and evaluate the students in primary schools. MEB (2006) further explained that students should be involved in a project work and a performance during their education. A detailed explanation of developing and using alternative assessment strategies in primary education is also provided by the teacher guides prepared for each subject. The reform initiatives about assessment in the Turkish primary curriculum entail addressing the issue of training pre-service teachers in which they will be able to use alternative assessment strategies effectively when they become teachers. Therefore, understanding to what extent pre-service teachers feel adequate themselves about using alternative assessment methods has become necessary for providing effective training. Researchers agree that pre-service teachers’ self-efficacy beliefs play an important role in teacher training programmes in terms of raising competent teachers (Çakıroğlu, Çakıroğlu & Bone, 2005). Bandura (1977) emphasised that expectations of self-efficacy are the most powerful determinants of behavioural change. Therefore, understanding pre-service teachers’ self-efficacy for alternative assessment will help us to understand how we can help pre-service teachers become effective practitioners regarding the use of alternative assessment strategies.

2. Aims of the research

This research aimed to understand primary pre-service teachers’ self-efficacy towards the use of alternative assessment. Regarding this aim, the research questions are stated as follows:

- What are the primary pre-service teachers’ self-efficacy levels towards the use of alternative assessment?
- Are there any differences between primary pre-service teachers’ self-efficacy beliefs regarding gender?
- Are there any differences between primary pre-service teachers’ self-efficacy beliefs regarding their educational background?

1Corresponding author – Associate Professor in the Department of Primary Education, CanakkaleOnsekiz Mart University, Turkey – csahin@comu.edu.tr.
3. Instrument and Data Collection

The data for this research were collected by utilizing ‘Self-efficacy Scale for Alternative Assessment’ developed by Sahin Taskin (2013). The instrument contains 4 subscales. These subscales are named as: Assessment Process, Alternative Assessment Strategies, Thinking Skills and Students’ Responsibility of Assessment. Cronbach Alpha is calculated as .89 for the overall scale and Cronbach Alpha for the subscales of this instrument ranged from .69 and .83. The instrument included 21 items with point Likert response options ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Data were gathered from 199 pre-service teachers (151 female and 48 male) enrolled in primary education department (year 3 and year 4) in Çanakkale Onsekiz Mart University. In the qualitative part of the research, pre-service teachers are interviewed regarding their self-efficacy towards the use of alternative assessment strategies. 7 primary pre-service teachers were volunteered to be interviewed. The interviews were recorded and then transcribed. The pre-service teachers were also guaranteed that their names will remain anonymous.

4. Data Analysis

Qualitative and quantitative research methods were used to analyze the data in this research. In the first phase of the research, data were collected through the ‘Self-Efficacy Scale for Alternative Assessment’. Statistical Package for Social Sciences (SPSS) 21.0 was used in order to analyse the data. In order to understand the primary pre-service teachers’ self-efficacy towards the use of alternative assessment descriptive statistics were utilised. Then, independent sample t test is used to compare pre-service teachers’ self-efficacy beliefs for males and females. The independent sample t test is also used to compare pre-service teachers’ self-efficacy beliefs regarding their educational background. In the second phase of the research, semi structured interviews were used in order to understand pre-service teachers’ self-efficacy regarding alternative assessment strategies. Thus, they were required to elaborate the issues raised through the scale.

5. Findings

5.1. Findings of the self-efficacy scale for alternative assessment

The pre-service teachers’ scores on the ‘Self-efficacy Scale for Alternative Assessment’ were analysed by utilising descriptive statistics (Table 1).

Table 1. Descriptive statistics of the subscales of self-efficacy scale for alternative assessment

<table>
<thead>
<tr>
<th>Factors</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment Process</td>
<td>199</td>
<td>2.33</td>
<td>5</td>
<td>4.23</td>
<td>0.45</td>
</tr>
<tr>
<td>Alternative Assessment Strategies</td>
<td>199</td>
<td>2</td>
<td>5</td>
<td>4.13</td>
<td>0.58</td>
</tr>
<tr>
<td>Thinking Skills</td>
<td>199</td>
<td>1.67</td>
<td>5</td>
<td>4.28</td>
<td>0.61</td>
</tr>
<tr>
<td>Students’ Responsibility of Assessment</td>
<td>199</td>
<td>1.75</td>
<td>5</td>
<td>4.14</td>
<td>0.62</td>
</tr>
</tbody>
</table>

The analysis indicated that pre-service teachers have high self-efficacy towards using alternative assessment strategies when they become teachers. Examining the results closely revealed that Thinking Skills subscale received the highest (M=4.28 SD=0.61) and Alternative Assessment Strategies subscale received the lowest (M=4.13 SD=0.58) means. This revealed that although pre-service teachers have relatively low self-efficacy in using alternative assessment strategies, their self-efficacy was highest for the possibility of preparing and using activities for assessment strategies that enable students to use creative and critical thinking skills (X=4.28 SD=0.61).

In order to compare male and female pre-service teachers’ self-efficacy for alternative assessment strategies the independent sample t test was performed (Table 2).

Table 2. Comparison of pre-service teachers’ self-efficacy for alternative assessment by gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>p</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>151</td>
<td>4.21</td>
<td>0.43</td>
<td>0.36</td>
<td>0.91</td>
</tr>
<tr>
<td>Male</td>
<td>47</td>
<td>4.14</td>
<td>0.57</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The analysis above showed no statistically significant difference between female (M=4.22, SD=0.43) and male (M=4.14, SD=0.57) pre-service teachers regarding self-efficacy for alternative assessment, conditions;t(196)=0.1, p=0.36. This result revealed that male and female pre-service teachers’ self-efficacy for alternative assessment strategies are not different.

In Turkey, secondary education includes Teacher High Schools that are considered as a main resource for providing students to Education Faculties. Therefore, understanding if there are any differences pre-service teachers’ self-efficacy for alternative assessment strategies regarding the high school they were graduated was considered as an important issue in this research (Table 3).
Table 3. Comparison of pre-service teachers’ self-efficacy for alternative assessment by educational background

<table>
<thead>
<tr>
<th>Educational Background</th>
<th>N</th>
<th>X</th>
<th>Sd.</th>
<th>p</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>High school</td>
<td>177</td>
<td>4.20</td>
<td>0.46</td>
<td>0.69</td>
<td>0.40</td>
</tr>
<tr>
<td>Teacher High Schools</td>
<td>20</td>
<td>4.15</td>
<td>0.52</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Independent sample t test results revealed that among the primary pre-service teachers taking the ‘Self-Efficacy Scale for Alternative Assessment’, there is no statistically significant difference between who are graduated from Teacher High Schools (M=4.15, SD=0.52) and other High Schools (M=4.20, SD=0.46) pre-service teachers, conditions; t(195)=0.6, p=0.69.

5.2. Findings of the interviews

All of the pre-service teachers claimed that they will use the alternative assessment strategies when they become teachers:

- I think I will use, because in the new system, process is more important than the results, therefore I will use, I think I will use through enabling the students to participate the lesson PT1.
- Of course, I will use PT3.
- Can you explain more? R
- Because, at the moment, usually there are practices emphasise process in the alternative assessment, before, it emphasised the results, I always think that students cannot explain certain things within a limited time I think we need to spread this to the time, I think we can assess in this way PT3.

The pre-service teachers above claimed that they will use alternative assessment strategies in future. For example, both of the pre-service teachers (PT1 and PT3) indicated that the teaching–learning process is important in the primary curriculum. They therefore emphasised that they need to assess students within this process. Through the primary curriculum, teachers were suggested to use alternative assessment strategies during their practice. This enables them to focus on the learning process, constructing and applying knowledge rather than only remembering. For this reason, pre-service teachers above stated that concerning the requirements of the primary curriculum; using alternative assessment strategies in teaching become necessary.

Although all pre-service teachers indicated that they will use alternative assessment strategies when they become teachers, many of them stated that the subject and classroom situation influence the use of these strategies:

- I think, to tell the truth, I will use according to the classroom situation; I mean the way I assess and teach, I can arrange according to the students’ level in the classroom PT7.
- Even if I don’t use all of them, I can use depending on the subject I teach PT7.
- Of course, for example, according to the subject, for example in Maths, in Turkish, I use them when I think it is necessary to use, when I think it will be useful PT5.
- In what subjects do you think you will use more? R
- In Maths and Turkish, Social Studies PT5.
- Why? R

They are usually information based for example, if they have lack of knowledge, according to the others, compare their deficiency PT5.

The pre-service teachers above emphasised that they will use alternative assessment strategies according to the classroom situation and the subjects they teach. For example, PT7 claimed that she will use these strategies according to the classroom situation. Her explanations revealed that she considers students’ level is an important issue in understanding classroom situation. Besides PT7’s explanation, PT4 stated that subject is an important issue of using alternative assessment strategies. Supporting her statement, PT5 claimed that she will use the strategies according to the subject she is going to teach. She also claimed that she will use alternative assessment strategies in these subjects in order to understand whether they have a lack of knowledge or to compare their deficiency with other students in the classroom. PT5 then explained that she will use these strategies in Maths and in Turkish since they are information based subjects. But, in her explanation she did not clarify what she meant by information based. Field notes also revealed that she found difficult to explain what it means and therefore she gave short answers to the questions. Interviews showed that majority of the pre-service teachers classified subjects taught in primary school as verbal (such as: Turkish, Social Sciences) and numerical (such as: Maths). In this case, Maths requires different sorts of skills and abilities compare to Social Sciences and Turkish. Supporting this explanation, Stodolsky (1988) also emphasised the distinctiveness of the skills, abilities and attitudes students are expected to be developed in Maths and Social Sciences. However, PT5 considered Maths as well as Turkish and Social Sciences as information based. Similar explanation is also given from the following pre-service teacher regarding this issue:

Alternative assessment strategies could usually be used in subjects require verbal skills, these, there are visual assessment too, here, (…) the assessment is done visually, but for example, assessment is done through rubrics in social sciences, in Turkish, in Maths PT3.

PT3 indicated that alternative assessment strategies can be used mostly in subjects require verbal skills. However, like PT 5, in spite of her explanation; she also claimed that rubrics can be used in Maths as well as in Social Sciences and in Turkish. Examining closely, there was a recognition that when pre-service teachers give examples about using alternative assessment strategies during teaching, despite their explanations, they claimed that they will use these strategies in Maths. These explanations may show that either pre-service teachers do not have adequate information to explain these issues as their practice is limited with Teaching Experience Course; or pre-service teachers as well as in service teachers, would use variety of skills they
During their training and especially the Teaching Practice course in which pre-service teachers work on his own, they will be aware of their learning. PT5 indicated that they will mostly use portfolio. PT2 stated that she will use portfolio, because it involves students’ all academic work during their school life. She also stated that when she was in primary school, her teacher used portfolios and she therefore had a chance to observe that it is helpful in practice. From her explanation we can conclude that they need to gain experience about alternative assessment strategies in practice. This also indicates the importance of the courses they have during their training and especially the Teaching Practice course in which pre-service teachers have an opportunity to practice and be able to gain experience about these strategies. In addition to the pre-service teachers’ explanations above, the following pre-service teachers stated that they will use other alternative assessment strategies as well as portfolio:

I can use portfolio, attitude scale PT4
There is portfolio I will use, I will involve parents, there is attitude scales I can (...) use, also, teachers give projects, I cannot really remember the proper name I can use that, that’s all I can think of now PT1
Peer assessment, rubrics, self-efficacy, self-assessment PT5

The pre-service teachers’ explanations above revealed that they believe they will use attitude scales, project works, self-efficacy scales, peer assessment, self-assessment, rubrics, as well as portfolio. In parallel with the pre-service teachers’ responses to the ‘Self-efficacy Scale for Alternative Assessment’, majority of the participants indicated that they will use variety of strategies when they become teachers.

The reasons pre-service teachers believe alternative assessment strategies will help students to take responsibility for their own learning are exemplified in the following statements:

I mean s/he sees if s/he is adequate enough, s/he can compare her/himself with their friends, s/he will learn what are the objectives of the lesson and to what extent s/he can reach them, maybe, rather than s/he has passed or failed, s/he will be aware of her/his learning PT5
Maybe s/he can be more willing, well through the assessment, through the positive feedback, through the portfolio, a portfolio on his own, s/he can be more responsible PT4

PT5 and PT4 pointed out the relationship between the alternative assessment strategies and students’ awareness and the responsibility of their learning. They claimed that through using alternative assessment strategies, students will be more aware of and responsible for their own learning. These findings also supported the pre-service teachers’ responses to the ‘Self-Efficacy Scale for Alternative Assessment’.

6. Conclusion

The findings of this research provide insights into pre-service primary teachers’ self-efficacy regarding the use of alternative assessment. The findings indicated that majority of the pre-service teachers has high self-efficacy regarding the use of alternative assessment strategies when they become teachers. Supporting this result, all pre-service teachers stated in the interviews that they will use variety of these strategies during their teaching.
ever, they also claimed that factors such as nature of the subject and students’ level would influence their use of strategies. Further studies can be conducted to understand to what extent pre-service teachers use alternative assessment strategies effectively when they become teachers. Studies investigating the way practising teachers use alternative assessment strategies in different subjects will also enlighten teacher trainers and educators to develop strong self-efficacy of pre-service as well as practising teachers regarding the use of these strategies.

Among the pre-service primary teachers taking the ‘Self-efficacy Scale for Alternative Assessment’, there is no statistically significant difference regarding gender. Reviewing the literature revealed that these findings are similar to the previous research about pre-service teachers’ self-efficacy (Gencer&Çakıroglu, 2007). There is also no statistically significant difference among the pre-service primary teachers regarding the high schools they graduated. Examining closely, this scale was administered to pre-service teachers who are on their 3rd and 4th years. These results may show that the training pre-service teachers have during their first two years takes away the differences regarding their self-efficacy for alternative assessment. Therefore further investigations can be carried out in order to understand if there are any differences among the pre-service teachers regarding self-efficacy when they start their training in the university.

7. Acknowledgements

I would like to thank the Scientific and Technological Research Council of Turkey (TUBITAK) for sponsoring this research (project number 112K321).

8. References


MEB (2006). *İlkokulKurumlarındakiÖlçmeveDeğerlendirmeKonuluGenelge*. Sayı: B.08.0.TTK.0.01.0.01.0


