

IDENTIFYING PHYSICAL EDUCATION TEACHERS' PERCEIVED COMPETENCE AND NECESSITY REGARDING IMPLEMENTATION OF ALTERNATIVE ASSESSMENT METHODS AND THEIR FREQUENCY OF USE

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Abstract:

This study aimed at finding out secondary school physical education teachers' overall perception and perceived competence regarding implementing of alternative assessment methods along with frequency of using them. Study participants were comprised of 142 physical education teachers from state schools in Trabzon province during the 2012-2013 education–instruction year. "Teacher Competency" questionnaire developed by Banoğlu (2008) was used. The five-item scale is comprised of four parts. Part one includes demographic data about participants, part two is about "teachers' overall perceptions regarding implementation of alternative assessment methods" (not necessary-quite necessary), part three includes "teachers' perceived competence regarding alternative assessment methods" (unsatisfactory-very satisfactory), and the last part is about "frequency of teachers' using alternative assessment methods (never/quite often)". Data analysis was done at significance level of 0.05 by using "SPSS for WINDOWS 20". In data analysis, frequency, percentage and arithmetic mean were calculated from participants' responses in all of the three parts. Arithmetic mean range was calculated with the logic of 5 columns and 4 ranges. Value of each range was found as $4/5=0.8$. Arithmetic mean for teachers' overall perceptions regarding using of alternative assessment methods was found as $X=3.17$. According to teachers, alternative assessment methods are moderately necessary as seen from range values obtained from the questionnaire. Portfolio ($x=26.1$) was found to be the leading alternative assessment method teachers consider not necessary. It was followed by ($x=20.4$) concept maps. As for the methods considered rarely necessary; performance task ($x=17.6$) and peer assessment ($x=12.7$) were found. Under moderately necessary methods, project ($x=22.5$) and group assessment ($x=26.1$) were found. Check list ($x=49.3$) and self assessment ($x=43$) were listed as necessary methods. Lastly, quite necessary methods were reported as rubric ($x=21.1$) and check lists ($x=14.8$). It was understood that mostly teachers regard themselves competent about alternative assessment methods ($x=3.53$). They find themselves incompetent mainly in relation with concept maps (3.16) and portfolios ($x=3.30$). The teachers regard themselves competent about check lists, rubric, project, performance tasks, peer assessment, self assessment and group assessment (3.42-4.22). The study revealed that teachers mostly use alternative assessment methods at moderate level ($x=3.06$). Performance task was found the most frequently used method ($x=3.41$). It could be inferred from range degrees in questionnaires that according to overall mean of frequency of teachers' using alternative assessment methods ($x=3.06$), the frequency is low (2,62-3.41). Thus, it could be suggested "frequency of teachers' using alternative assessment methods is mostly not at desired level".

Key words: Alternative assessment methods, education-instruction

Introduction

Today rapidly developing science and technology affect not only science world but also entire of the social life and oblige introducing of new arrangements. As a part of this new paradigm, the phenomenon of education is brought into discussion again and seeking is ongoing for new things. In the face of all these changes, individuals are required to acquire new skills in order to adapt to community and improve. Rapid development of science and technology has also brought questioning of the concept of education. Main concern of many countries in the information era has been bringing up individuals capable of reasoning, understanding, questioning, investigating, and solving problems.

New quest is sought for a more effective process of education and instruction. Education systems bringing up individuals with conditioned and stereotyped minds lag behind contemporary developments. Those educated with traditional mentality cannot keep up with developments in science and technology or contribute to overall development of their country. The countries which realize that situation have already started questioning their education systems and practices. Departing point for such questioning is how to educate human beings who can access to, use and produce information (Güneş, 2007).

With an eye to harmonize Turkish National Education System with changing conditions of the era, Head Council of Education and Morality of National Education Ministry implemented restructured primary and secondary education curricula based on universal approaches such as "life-long learning" and "learning to learn" within the framework of curriculum development. As a result of this implementation, the theoretical background of Turkish curricula switched from a rigid behaviourist approach towards constructivism (MEB, 2005).

In this scope, new curricula of Classroom Teaching Programs and Mathematics, Science and Technology, Turkish, Social Studies, Information Technologies, Religious Culture and Moral Knowledge, Physical Education, Visual Arts, English and Music were developed covering the first five grades of elementary education as well as Mathematics, Language and Expression, Physics, Chemistry, Biology, Information and Communication Technologies, Religious Culture and Moral Knowledge, Turkish Literature and English for secondary level. Renewed curricula are built on the idea of educating citizens in a way to allow them to investigate, question, learn how to learn, and think creatively and critically (Yıldırım, 2006).

A number of approaches and implementations have come up in Turkey as a result of the constructivist approach along with newly developed curricula in effect since 2005. Similarly, within the context of implementing new approaches of learning-teaching techniques, new applications were introduced regarding redefining teacher and student roles and also determining learning objectives and learning levels.

As a part of the renewed curricula, assessment and evaluation requirement besides expectation from teachers changed as well. Result-oriented assessment and evaluation approach was replaced with process-oriented approach. As for philosophy of instruction, teacher-oriented instruction was replaced with student-oriented instruction. According to constructivist learning, students can learn to learn provided that they are actively involved in learning process and assess themselves within the process. Renewed elementary curricula include not only traditional assessment and evaluation methods but also alternative assessment methods for the learning process. For process assessment, also using of alternative assessment methods such as observation forms, performance tasks, project assignments, self assessment, and group and peer assessment.

The changes implemented in the curricula can bear a positive effect on the education system if they are implemented accurately and effectively. For ensuring this, the biggest responsibility falls onto teachers as practitioners. In this process, some studies found challenges during the implementation phase. The studies showed that capacity of teachers is low in relation with functioning of the renewed curricula and assessment and evaluation methods proposed by the program (Erdal, 2005, Çalık, 2007, Ören and Tatar 2007, Tabak, 2007, Gelbal and Kelecioğlu, 2007).

Physical education is one of the courses whose curriculum was renewed at secondary education level. Physical education lesson is an integral and complementary part of general education. According to objectives of the lesson and students' development features, physical education lesson helps students develop healthy, moral, happy and well-balanced personalities at both individual and social extent (Yılmaz and Gündüz, 2007). Main goal of teaching physical education is given in respective curriculum as follows; "to contribute to individuals' physical, psychomotor, cognitive, emotional and social development, and ensure their life-long participation in physical activities (MEB, 2005). To achieve this goal, students must be involved in gradual learning activities planned for learning by doing-living and must be aware of the extent of their achievement in the end of the activities. To put differently, learners need to be active participants in learning and assessment process. For effective implementation of the renewed curriculum for physical education, alternative assessment and evaluation methods could be useful for process evaluation besides traditional ones.

Objectives of physical education course in physical, psychomotor, cognitive, affective and social domains await measuring and assessing. Since learning objectives of the course cover various areas, teachers must have knowledge about, develop, use and assess different types of assessment and evaluation instruments.

According to Şirin, Yıldız, Mülazımoğlu and Erdoğan (2007) study "Teachers' Views about New Elementary Physical Education Curriculum" launched in "2006-2007" academic year, physical education teachers find the level of practicality of the 6th grade physical education curriculum is "moderate" against sub-dimensions of "overall curriculum and general aims" and "objectives", while it is "low" for sub-dimensions of "teaching and learning process" and "assessment & evaluation".

In Yılmaz and Gündüz's (2007) study "Views of Physical Education Teachers in Ankara Central Elementary Schools about Implementation of Assessment and Evaluation Techniques", it was found that physical education teachers "do not employ at all" the approach of involving students in the process by means of self assessment, peer assessment and group assessment during measurement of student success. However, no study was found in the literature about physical education teachers' perceived competence and necessity regarding implementation of alternative assessment methods and their frequency of use.

To fill this research gap, this study was carried out to identify physical education teachers' perceived competence and necessity regarding implementation of alternative assessment methods and their frequency of use.

Method

Study Group

Study participants were comprised of 142 physical education teachers from state schools in Trabzon province during the 2012-2013 education–instruction year. The "Teacher Competency" questionnaire in five-item Likert type scale was used. The questionnaire comprised of four parts was implemented in order to find out physical education teachers' perception regarding necessity, sufficiency and frequency of alternative assessment methods.

Data and Collection

Data collection instrument was administered to physical education teachers working in secondary schools at a meeting convening all of the physical teachers from state schools in Trabzon. There are 254 physical education teachers at state secondary schools in Trabzon. Of those, 200 teachers could attend the meeting due to several reasons. 55 of the 200 questionnaires were left out of the study due to missing information. Data collection instrument was developed by Banoğlu (2009).

Data Analysis

Data analysis was done at significance level of 0.05 by using "SPSS for WINDOWS 20". In data analysis, frequency, percentage and arithmetic mean were calculated from participants' responses in all of the three parts. Arithmetic mean range was calculated with the logic of 5 columns and 4 ranges. So, the value of each range was found as $4/5=0,8$.

Results

The aim of present study is to find out secondary school physical education teachers' overall perception and perceived competence regarding implementing of alternative assessment methods along with frequency of using them.

For the aim of this study, answer is sought for following research questions:

What is the level of teachers' overall perception regarding implementation of alternative assessment and evaluation methods?

What is the level of teachers' competence perception regarding implementation of alternative assessment and evaluation methods?

What is the teachers' frequency of using alternative assessment and evaluation methods?

Results were presented under respective sub-dimensions.

Results from the first sub-dimension of the study; what is the level of teachers' overall perception regarding implementation of alternative assessment and evaluation methods?

Overall arithmetic mean of participant teachers' perceived necessity of using alternative assessment and evaluation methods was found to be $\bar{X}= 3.17$. Also 49.3 % of the participants ($n=70$) find check lists necessary, while 8.5 % ($n=129$) think opposite. 20.4 % of the teachers don't think that using concept maps is necessary. Only 3.5 % of them regard it necessary. While 21.1 % of the participants find rubrics necessary, 12 % find unnecessary. For project assignments, 19 % of participants think it is needed, whereas 7.7 % have opposite views. Moreover, 4.2 % of the teachers have negative thoughts about performance assignments. 12 %, 10.6 % and 12.7 % of the teachers regard unnecessary alternative methods of self assessment, group assessment and peer assessment, respectively. Lastly, the use of student portfolios is regarded necessary by 9.9 % only.

What is the level of teachers' competence perception regarding implementation of alternative assessment and evaluation methods?

It was seen that mostly teachers regard themselves competent about alternative assessment methods ($x=3.53$). The teachers' highest competence score was obtained from methods such as check lists ($x=3.67$), self assessment, group assessment ($x=3.65$), performance tasks ($x=3.60$) and project assignments ($x=3.53$), while the lowest competence was found in relation with concept maps ($x=3.16$) and portfolios ($x=3.30$). The scores of concept maps and portfolio remained below average. It can be said that teachers perceive themselves competent moderately on these methods.

What is the teachers' frequency of using alternative assessment and evaluation methods?

The study revealed that teachers mostly use alternative assessment methods at moderate level ($x=3.06$). Performance task ($x=3.41$) and rubric ($x=3.29$) were found to be the most frequently used methods, while lowest frequency was found with concept maps ($x=2.45$) and portfolio ($x=2.59$). Also frequency of peer assessment ($x=3.19$), group assessment ($x=3.21$) and self assessment ($x=3.12$) methods was above average.

Discussion

Teachers' perception regarding necessity of implementing alternative methods ranged between quite necessary-not necessary at all. Rubrics and check lists were reported as quite necessary methods. As for the methods regarded less necessary, they were found as concept maps, portfolios and performance tasks. The participants could have responded under negative influence of insufficiency of topics suitable for assessment via concept maps, difficulty of preparing and grading them and lack of samples. Furthermore, the teachers could have had relatively negative perceptions regarding portfolios due to the lack of instruction and examples about them.

It is interesting that teachers consider performance assignment unnecessary and rarely use them. Teachers are familiar with that method due to its similarity with homework. In this study, teachers' perception regarding necessity of alternative assessment and evaluation methods was found to be "moderately necessary" against average values. This finding seems in parallel with Çalık's (2007) finding "teachers regard assessment and evaluation process in renewed curriculum" and Banoğlu's (2009) finding "Computer technology teachers consider alternative assessment and evaluation methods on renewed curriculum". On the other hand, Şirin et al. (2007) found "teachers have negative attitude towards assessment and evaluation methods under assessment and evaluation sub-dimension of new curriculum". In addition, Doğan and Kutlu (2007) revealed that both teachers and students are not qualified in new assessment and evaluation methods, which affects their perceptions regarding use of them negatively. In our study, it was seen that teachers regard themselves competent about alternative assessment methods. The result seems contradictory with Çakan (2004)'s finding "Secondary school teachers (Physical Education, Painting, Music, Turkish Language, Mathematics, Natural Sciences, etc.) perceive themselves less competent than their elementary school peers in assessment and evaluation".

According to our study, teachers perceive themselves most competent in check lists, self assessment, group assessment, performance task and project assignment; whereas they have the lowest perception regarding concept maps and portfolios. This seems similar to the findings by Erdal (2005) "teachers are incompetent in using concept maps", Ören and Tatar (2007) "teachers use concept maps the least". Also it was seen that teachers often use alternative assessment methods at moderate level. This finding is also in parallel with Şirin et al.'s (2007) finding "teachers use alternative assessment methods at a certain extent" and Tabak (2007)'s finding "teachers do not use them sufficiently". The highest frequency of use was found with performance task and rubric, the lowest frequency of use was seen in concept maps and portfolios. This result supports Ören and Tatar (2007) citing "one of the least frequently used alternative assessment methods by elementary school teachers is concept maps" and Erdal (2005) suggesting "concept map is the least frequently used method". It was understood that concept maps and portfolios are the least preferred methods. It can be inferred from the finding that teachers use methods which they think unnecessary less frequently than others. Teachers should be taught well alternative assessment methods, given practical training, and trained about easily accessed sources. In this way, their perceptions regarding necessity of alternative assessment methods and thus their attitude and frequency of use can be improved. Moreover, it deserves further research why teachers do not prefer certain methods. Present study lacks dimensions about using physical suitability and skill tests by physical education teachers. Hence, another study is recommended to be carried out by adding those methods.

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Tables

Table1. Range Values of Questionnaire Items

Not Necessary	Incompetent	Not at all	1.00-1.80
Rarely necessary	Rarely Competent	Very rarely	1.81-2.61
Moderately necessary	Moderately Competent	Rarely	2.62-3.41

Necessary	Competent	Often	3.42-4.22
Quite necessary	Quite Competent	So often	4.23-5.00

Table 2. Frequency, Percentage and Averages of Teachers' Attitudes towards Implementing Alternative Assessment Methods

Method	Unnecessary		Rarely necessary		Moderately necessary		Necessary		Quite necessary		X
	f	%	f	%	f	%	f	%	f	%	
Check List	12	8.5	16	11.3	23	16.2	70	49.3	21	14.8	3.51
Concept Map	29	20.4	20	14.1	39	27.5	49	34.5	5	3.5	2.86
Rubric	17	12	13	9.2	22	15.5	60	42.3	30	21.1	3.51
Project Assignment	27	19	17	12	32	22.5	55	38.7	11	7.7	3.04
Performance Task	26	18.3	25	17.6	30	21.1	55	38.7	6	4.2	2.92
Portfolio (Student Product File)	37	26.1	25	17.6	29	20.4	37	26.1	14	9.9	2.76
Self Assessment	17	12	14	9.9	30	21.1	61	43	20	14.1	3.37
Group Assessment	15	10.6	15	10.6	37	26.1	60	42.3	15	10.6	3.31
Peer Assessment	18	12.7	18	12.7	30	21.1	53	37.3	23	16.2	3.31
General Average											3.17

Table 3: Frequency, Percentage and Averages of Teachers' Perceived Competent regarding Implementing Alternative Assessment Methods

Method	Incompetent		Rarely competent		Moderately competent		Competent		Very competent		
	f	%	f	%	f	%	f	%	F	%	or
Check List	3	2.1	13	9.2	33	23.2	71	50	22	15.5	3.67
Concept Map	10	7	27	19	47	33.1	46	32.4	12	8.5	3.16
Rubric	4	2.8	17	12	31	21	64	45.1	24	18.3	3.64
Project Assignment	6	4.2	16	11.3	34	23.9	68	47.9	18	12.7	3.53
Performance Task	3	2.1	19	13.4	32	22.5	65	45.8	23	16.2	3.60
Portfolio (Student Product File)	12	8.5	16	11.3	46	32.4	53	37.3	15	10.6	3.30
Self Assessment	7	4.9	11	7.7	33	23.2	64	45.1	27	19	3.65
Group Assessment	7	4.9	11	7.7	37	26.1	56	39.4	31	21.8	3.65
Peer Assessment	8	5.6	12	8.5	32	22.5	60	42.3	30	21.1	3.64
General Average											3.53

Table 4. Frequency, Percentage and Averages of Teachers' Frequency of Using Alternative Assessment Methods

Method	Never		Very Rarely		Rarely		Often		So Often		or
	f	%	F	%	f	%	f	%	f	%	
Check List	19	13.4	15	10.6	42	29.6	42	29.6	24	16.9	3.26
Concept Map	43	30.3	19	13.4	55	38.7	22	15.5	3	2.1	2.45
Rubric	18	12.7	12	8.5	41	28.9	52	36.6	19	13.4	3.29
Project Assignment	17	12	18	12.7	54	38	44	31	9	6.3	3.07
Performance Task	10	7	15	10.6	39	27.5	62	43.7	16	11.3	3.41
Portfolio (Student Product File)	34	23.9	27	19	48	33.8	28	19.7	5	3.5	2.59
Self Assessment	21	14.8	20	14.1	38	26.8	46	32.4	17	12	3.12
Group Assessment	20	14.1	13	9.2	46	32.4	43	30.3	20	14.1	3.21
Peer Assessment	23	16.2	10	7	45	31.7	44	31	20	14.1	3.19
General Average											3.06