

### **An Action Research on Employing Constructivist Multi-Assessment Strategy in Teacher Education**

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#### **Abstract**

The purpose of this study was to investigate the effectiveness of utilizing the multi-assessment strategy through a constructivist learning atmosphere with regard to perceptions of the pre-service teachers. The participants were 98 third year (junior) pre-service teachers attending to classroom management course in a public university in Turkey. Action research methodology and mixed method were utilized to collect data in this study. The results showed that classroom management field was acknowledged very positively by the most of the pre-service teachers. The authentic activities utilized during the authentic instructions were positively recognized, although they admitted that all process was tiring and took long time. Although open ended questions yielded both positive and negative aspects, utilizing multi-assessment strategy was indicated mostly by the participants as highly effective. Findings indicated that employing constructivist assessment in teacher education may yield positive impacts especially when doing it learning by doing.

**Keywords:** multiple assessment, constructivism, teacher training, pre-service teachers

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### **Introduction**

It is witnessed to the fact that today's understanding of education and educational practices in schools are very different from that of older generations. The three traditional basics of education – reading, writing and arithmetic – are no longer sufficient to help learners to deal competently with the changing needs of societies. Gilligan (2007) cites the result of a survey indicating that most of the competitive companies and their leaders require people with applied skills and who have higher order thinking skills. From this perspective, schools have grown in significance to achieve much more than the production of information, or simply telling learners what to think. Therefore, the old style of drilling students through traditional methods and activities, and measuring their outcomes at the end of the process, are not considered as characteristics to be associated with an effective lifelong learning process (Eryaman, 2007).

Evaluation is an essential component of teaching and learning process in understanding whether students have learned, whether teaching has been effective, or how best to address student learning needs.

### **Constructivist teaching-learning and evaluation process**

Traditional assessments favor a previously set goals and objectives, and pass and fail system. This is based on an after-the-fact understanding, incorporating checking what the students have learned (LaBonty & Everts-Danielson, 1992). On the one hand, in this system, students and subject areas are isolated, facts are memorized, and testing is often far away from real life situations (Gagnon & Collay, 2006). On the other hand, constructivist assessment deals with the process of the learner's construction of his/her own learning and authentic learning experiences assist students in the development of appropriate and effective understandings (Wilson, 1994). Regarding the literature, it has been observed that constructivist and authentic evaluation approaches are critical in this paradigmatic transformation in education (Sylvia, 1999). Hargreaves, Earl and Schmidt (2002, p. 70) state that "changes in classroom assessment represent major paradigm shifts in thinking about learning, schools and teaching". Constructivist theory and practice in schools caused radical changes in teacher education programs for many years (Cochran-Smith, 2001). This approach allows teachers to make subjective judgments about learners' knowledge, figure out using a feedback system in the teaching process, and meet student needs reflectively (Hargreaves, Earl & Schmidt, 2002, Eryaman & Genc, 2010). Kyriacou (1993) indicates the need to monitor and evaluate students' educational progress, so that the teacher can understand whether the learning process has been successful. Therefore the evaluation process should be aligned with the methods of instruction (Gilligan, 2007).

Recent years have witnessed new, authentic, and alternative assessment systems as compared with the traditional systems (Birembaum, et. al., 2006; Coll, Rochera, Mayordomo & Naranjo, 2007). Educators state that a constructivist learning-teaching atmosphere focuses on developing higher order thinking and problem solving skills, and challenging multiple authentic steps that are needed to reflect multiple learner outcomes, through multiple assessment procedures (Abdal-Haq, 1998; Akar, 2004; Bahar et al., 2006; Effie, 2004; Jadallah, 2000; Kesal & Aksu, 2005; Semerci, 2001; Stein, Isaacs, Andrews, 2004; Taras, 2001; Tynjälä, 1999).

In constructivist evaluation, the process is more important than the product: the teacher is not seen as the source of knowledge, but as the facilitator of it. As learning and assessment process in a constructivist classroom are embedded (Anderson & Puckett, 2003; Brooks & Brooks, 2001; Ganyon & Collay, 2006), the nature and content of the course fit very well into utilizing a multi-assessment strategy employing authentic tasks that reflect multiple learner outcomes. There is no comparison between students; learners are involved in the evaluation process; evaluation is related to activities in the classroom; evaluation helps learning and it considers multiple point of views. (Bahar et al., 2006; Boud, 1995; Dochy & Moerkerke, 1997; Effie, 2004; Jonassen, 1994; Kinnucan-Welsch & Jenlink, 1998; Marlowe & Page, 1998; Özden, 2003; Semerci, 2001;

Şaşan, 2002; Taras, 2001; Tynjälä, 1999). Jonassen (1994) also states that constructivist evaluation requires authentic activities, process-based inquiry, and goal-free, multi-assessment based procedures. Coll, Rochera, Mayordomo and Naranjo (2007, p. 787) also clarify that “the assessment system is based on a theoretical perspective linked to social-cultural constructivism, according to which assessment, educational help and learning are closely related.”

Although constructivism is not a new phenomenon in the education world, it still took decades to have an effect on the Turkish education system. The Turkish Higher Education Council (YÖK) constructed new programs for teacher training institutions from the beginning of the 1998-1999 academic year. The Turkish primary curriculum was the first to be developed and advanced in terms of moving from a traditional, competitive, and teacher-centered approach into a learner-based constructivist one during the 2005-2006 academic year. We, as the educators, have witnessed a very long historical process of employing a traditional assessment system in teacher education, as well as at other school levels in Turkey. However, as the elementary and secondary schooling in Turkey recently began to utilize non-traditional instructional methods and techniques, the student evaluation process was also affected by the new system. Although the teachers have experienced certain difficulties, the new system, which includes authentic assessment processes, has the potential to become an integral part of the learning-teaching process.

There are research studies in Turkey aimed to evaluate the competencies of teachers concerning authentic assessment. These studies mostly revealed that teachers were not competent or somewhat competent in application of authentic assessment in classrooms (Akgun et. al., 2005; Mintah, 2003; Sağlam et. al., 2008; Yaşar et. al., 2005). In addition to these studies, Akar, Erden, Tor and Şahin (2010) conducted a qualitative study revealing that teachers still use traditional instruction and assessment procedures in their daily practices. According to a survey study (Çakan, 2004), teachers at elementary and secondary schools in Turkey were deemed “inefficient” in the student assessment process. Therefore, as the research (Dhindsa et al., 2007; Yıldırım, 2004) indicates the importance of student perception when they are responsible in their learning – as required by the constructivist approach – I decided to collect learners’ opinions on the authentic assessment system by employing it.

### **Rationale for the Action**

I strongly believe that the classroom life in teacher training institutions should offer experiences and activities that utilize real life situations in order that meaningful and purposeful learning occurs. Such an environment proves a challenge for pre-service teachers to bridge the gap between their experiences and the schools in which the students will be educated to become competent and critical citizens in society (Stein, Isaacs, Andrews, 2004). I deliberately selected the Classroom Management course since student teachers make unique contributions on this course, and it covers one of the major concerns of teachers when they start the profession. This course is offered to junior (third year) pre-service teachers in teacher training institutions in Turkey. It deals with the basics of student behavior, characteristics and functions of classroom context and physical environment, teaching rules, orders and routines, use of time in the classroom, communication, motivation and the teaching and learning process. In addition to that, personal experience has showed me that many pre-service teachers, when they were appointed teachers, have visited us in the Faculty in order to consult us, and learn how to react in the ‘real life’ classroom, especially for student evaluation. This course therefore seemed to me to be the most suitable one to be considered for constructivist assessment procedures. Stringer (2008) indicates that action research is deemed to be the best approach when the researcher aims to utilize constructivist pedagogy in the learning environment and to employ the multi-assessment strategy (Brooks & Brooks, 1993; Wiggins, 1997). The purpose of this study was to investigate the effectiveness of utilizing the multi-assessment strategy in a constructivist learning atmosphere with regard to the perceptions of the pre-service teachers. The following research question guided this research: What are the perceptions of

the pre-service teachers with regard to employing multi-assessment strategy in the Classroom Management course?

### Method

As Stringer (2008) states, when teachers are asked to do research in their classrooms, they are horrified when thinking about the complex and sophisticated research instruments, analysis and theoretical results. However, action research is a unique systematic inquiry that aims to enhance our learning-teaching process in the classroom environment. In line with this crucial aim, action research was used in this study that benefited from a mixed method containing both quantitative and qualitative methods and techniques.

### Participants

The participants of this research were 98 students, in two sections, enrolled on the Classroom Management course in the English Education department, in a public university in Turkey. Twenty one (21) (21.4%) of the pre-service teachers were male and 77 (78.6%) were female.

### Instrumentation and Data Collection

Firstly, I decided to develop an instrument (alpha coefficient: 0.77) to collect data from the students regarding the assessment activities in the classroom. It consisted of three parts. The first part of it collected demographic information related to pre-service students' gender and academic grade averages. The second part included 25 Likert type items related to students' opinions of the implemented classroom management course, based on multi-assessment strategy. The items in the questionnaire were rated on a 5-point Likert scale as follows: 1 – Strongly disagree ( $\bar{x}$ =1.00 – 1.80); 2 – Disagree ( $\bar{x}$ =1.81 – 2.60); 3 – Partly agree/Neutral ( $\bar{x}$ =2.61 – 3.40); 4 – Agree ( $\bar{x}$ =3.41 – 4.20), and 5 – Strongly Agree ( $\bar{x}$ =4.21 – 5.00). The last part of the questionnaire offered an open-ended items asking the pros and cons of utilizing multi-assessment based instruction in the Classroom Management course. Three experts within the field of curriculum and instruction checked the instrument

### Data Analysis

At the end of the action research, a questionnaire collecting pre-service teachers' opinions about the Classroom Management course that employed multi-assessment strategy was distributed. Quantitative findings from the questionnaire were analyzed descriptively. Mean values of the participants' responses were computed for each item. In order to make clear comments on the data, the mathematical mean intervals of the items were recalculated. For example, if the pre-service teachers indicated their responses with a mean score of 4.45, this was commented as 'completely positive'. Then all mean values were ordered from the higher values to the lower ones in a table. In addition to that, their responses were analyzed using thematic analysis technique (Braun & Clarke, 2006; Miles & Huberman, 1994; Marshall & Rossman, 1995; Yıldırım & Şimşek, 2005).

Classroom Management is offered for four class hours (50 min. per class hour) per week throughout a semester and all activities were limited by 14 weeks. Within the frame of the study, a course outline was firstly prepared and it was delivered to the student teachers at the first course meeting. This informal first meeting session acted as the needs analysis for the action, and my intention to implement the course as process-based, appeared to fit into the needs of the learners very well. In this action research, the researcher suggested to the pre-service teachers a list of mostly Turkish, but some English, readings, documents, books, and selected websites. In the first week, as was explained earlier, the pre-service teachers were informed

about the course procedures. Some of the selected activities that were followed during the course were as below:

- Sharing the pre-service teachers' experiences which they obtained during the previous field works ; related to classroom management
- Seminar activities & presentations
- Analyzing Turkish and English articles and transforming them into academic posters
- Guest school principal and his speech on discipline problems commonly faced in schools
- Watching discipline related movies ("Stand and Deliver" (1988, directed by Ramón Menéndez) and "Dangerous Minds" (1995, directed by John N. Smith) & preparation of movie reports
- Individual and collaborative analyses of selected cases related to discipline & motivation
- Peer evaluation on classroom management plans
- Submission of the portfolios

All grading was done in line with individual and peer assessment procedures, except for the second exam. A part of the second exam (30%) was done through a 40 item achievement test. The other part of this exam (70%) was also based on authentic activities. Their portfolios that contained the individual classroom management plans reviewed and partially assessed by peers, were substituted for the final grades and peer review.

### Results

The following information is a summary of quantitative means of data collected from the pre-service teachers through the questionnaire with regard to their opinions on employing multi-assessment based strategy in the learning process (Table 1).

Table 1. Mean and Standard Deviation Values Related to the Opinions of the pre-service Teachers

	$\bar{X}$	SD
VERY POSITIVE	Classroom management is an important field in the teaching profession	4.95 .221
	I believe that when in the professions, I will benefit from the classroom management course I took.	4.94 .241
	The information we take from this course will be beneficial in the field teaching during the last year	4.72 .533
	My confidence increased after taking the classroom management course	4.51 .721
	The case study analyses were a beneficial part of this course	4.44 .733
	The movies that was shown in the course were enjoyable	4.42 .919
	After the course, we realized that classroom management has links with various fields	4.39 .727
	The portfolios that contained classroom management plans were beneficial	4.26 .977
	Powerpoint presentations and handouts of them helped us to learn the course better	4.22 .936
	POSITIVE	Classroom discussions were beneficial in the course
Seminar and article analyses that were done in cooperative groups were beneficial		3.84 1.250
Beforehand, I never thought that classroom management was so important		3.74 1.357

	Seminar activities helped me to better understand classroom management	3.73	1.031
	The multi-assessment strategy that the instructor followed in the course instead of the regular exams helped me to better understand the classroom management	3.71	.952
	I understood after doing the seminar study that classroom management has important links with other fields	3.68	1.080
	The course hours (2+2) were enough to understand the classroom management course	3.67	1.138
	Academic articles helped us to see what is being done in the field classroom management	3.65	1.016
	Employing multi-assessment strategy in the course provided justice & equal treatment in measuring student success	3.58	1.121
UNDECIDED / MEDIUM	Inviting guests to this course was beneficial	3.37	1.287
	The Classroom management course can be effective regardless considering the physical environment	3.21	1.177
	Consideration of the attendance for evaluation purposes of the course was good	3.20	1.478
	Academic articles & poster study helped me to understand classroom management	3.17	1.201
	Group activities of seminar and article presentations prevented me from showing my individual performance	3.03	1.432
	The Classroom environment should have been more student centered in order to be effective	2.98	1.153
NEGATIVE	The Crowded classroom environment was an obstacle for effective course implementation	2.37	1.135

As illustrated in the Table 1, the following items were considered as very positive: teachers consider classroom management as an important field in the teaching profession after taking the course ( $\bar{x}=4.95$ ); they think that they will benefit from the classroom management course in their future experiences in the profession ( $\bar{x}=4.94$ ), and the information that pre-service teachers obtained through this course will be useful in their last year during their field experiences in schools ( $\bar{x}=4.72$ ).

Pre-service teachers also indicated that their confidence increased after taking the course ( $\bar{x}=4.51$ ). As pertaining to the authentic activities in the course, the case study analyses were beneficial ( $\bar{x}=4.44$ ); the movies were enjoyable ( $\bar{x}=4.39$ ); the preparation of the portfolios that contained classroom management plans were beneficial ( $\bar{x}=4.26$ ) and powerpoint presentations and handouts helped them to learn the course better ( $\bar{x}=4.22$ ).

The following items were indicated as positive: the classroom discussions ( $\bar{x}=4.19$ ) and article analyses that were done cooperatively in the course were beneficial ( $\bar{x}=3.84$ ). Pre-service teachers stated that beforehand, they never thought classroom management was so important ( $\bar{x}=3.74$ ); seminar activity helped them to understand the classroom management better ( $\bar{x}=3.73$ ); multi assessment strategy followed by the instructor instead of regular exams helped them to understand the classroom management better ( $\bar{x}=3.71$ ); they understood after the seminar study that classroom management has important links with other fields ( $\bar{x}=3.68$ ); the course hour was enough ( $\bar{x}=3.67$ ); academic articles were beneficial to see what is being done

in the classroom management field ( $\bar{x}$ =3.65) and employing multi-assessment strategies provided justice and equal treatment in measurement and evaluation ( $\bar{x}$ =3.58).

The following items were indicated as ‘undecided’: Inviting guests was beneficial ( $\bar{x}$ =3.37); classroom management course can be effective regardless of considering the physical environment ( $\bar{x}$ =3.21); consideration of the attendance for evaluation purposes in the course was good ( $\bar{x}$ =3.20); academic articles and poster study helped me to understand classroom management ( $\bar{x}$ =3.17); group activities of seminar and article presentations prevented them from showing their individual performance ( $\bar{x}$ =3.03) and the classroom environment should have been more student-centered in order to be effective ( $\bar{x}$ =2.98). Pre-service teachers, interestingly, stated that a crowded classroom environment was not an obstacle for the effective implementation of the course.

### **Strengthens and Limitations of the Multi-Assessment Process**

This section presents the results of the two open ended questions asking for the pre-service teachers’ opinions as related to strengthens and limitations aspects, and the three things most often remembered about multiple assessment based course implementation. Table 2 presents the results of the thematic analysis together with frequencies related to the strengthens and limitations of employing multiple assessment based course implementation.

Table 2

Themes & Frequencies on strengthens of multi-assessment based course implementation

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#### **Activities:**

- Multiple assessment (process) and its fairness (15)
- Benefits of group work & increasing cooperation and responsibility (11)
- Benefits of portfolio preparation process (10)
- Movies, visual aids, technology implementation (4)
- Contribution of projects and research studies to learning (4)
- The fair effect multiple assessment
- Case study analyses (2)
- Intensive practice in classroom management (2)
- Effectiveness of seminar and article presentations showing problems in classroom management field (2)
- Observing different methods of instruction (2)
- Fairness in student attendance (for final grades)

#### **Characteristics of classroom management course:**

- Student centeredness % (9) and “real life” based course implementation (4)
- Being aware of the relationship between classroom management and other fields (3)
- Understanding that the classroom management is not just “discipline” (2)
- Instructors’ effective teacher model (2)
- Didactic and the most beneficial course (2)

#### **Course attainments:**

- Gaining insight and knowledge of the teaching profession (13)
  - Developing research skills (12)
  - Equal participation to the course (7)
  - Increasing knowledge of the teaching profession (4)
  - Permanent learning because of intensive course content (4)
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- Learning empathy with students

**Affective characteristics:**

- Entertaining course implementation (14)
- Effective communication with the instructor & fluency of the course (7)
- Recognition of motivation (6)
- Not having exam anxiety (3)

**Classroom environment**

- Amusing classroom atmosphere (5)
  - Intensive discussion in learning environment (3)
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Note: Numbers of responses are shown within the parentheses

Firstly, I asked pre-service teachers to understand the strengths and limitations aspects of multiple assessment based course implementation as pre-service teachers, if any. Then I organized the students' responses into two major categories: strengths and limitations of the course implementation. The results of the thematic analysis yielded the following themes: activities, characteristics of classroom management course, course attainments, affective characteristics, and classroom environment.

With respect to the theme of 'activities', fair implementation of multi-assessment strategy (N=15), group work and its positive effect on cooperation and responsibility (N=11), and the beneficial process of portfolio preparation process (N=10) were all heavily flagged up by the pre-service teachers. Other responses, with regard to the positive aspects of the multiple assessment strategy, were stated by the participants in Table 2. Regarding the 'characteristics of the Classroom Management course' theme, nine pre-service teachers stated that student centered instruction (N=9) and real life-based implementation (N=4) were also positive aspects of the course. Besides, they were aware of the multidisciplinary construction of the Classroom Management course (N=3). Although many pre-service teachers stated the following sentiments with similar quotations in their responses, one of them indicated their gains as below:

*I learned a lot of theoretical knowledge and practical tactics that I will surely use during my professional life. My self-trust increased. I was also very impressed to follow the course instructor who fulfilled all theory into practice as an effective model.*

Related to the 'course goals and attainments' theme, thirteen pre-service teachers indicated that they gained insight and recognition of the teaching profession. They also stated that the course developed their research skills (N=12) as well. The following quotation was observed in many students' responses to the first open ended question: "This course is the most important pedagogical course I have ever taken".

One of the crucial themes found in the responses of the participants was the 'affective aspects of the course'. Pre-service teachers indicated that the entertaining course implementation (N=14), effective and comfortable communication (N=7), and understanding the importance of motivation in students (N=6) were the most positive aspects. Six students also went on to state that they never had exam anxiety because of the implementation of multi-assessment strategy. Participants stated that the classroom environment allowed for creating an amusing classroom atmosphere (N=5) and for free discussions (N=3) related to the topics.

Although the responses of the pre-service teachers yielded a theme of 'activities' positively received, limitations of the same theme were also indicated by them, such as allocating most of their times to the projects and task only in this course (N=44) and facing up to the difficulties of group work (N=18).



Table 3  
 Limitations of multi-assessment based course implementation

**Activities:**

- Allocating too much time for the projects and tasks (44)
- Debates / difficulties / non-communication in group-works (18)
- Frequent use of technology in the presentations (10)
- Exhausting portfolio preparation process (9)
- Group-works prevented them from showing actual individual performances (6)
- Not having traditional testing (2)
- Lacking activities toward the KPSS (central teacher qualification exam) in the course

**Characteristics of classroom management course**

- Grading the student attendance (6)
- Being in a hurry in the activities because of lack of time (2)
- Limiting such an important course with one semester

**Affective characteristics:**

- Increased anxiety because of multiple assessment

**Classroom environment**

- Crowded classroom size and difficulty of managing the classroom

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Note: Numbers of responses are shown within the parentheses

Some pre-service teachers (N=6) did not like the fact that their attendance was taken into account when grading their success, and two pre-service teachers stated that they were always in a hurry to catch up with the activities in time. Although most of the pre-service teachers stated that multi-assessment strategy decreased their anxieties toward testing, a pre-service teacher indicated as opposed to this view. Lastly, a student indicated that classroom size and difficulty of managing all people in the classroom where a lot of activities had occurred was a handicap in terms of 'classroom environment' theme.

### **Discussion and Conclusion**

Since constructivist approach employs multiple criteria and viewpoints (Jonassen, 1994; Semerci, 2001), this study aimed to teach the use of effective and authentic assessment procedures that reflect non-traditional instructional implementations, through employing a continuous assessment understanding. This action research study clarified that utilizing multi-assessment strategy within process-based instruction appeared to yield a highly positive impact on pre-service teachers. The results can be discussed within the framework of 'positive' (pros) and 'negative' (cons) aspects. These were the main umbrella categories of the themes derived from the perceptions of the pre-service teachers as related to the utilization of multi-assessment strategy in the course. In our study 'very positive' and 'positive' responses were collected from the pre-service teachers for the classroom management field, mainly in the teaching profession. The pre-service teachers recognized the importance of an interdisciplinary course in their future career in the teaching profession. Moreover, although it was a tiring process both for teachers and students, qualitative results showed that utilizing multi-assessment strategy decreased test anxiety of the pre-service teachers, as was stated by some participants. These findings are similar to Doğan and Kaya (2009), and Gündoğdu's (2010) studies, which found that using authentic instruction and assessment improved the attitudes of pre-service teachers toward their tasks, and decreased their test anxieties. Students were sometimes involved in peer check, and peer assessment sessions in the classroom. At first, although many pre-service teachers seemed to be unwilling to be a part of such activities, they indicated through the open-ended questions that they gained self- and mutual trust through the assessment process. Black & William (2003) also report a positive reaction

from students, when students had an opportunity to receive feedback from peers. Research on student involvement in assessment process indicates positive perceptions by the students and teachers (Elkhader, 2008).

There is also ample positive research on the effectiveness of utilizing a portfolio system in educational settings (Aytunga, 2008; Bailey, 1997; Ediger, 2000; Ersoy, 2006; Ocak, 2006). In our study, although many students similarly asserted that the portfolio preparation process taught them a lot in preparation for their future career, a similar number of pre-service teachers mentioned that they were overwhelmed by this process, as was also found by Akar (2004). Obviously, it was a tiring process that gathers together all the work, however this process also taught them about the contemporary side of the profession. There is also ample research on teachers' awareness of the benefits of authentic assessment (Bekiroğlu, 2008; Elharrar, 2006; Yseldyke & Olsen, 1999). However, as parallel to the findings in our study, there are also concerns about the amount of time spent on this, the burden, inadequate knowledge of how to assess students, and crowded classrooms; (Aschbacher, 1994; Lawrence & Pallrand, 2000; Meyer & Tusin, 1999). Although a positive appreciation of the course has been observed, the heavy burden of the pre-service teachers during the semester, such as assignments, individual projects, group works, movie reports and portfolio preparation caused them to be tired of the multi-assessment strategy.

Teachers have difficulties with student assessment. The results of a survey study (Sylvia, 1999) showed that high school teachers' views of their pre-service assessment training lacked. Besides, this research indicates that designing and implementing traditional assessment techniques rated highest, and training in authentic assessment methods ranked lower. These results show us how training teachers in authentic assessment in their pre-service education is important. Teacher educators should benefit from multiple applications of assessing student behavior, and they teach how to do that in practice through a 'teaching by doing' system during the pre-service teacher training process. Since this study is an action research, experimental studies may be designed to measure the effect of utilizing multi-assessment strategy on students.

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