



EPISTEMOLOGIC BELIEFS OF PRE-SERVICE MUSIC TEACHERS

MÜZİK ÖĞRETMEN ADAYLARININ EPİSTOMOLOJİK İNANÇLARI

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Abstract

The purpose of this study is to identify how a four-semester music teacher education programme on epistemological beliefs changes as they proceed through the programme. The participants of the study consisting of a total of 104 music teachers in four different semesters of the teacher preparation programme. The instrument used in this study is Epistemological Belief Scale. One-way ANOVA was used to identify patterns within cohorts regarding pre-service teachers' beliefs about epistemology. In conclusion, epistemological beliefs of pre-service music teachers concerning the sub-dimension of “Belief in existence of only one truth” are analysed according to grades, a significant difference has been observed between 1st, 2nd grade and 2nd, 3rd grade.

Keywords: Epistemological believes, pre-service music teacher, teacher education programme

Özet

Bu çalışmanın amacı, müzik öğretmenliği programının müzik öğretmen adaylarının epistemolojik inançlarına etkisini belirlemektir. Araştırmaya birinci, ikinci, üçüncü ve dördüncü sınıflardan oluşan 104 müzik öğretmen adayı katılmıştır. Bu çalışmada Epistemolojik İnanç Ölçeği kullanılmıştır. Veri analizinde öğretmen adaylarının epistemolojik inançlarını belirlemek üzere tek yönlü ANOVA analizi seçilmiştir. Öğretmen adaylarının sınıf düzeylerine göre epistemolojik inanç ölçeği boyutları incelendiğinde “tek doğruya olan inanç boyutu”nda anlamlı farklılık bulunmuştur. Tukey HSD sonuçları incelendiğinde, bu anlamlı farklılığın 1. ve 2. sınıflar ile 2. ve 3. Sınıflar arasında olduğu görülmektedir

Anahtar Kelimeler: Epistemolojik inançlar, müzik öğretmeni adayı, müzik öğretmenliği programı.

Introduction

In our country, it is known that philosophy of formation of the music programmes, which have been conducted since 2000s, is a constructivist theory (MEB, 2000; MEB, 2006). However, Primary School Music Lesson Programme (MEB, 2006), which has been conducted since the years of 2007-2008, regards music education to have a key role in terms of the futures of societies in the century of today's information and technology in which effects of music can be observed clearly on every aspects of the life. In addition, rational thinking in the programme is defined as a process of research and thinking based on constantly questioning. According to the programme, it has been emphasised that scientific knowledge is also essential in music education; but, characteristic values of the society and environment must be taken into account besides characteristic values of music in order that these interactions can be observed (Wiggins, 2009; 2011).

As it is known, students are considered to structure information in their mind in learning environments proper for constructivist approach (Rogolf, 1990; Vygotsky, 1978; Wenger, 1998). Structuring process's corresponding to only one and same true information for different individuals results from the facts that the concepts, which are used by individuals while learning, are common and that they objectively receive equivalents of these concepts from outer world (Green, 2008). Although environment and society composing music underlines the relations with technology and individuals in music lesson programme, it is not emphasized that all of the structured information is not true and subjective opinions can only be verified by justifying.

As a branch of philosophy, epistemology discusses the subjects methodically by asking when information is valid, which information is regarded as true etc.

Thus, reliable improvements can occur on learners about what science, scientific theories, scientific knowledge, scientific methods and objects of scientific knowledge are.

In order to realise music teaching in constructivist method, music teachers must have the perception of constructivist music epistemology and students also must contribute such

epistemological views to be accustomed (DeNora, 2000; Turino, 2008). Functions of music are based on aesthetic with regards to its principle and have individual, social, cultural, economical and educational characteristics. Music has become both a very effective teaching means and very important education field since ancient centuries because of the place of its functions in humans' life (Uçan, 1994).

It has been also proved by many studies that music education significantly has an effective role in individual's cognitive learning besides its positive effects on individual's affective and kinaesthetic behaviours (Şendurur, Akgül-Barış, 2002). "Music has a message as well as other branches in art and addresses to mind through senses. However, this aspect cannot be understood easily because it communicates through timbres unlike other arts; in other words, it conveys its message through timbres and it is thought to address to only senses. Anybody, who hasn't educated on music before, has the limited opinions on messages of music and containing artistic values since activity of mind is not involved" (İpsiroğlu, 1998: 41).

Music education supports critical thinking, problem solving and how to work cooperatively for these purposes, development of academic and personal skills such as learning (Şendurur, Akgül-Barış, 2002). As learning is defined as a structuring process of an individual's own knowledge by being based on his/her foreknowledge according to constructivist epistemological view, scientific knowledge is also defined as knowledge's being structured by the scientists, whose content has been agreed by a society including scientists (Kuhn, 1970). When considered from this angle, information structuring process or learning should be shifted from acquisition of knowledge to producing knowledge in order to achieve main purposes of music education. Methods of acquiring scientific knowledge and justification process cover a whole concerning nature of entities having source in itself.

Thus, non-objective understandings of students, which results from distinction between scientific concepts and the concepts we use in daily life and because they are not substitute for each other, are able to be prevented (Elliott, 2012). Daily life can only become scientific by carrying out scientific thoughts. It can be achieved only by bringing skills of critical thinking,

problem solving to students besides music education, providing them to understand how scientific knowledge emerged and helping them arrange accordingly their thoughts, attitudes and understandings (McCarthy, 2004).

Most of the studies on this subject in literature were conducted by concerning procedural aspect of scientific knowledge as a process (Barrett, 2007; Folkestad, 2006). On the other hand, it is seen not to be emphasised that scientific knowledge in the conducted studies has not been explained as an existential relation, scientific method is needed to be able to find and know truth and criteria which determine the qualities (accuracy, certainty and etc.) of knowledge are, in fact, these (Hartman, 1998). Teachers who have higher epistemological beliefs will have a high-level self-learning and structuring information towards their targets. Especially experiences obtained at school, home and the learning environment at school are important factors in developing these beliefs. Although there are researches on self-regulation in different fields in our country from primary education to higher education (Sandoval, 2005; Hofer & Pintrich, 1997; Samarapungavan, 1992), there is no research on the development of epistemological beliefs about pre-service music teachers. The rising interest in epistemology emphasizes significance of developmental research in this field.

In curriculum of education faculties, where future teachers are trained, the relation between pre-service teachers' perceptions, attitudes and epistemological beliefs must be considered. In this context, teacher education programmes have become important. Effective instruction in music teacher education programme should not only increase learning, but also help pre-service music teachers develop the lifelong learning skills needed to succeed at higher levels of music education, and reconstruct their conceptual knowledge and procedural strategies when necessary.

Moving from this point of view, this study has been designed to investigate the development and changes in epistemological beliefs of pre-service music teachers at Pamukkale University Music Teacher Education Programme (MTEP) over the four-semester sequence. The following main question was presented:

How have the changes in epistemological beliefs of pre-service music teachers been aimed to be evaluated according to grade?

Method

This research has a simple descriptive survey approach. The simple descriptive survey approach is one-shot survey for the purpose of describing the characteristics of a sample at one point in time apart from the other approaches namely cross sectional and longitudinal surveys (Mertens, 98; 108). In this research, simple descriptive survey is conducted in order to describe how a four-semester sequence teacher education programme helps pre-service teachers' perceptions about self-regulation skills change.

Participants

104 pre-service teachers enrolled in Pamukkale University Music Teacher Education Programme (MTEP) during the fall semester of 2013 were invited to participate in the study. All of them volunteered to participate in the study. 28 freshman pre-service music teachers enrolled in basic music courses (Piano I-II , Major Performance I-II, School Instruments I-II, Solo Vocal Training I-II, Ear Training and Musical Literacy I-II, Chorus I). At this level, they took the courses of introduction to educational music and educational psychology. 22 sophomore pre-service music teachers enrolled in basic music courses (Piano III-IV, Major Performance III-IV, Solo Vocal Training III-IV, Ear Training III-IV, Chorus II-III, Harmony-Counterpoint Accompany I-II, History of Music, Traditional Turkish Folk Music Training, Electronic Organ Education) and also started to take courses about music teaching and music education programme and planning. 27 juniors pre-service music teacher have completed the sets of basic music courses (Piano V, Major Performance V, Orchestra Chamber Music I, Ear Training V, Chorus IV, Traditional Turkish Art Music, Repertoire of School Music, Contemporary Popular Music, History Of Turkish Music) and also started to take courses on Teaching Music Education (such as Special Methods of Music Teaching I, Instrument Maintenance and Repair). 27 seniors, who are at their last year of pre-service teacher programme, have completed courses on music teaching (such as Special Methods of Music Teaching II, School Experience, Teaching Practice, Turkish Educational System and School Management, Community Service Applications).

Data Collection Tool

Epistemological Belief Scale

In the study, Epistemological Belief Scale (EBS), which was developed by Schommer (1990) in order to determine the students' epistemological beliefs, and whose validity and reliability studies were conducted on students of Turkish universities (Ankara, Gazi, Hacettepe and Middle East Technical Universities) by Deryakulu and Büyüköztürk (2002) has been used. Original scale consists of the following four factors; "Learning ability is innate", "Learning realises quickly", "Information is simple" and "Information is certain". This four-factor structure contains a total of 63 articles below itself. As 35 articles in the scale have been coded in positive (+), 28 ones have been coded in negative (-).

According to the results from factors' analysis performed in the study of adapting the original scale into Turkish, 25 articles disrupting the factor structure were omitted from the scale and "Epistemological Belief Scale" has been constituted with the remaining 35 articles.

The constituted new scale consists of three sub-articles as follows:

- "Belief in learning's being dependent on struggle" (ÖÇBOI),
- "Belief in learning's being dependent on ability" (ÖYBOI) and
- "Belief in existence of only one truth" (TBDVOI) (Deryakulu ve Büyüköztürk, 2002).

The scale is like a five-point Likert scale, which varies between (1) I definitely do not agree (2) I do not agree (3) I have no idea (4) I agree (5) I definitely agree, and has comprised of 35 articles.

- 18 articles in total, which consists of 17 negative and 1 positive ones in dimension of the scale "Belief in learning's being dependent on struggle" (articles 1-8)
- 8 articles in total, which are all positive, in dimension of the scale "Belief in learning's being dependent on ability" (articles 19-26)
- 9 articles in total, which are all positive, in dimension of the scale "Belief that there exists only one truth" (articles 27-35).

During assessment, in the scale of;

- “Belief in learning’s being dependent on struggle”, there are 18 articles in total, 17 of which is negative, 1 of which is positive. The highest score, which will be obtained here, is 90; the lowest one is 18.
- “Belief in learning’s being dependent on ability”, there are 8 articles in total. The highest score, which will be obtained here, is 40 and the lowest one is 8.
- “Belief in existence of only one truth”, there are 9 articles in total. The highest score, which will be obtained from this sub-dimension, is 45 and the lowest one is 9.

In Table 1, sub-dimensions of epistemological belief scale is grouped into 3 levels as following Low, Medium and High Levels and score intervals of these levels have been calculated.

Table 1. Sub-dimensions of epistemological belief scale

<i>sub-dimensions of epistemological belief scale</i>	<i>Low (sophisticated)</i>	<i>Medium(unimproved)</i>	<i>High (superficial)</i>
<i>Belief in learning’s being dependent on struggle(18<x<90)</i>	$18 < x < 41.5$	$41.5 < x < 65.5$	$65.5 < x < 90$
<i>Belief in learning’s being dependent on ability(8<x<40)</i>	$8 < x < 18.66$	$18.66 < x < 29.33$	$29.33 < x < 40$
<i>Belief in existence of only one truth(9<x<45)</i>	$9 < x < 20.5$	$20.5 < x < 32.5$	$32.5 < x < 45$

On the scale, low-level indicates sophisticated beliefs, i.e. improved beliefs and high-level indicates superficial, i.e. unimproved beliefs. In other words, low level points out the belief that learning ability can be improved, individual can produce information by creating information, learning can be realised as a result of working and struggle and truths can change in time.

On the contrary, high level points out the belief that learning ability is innate; therefore, clever students can comprehend difficult subjects quickly without struggling much whereas the others cannot comprehend these no matter how much they struggle due to their limited learning abilities and struggle will not result in learning for these people, truths are certain and unalterable (Karhan, 2007).

Findings and Discussion

In the analyses performed according to sub-problems of the study, One Way ANOVA test was used in order to analyse sub-dimension averages of pre-service music teachers in Epistemological Belief Scale according to the grade, where they are educated, and findings have been given in Table 2.

Table 2. Analyses of sub-dimension averages of pre-service music teachers in epistemological belief scale according to the grade, where they have attended.

<i>EBS dimensions</i>	<i>Sub-Resource</i>	<i>Variance</i>	<i>Sum of squares (KT)</i>	<i>Degree of freedom (Sd)</i>	<i>Average of squares (KO)</i>	<i>F</i>	<i>p</i>
"Belief in learning's being dependent on struggle" (BLBDS)	<i>Inter groups</i>		194,731	3	64,910	,848	,471
	<i>Intra-groups</i>		7657,259	100	76,573		
	<i>Total</i>		7851,990	103			
"Belief in learning's being dependent on ability" (BLBDA)	<i>Inter groups</i>		138,695	3	46,232	1,945	,127
	<i>Intra-groups</i>		2376,958	100	23,770		
	<i>Total</i>		2515,654	103			
"Belief in existence of only one truth" (BEOOT)	<i>Inter groups</i>		279,885	3	93,295	3,962	,010*
	<i>Intra-groups</i>		2354,874	100	23,549		
	<i>Total</i>		2634,760	103			

*p<0,05

When Table 2 is analysed, there is not observed any significant difference between sub-dimensions of “Belief in learning’s being dependent on struggle” and “Belief in learning’s being dependent on ability” according to grades in sub-dimension averages of pre-service music teachers in EBS; however, there is observed a significant difference in sub-dimension of “Belief in existence of only one truth”. Findings related to Post-Hoc technique, which was used in order to determine between what grades the differences occur, have been given in Table 3.

Table 3. Post hoc (tukey hsd) table for sub-dimension of “belief in existence of only one truth” in the epistemological belief scale according to grades

<i>EBS Dimension</i>	<i>Sub-Grade</i>	<i>N</i>	\bar{X}	<i>Ss</i>
<i>belief in existence of only one truth (BEOOT)</i>	<i>1. Grade</i>	28	29,2143	4,21072
	<i>2. Grade</i>	22	24,7727	5,20011
	<i>3. Grade</i>	27	28,7037	3,99822
	<i>4. Grade</i>	27	27,8889	5,85947

According to Table 3, when epistemological beliefs of pre-service music teachers concerning the sub-dimension of “Belief in existence of only one truth” are analysed according to grades, a significant difference has been observed between 1st, 2nd grade and 2nd, 3rd grade.

Table 4. Descriptive statistics concerning the sub-dimension of “belief in existence of only one truth” according to grades of pre-service music teachers, where they are educated.

<i>Grades</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>1. Grade</i>		<i>.009*</i>		
<i>2. Grade</i>	<i>.009*</i>		<i>.029*</i>	
<i>3. Grade</i>		<i>.029*</i>		
<i>4. Grade</i>				

* $p < 0,05$

Descriptive statistics performed so as to determine in what grade’s favour this difference is have been given in Table 4.

Table 5. Epistemological belief scales of pre-service music teachers and averages of sub-dimensions

Sub-dimensions of epistemological belief scale	n	Xort	SS	Epistemological Belief Level								
				Improved			Less improved			Unimproved		
				n	Xort	SS	n	Xort	SS	n	Xort	SS
“Belief in learning’s being dependent on struggle” (BLDOS)	104	38,49	8,73	75	34,92	4,57	26	44,69	4,70	3	74,00	2,64
“Belief in learning’s being dependent on ability” (BLBDA)	104	21,44	4,94	75	21,32	5,31	26	22,15	3,89	3	18,33	2,08
“Belief in existence of only one truth” (BEOOT)	104	27,79	5,05	75	28,11	5,09	26	28,04	4,08	3	18,00	1,73

According to another sub-matter of the study, general findings related to epistemological belief levels of pre-service music teachers have been given in Table 5. High score, which has been obtained from each factor of the scale, indicates that the individual has rudimentary/unimproved (naive) beliefs whereas low score indicates that he/she has matured/improved (sophisticated) beliefs (Deryakulu, 2004). When averages of “dimension of belief in existence of only one truth” in grades is accordingly examined, it is observed that first grade students (29,21) have higher average than second grade students (24,77) and thus, their “belief in only one truth” has still been at unimproved level. Similarly, third grade students (28,70) have higher average than second grade students (24,77) and their “belief in only one truth” has “not improved” yet.

The epistemological beliefs of prospective teachers of music differ according to the grade level. The studies about the epistemological beliefs of students have revealed that as their grade levels increase, students’ epistemological beliefs improve (Eroğlu and Güven, 2006; Schommer, 1990). The result of the present study can be interpreted as the education program and the years passed having effect on the improvement of the epistemological beliefs of preservice music teachers.

Conclusion

In this century, when social life is getting more dependent on information and communication, search for qualified person has directed attentions to education, which have organic and functional links to all other areas of the society economically, socially and politically. It is commonly regarded that success of the education system considerably depends on qualifications of the teachers operating this system (Eroğlu and Güven, 2006). Teachers have various beliefs concerning learning, values, effectiveness, knowledge or acquisition of knowledge (Chan, 2003; cited by Demir, 2012: 343). In other words, teachers' acknowledgement of the nature and resource of information, i.e. epistemological beliefs have an important role in defining these (Öngen, 2003; cited by Biçer, Er and Özel, 2013: 229). Epistemological belief as an individual feature is a subjective belief of individuals concerning how knowing and learning occur (Erdamar and Alpan, 2011). However, Perry states that epistemological beliefs are beliefs representing individuals' perspectives related to what information is, criteria, limits and certainty degree in defining information and how it is gained (Perry, 1981; cited by Belet and Güven, 2011: 33). Up-to-date studies underline that cognitive alterations, which pre-service teachers will experience through epistemological beliefs, will affect their learning ability and also teaching behaviours and instructing performances they will display in their own classes (Cheng, Chan, Tang ve Cheng, 2009; cited by Belet ve Güven, 2011: 36).

Although many researches have been carried out about epistemological beliefs of pre-service teachers recently (Eroğlu and Güven, 2006; Meral and Çolak, 2009; Belet and Güven, 2011; Erdamar and Alpan, 2011; Demir, 2012; Tümkiye, 2012; Biçer, Er and Özel, 2013), any study carried out related to pre-service music teachers has not been seen. In this context, the purpose of this study is to examine epistemological beliefs of pre-service teachers educated in music teacher training programme. In other words, it is to determine whether epistemological beliefs of pre-service teachers improve according to their grades or not.

- As a result of the research, it was concluded that pre-service music teachers significantly differs only in the sub-dimension "Belief in existence of only one truth" of Epistemological Belief Scale according to the grade where they are educated and that epistemological belief levels of the second grade pre-service teachers are higher than ones of the first and third grade teacher candidates. When lessons at the related

grades in music teaching department are examined, this situation can be considered to result from the fact that many lessons, which are more cognitive and include only one truth, such as Traditional Turkish Folk Music, History of Turkish Music, Turkish Education History, Assessment and Evaluation are more dominant at the second grade. In analysis of the related literature, Eren, Yılmaz and Akkoyunlu (2008) compared epistemological beliefs of the first and fourth grade pre-service teachers attending at different departments of education faculty and detected a significant difference only at the sub-dimension “Belief in existence of only one truth” and this difference is in the fourth grade’s favour. Eroğlu and Güven (2006) stated that there is no significant difference at sub-dimension “Belief in learning’s being dependent on struggle” of the students studying at different departments of education faculty and there is a difference at the sub-dimension “Belief in learning’s being dependent on ability” and “Belief in existence of only one truth” in the first grade’s favour. Meral and Çolak (2009) suggested that there is no significant difference according to the variable of students’ scientific epistemological beliefs at their grades in the research they conducted with 1st and 4th grade pre-service teachers studying at technical education faculty.

When scores pre-service music teachers generally got from dimensions of epistemological belief scale are examined, the most improved epistemological beliefs of pre-service teachers are determined to have “Belief in learning’s being dependent on ability”. Pre-service music teachers can be expected to have high beliefs related to learning’s being dependent on “ability” when it is taken into account that they get accepted to universities by taking an “ability” exam in addition to central exam. However, because there is not any study for determining epistemological beliefs of music teachers in the literature, any study supporting this has not been come across. On the other hand, Eroğlu and Güven (2006) concluded that beliefs of students in existence of only one truth are higher than the dimensions of beliefs in learning’s being dependent on struggle and learning’s being dependent on ability in the study, which they examined at what level epistemological beliefs of pre-service teachers studying at seven different departments of an education faculty generally are.

- According to another result of the research, the most unimproved epistemological beliefs of pre-service music teachers are appeared to be “Belief in learning’s being

dependent on struggle". When the literature is analysed, Erdamar and Bangin-Alpan (2011) has been seen to determine that the most improved beliefs of pre-service teachers are beliefs in learning's being dependent on struggle in a research they performed with students attending the first and fourth grade of an occupational education faculty (O'Toole and O'Mara, 2007).

As a result, it is extremely important to improve epistemological beliefs of principally pre-service teachers, who will educate individuals in order to raise qualified ones for constitution of knowledge societies providing adaptation to the current information century. In this context, researches on pre-service teachers in music programme, which is a field that has not been studied before in spite of the researches often conducted especially in teacher training programmes, must be carried out thoroughly by considering the blank in the literature. It has been found that the epistemological beliefs of preservice music teachers only differ in the sub-part "The belief that there is single truth" according to high school type they graduated. The study has proved that prospective teachers who graduated from Fine Arts and Sports High School music department have higher levels of epistemological beliefs about existence of one single truth than the preservice teachers who are graduates of general high school. Here, it is thought that high school education in Fine Arts and Sports High School music department affects this result.

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