



Learning styles of preservice music teachers: A sample of Aegean region

Evin Erden Topoğlu^{a *}

^a Aydın Adnan Menderes University, Aydın 09010, Turkey

Abstract

Considering the relationship between students' learning styles and their academic achievement, it is essential for both music educators and students themselves to know their learning styles for educators to plan the context of their lessons and for students to decide which studying strategy to use. The present study aims to reveal the levels of learning styles of the preservice music teachers and to examine whether there is a significant difference between the styles of learning of preservice music teachers and their genders, grades, the universities they are studying at, their career paths. Grasha-Reichman "Learning Styles Scale" which was translated into Turkish by Zerayak (2005) was used to investigate the levels of learning styles of preservice music teachers. The 32-items version of the scale was used which was reduced by Vural (2013). 350 preservice music teachers studying at the universities located in Aydın Denizli, İzmir, and Muğla attended the study voluntarily. The results have shown that preservice music teachers have moderate levels of all learning styles, and there are significant differences between their learning styles and their genders, grades, universities, and career paths. The results were discussed in the light of the literature, and suggestions have been made.

Keywords: Learning Styles, Preservice Music Teachers, Music Education, Aegean Region.

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1. Introduction

Many factors affect a student's learning process, such as the learning environment, personality traits, interaction with peers and teachers, as well as the usage of teaching and learning materials. To achieve the desired level of learning, the environment and teaching-learning processes should be carefully considered and organised to achieve the optimum outcomes. Understanding the individual thinking and learning styles of each student plays an important role in both setting and organising the teaching-learning process. The concept of learning styles was first introduced by Rita Dunn in 1960 and

* Corresponding author: Evin Erden Topoğlu. ORCID ID.: <https://orcid.org/0000-0002-6731-5790>
E-mail address: evinerden@hotmail.com

was defined as using each student's different and distinctive ways of preparing and learning new and challenging information, while both learning and remembering (Boydak, 2018). Grasha (1996) described learning styles as individual characteristics that affect the individual's ability to receive and process information, interact with peers and teachers, and engage in lifelong learning.

The concept of learning styles defined as the 'preferences of students' in their learning process and learning environment by Sarıtaş & Süral (2010), is crucial for the development and provision of student learning experiences that lead to successful goal outcomes. Given (as cited in Tatar & Tatar, 2007) reported that "if students were taught through using their individual learning styles in the classroom, they would exhibit significant progress in improving their personal attitudes towards teaching, increased tolerance to cognitive diversity, significant improvement in academic achievement, increased self-discipline, improved behavior, and greater motivation to complete their homework in a scholarly and timely fashion." In this respect, teachers should endeavor to encourage their students to identify and develop their dominant learning styles to make them more effective learners (Kılıç, 2002). In general terms, a student's learning style consists of characteristics that indicate the individual's tendencies, or preferences toward learning. These features demonstrate how the individual or student perceives learning and how they interact with the learning environment (Aydemir, Koçoğlu, & Karalı, 2016).

Everyone's learning styles vary from each other and are considered to be an important factor in learning. There are very different approaches regarding the nature of learning styles and methods of identification. The main reason for this is due to the fact that an individual's learning style consists of three different dimensions: cognitive, affective, and physiological. Theorists mainly focus on one of them (Ekici, 2002). According to Given, style approaches, or models fall into one or more of the five categories listed as models. These models are related to personality and affective characteristics; psychological, cognitive, and information-processing, as well as social models, physical models, environmental and instructional models (as cited in Tatar & Tatar, 2007).

Yeşilyurt (2019) listed the 30 most common learning style models in the literature, explaining them in detail. Learning styles in the Grasha-Riechmann learning style model and the distinctive features of students who prefer these styles can be summarized as follows:

Competitive learners tend to learn better in competitive environments. Although these students can motivate other students by setting higher goals, they can also make learning more difficult for other students by changing the social climate of the learning environment. On the contrary collaborative learners can learn more easily by cooperating with peers and teachers than competitive learners. These students can adapt to teamwork without any difficulty and develop new ideas but they can be dependent on

others in learning tasks. Avoidant learners are not generally engaged in the learning activities within the classroom. They typically avoid taking responsibility for their learning, and also lack interest in their fellow students, or the teacher. Participant learners enjoy engaging in the activities in the class, tending to learn as much as can, and will also prioritize the other students' educational needs as well. Dependent learners tend to learn only what they need, exhibiting a slight amount of learning achievement, taking their peers' and teacher's advice seriously in a learning task. They cope with their anxiety while following the task's requirements. However, it is difficult for them to regulate their own learning, and to solve the task's problems by themselves. Conversely, independent learners are good at orienting themselves in what is important and what to learn in a task. They are satisfied with their learning skills and tend to easily learn by themselves. Since they are successful at learning by themselves, they can also experience some problems in seeking help (Grasha, 1996).

There are varied sets of lessons requiring distinctive skills within the Turkish music teacher training program. The curriculum includes instrument practice, aural training, chamber music performance, lessons including music with movement, music history, and other courses related to the teaching profession. For educators to effectively plan their lessons, and for students to decide which study strategy to use, it is essential for both music educators and students alike to understand their individual learning styles. In addition, they must also know the relationship between students' learning styles and their academic achievement outcomes.

With regards to the above consideration, this study aims to examine the levels of learning styles of the preservice music teachers and to assess whether there is a significant difference between the styles of learning of preservice music teachers, including gender, grades, the universities at which they are studying and their career paths.

2. Method

In this section, the model of the research undertaken, the university sample, data collection tools, and data analysis are provided. A descriptive survey model was used in the research.

2.1. Participant (subject) characteristics

The participants consisted of 350 preservice music teachers, enrolled in the department of music education at Aydın Adnan Menderes University (Adu), Dokuz Eylül University (Deu), Muğla Sıtkı Koçman University (Mu), and Pamukkale University (Pau). These departments comprise the four music education departments located in the Aegean region of Turkey. Since the study is limited to the faculty of education music

departments in the Aegean region of Turkey, no sampling method was used, all the music education departments in the region were included in the study. Descriptive statistics of the participants are shown in Table 1.

Table 1. Descriptive statistics of the participants

Variables		<i>f</i>	%
Gender	Female	200	57.3
	Male	150	42.7
Age	17-19	68	19.5
	20-22	202	58.0
	23-+	78	22.4
Grade	1 st grade	89	25.4
	2 nd grade	71	20.3
	3 rd grade	73	20.9
	4 th grade	117	33.4
University	Adu	92	26.3
	Deu	71	20.3
	Mu	66	18.9
	Pau	121	34.6
Career path	Academician	121	34.8
	FAHST*	63	18.1
	Music Teacher	105	30.2
	Others	59	17.0

*Fine Arts High School Teacher

2.2. Measures and covariates

2.2.1. Personal information form: A personal information form was developed in order to determine several variables, such as gender, age, grade, university, and career path of the participants.

2.2.2. Grasha-Reichman Learning Styles Scale (GRLSS): The scale was developed by Grasha-Reichman in order to reveal the learning styles of the participants. The language validity of the Turkish version was made by Zerayak (2005). It was a 60-item Likert scale which has a Cronbach alpha coefficient of .83. Exploratory factor analysis and confirmatory factor analysis were both applied by Vural (2013), and the scale was reduced to 32 items. There are six factors that were named by referring to the English version of the scale. These factors are named as, participant, avoidant, collaborative, competitive, dependent, independent. In this study, the final version of the scale used was modified by Vural (2013). The Cronbach Alpha coefficient was found as .72 for this study.

2.3. Data Analysis

In this study, a statistical analysis was performed to discover whether the data were distributed normally, to enable parametric analysis. Skewness and Kurtosis values are used for normality assumptions. If the distribution is perfectly normal, the skewness and kurtosis value is 0. Skewness and kurtosis values are between -1 and +1 are deemed very good, and between -2 and +2 is acceptable (Pallant, 2007). According to Tabachnick & Fidell (2007), if the skewness and kurtosis values are between -3 and +3, the distribution is considered normal. In this study, skewness and kurtosis values are between -.848 and +.959 for the gender variable. Since the groups are normally distributed t-test for independent samples was used.

In accordance with the purposes of the research, the difference between the learning styles of the preservice music teachers and their grades, universities, career paths were measured. Once the variances were homogeneous, a one-way analysis of variance (ANOVA) was applied. The Bonferroni test was used for multiple comparison tests. Since the learning styles of preservice music teachers will be compared according to grade, university, and career path, Bonferroni correction has been made. Bonferroni correction is determined by the formula of significance/number of groups (Miller, 1981). Due to grade, university and career plan variables have four groups, the significance level for these groups (.05/4) is determined as .0125.

3. Results

In line with the objectives of the study, levels of preservice music teachers learning styles are examined. The results are presented in Table 2.

Table 2. Degree of learning styles of the participants

Learning Styles	Degree			N	\bar{X}	Sd	Evaluation
	Low	Moderate	High				
Participant	1.00-2.26	2.27-4.78	4.79-5.00	350	3.36	.82	Moderate
Avoidant	1.00-1.15	1.16-3.69	3.70-5.00	350	2.62	.86	Moderate
Collaborative	1.00-2.22	2.23-4.62	4.63-5.00	350	3.37	.85	Moderate
Competitive	1.00-1.62	1.63-4.26	4.27-5.00	350	2.57	.81	Moderate
Dependent	1.00-3.86	3.87-4.92	4.93-5.00	350	3.98	.67	Moderate
Independent	1.00-2.57	2.58-4.45	4.46-5.00	350	3.45	.66	Moderate

According to the findings, preservice music teachers possess moderate levels of participant, avoidant, collaborative, competitive, dependent, and independent learning styles. To determine whether there is a significant difference between the learning styles

of preservice music teachers and their genders, a t-test for independent samples was used. The analysis results are presented in Table 3.

Table 3. t-test results on learning styles and genders of preservice music teachers

Learning styles	Gender	N	\bar{X}	Sd	t	df	p
Participant	Female	200	13.95	3.11	3.47	347	.001*
	Male	149	12.73	3.39			
Avoidant	Female	200	15.24	5.14	-2.04	347	.042*
	Male	149	16.38	5.15			
Collaborative	Female	200	13.36	3.45	-.81	347	.418
	Male	149	13.66	3.30			
Competitive	Female	200	18.11	5.75	0.39	347	.698
	Male	149	17.87	5.57			
Dependent	Female	200	24.68	3.57	4.34	347	.000*
	Male	149	22.83	4.40			
Independent	Female	200	16.89	3.22	-2.33	347	.021*
	Male	149	17.71	3.33			

* $p < .05$

According to the findings of the research, participatory learning scores (female = 13.95, male = 12.73, $t_{347} = 3.47$, $p = .001$) and dependent learning scores (female = 24.68, male = 22.83, $t_{347} = 4.34$, $p = .000$), female participants are significantly higher than male participants' scores. Also, avoidant learning scores (female = 15.24, male = 16.38, $t_{347} = -2.04$, $p = .042$) and independent learning scores (female = 16.89, male = 17.71, $t_{347} = -2.33$, $p = .021$) of male participants are significantly higher than female participants' scores. On the other hand, there is no significant difference between learning styles and the genders of preservice music teachers in terms of collaborative learning factors and competitive learning factors. To determine whether there is a significant difference between the learning styles of preservice music teachers and their grades, a one-way analysis of variance test (ANOVA) was conducted. The analysis results are presented in Table 4.

Table 4. ANOVA test results on learning styles and grades of preservice music teachers

Learning styles	Grade	N	\bar{X}	Sd	df	F	p	Significance
Participant	1	88	13.60	3.56	3	0.58	.627	
	2	72	13.23	3.36	(BG)			
	3	73	13.08	3.19	346			
	4	117	13.62	3.07	(WG)			
	Total	350	13.42	3.28	349			
Avoidant	1	88	14.64	5.14	3	2.37	.070	
	2	72	16.32	5.18	(BG)			
	3	73	16.62	5.24	346			
	4	117	15.64	5.04	(WG)			
	Total	350	15.73	5.16	349			
Collaborative	1	88	13.22	3.57	3	0.65	.582	
	2	72	13.25	3.39	(BG)			
	3	73	13.55	3.34	346			
	4	117	13.80	3.27	(WG)			
	Total	350	13.49	3.38	349			
Competitive	1	88	16.78	5.62	3	6.63	.001*	1<2 2>3
	2	72	19.62	5.63	(BG)			
	3	73	16.69	5.49	346			
	4	117	18.79	5.48	(WG)			
	Total	350	18.02	5.66	349			
Dependent	1	88	23.41	4.53	3	0.69	.562	
	2	72	23.80	3.73	(BG)			
	3	73	24.25	3.82	346			
	4	117	24.06	3.99	(WG)			
	Total	350	23.89	4.04	349			
Independent	1	88	16.73	3.32	3	5.09	.002*	1<4 2<4
	2	72	16.36	3.19	(BG)			
	3	73	17.42	3.27	346			
	4	117	18.06	3.16	(WG)			
	Total	350	17.24	3.29	349			

* $p < .0125$

The findings have shown that there is a significant difference between the competitive learning scores of the participants ($F(3-346) = 6.63$, $p = .001$) and their grades. There is also a significant difference between the independent learning scores of the participants ($F(3-346) = 5.09$, $p = .002$) and their grades. According to the post-hoc test that had been demonstrated, the difference between the competitive learning scores of the participants and their grades were increased both from the first ($\bar{x} = 16.78$) and the second ($\bar{x} = 19.62$) graders, and second and the third graders ($\bar{x} = 16.69$). Also, the independent learning scores of the fourth graders ($\bar{x} = 18.06$) were significantly higher than the independent

learning scores of the first and the second graders. To determine whether there is a significant difference between the learning styles of preservice music teachers and their universities, a one-way analysis of variance test (ANOVA) was conducted. The analysis results are presented in Table 5.

Table 5. ANOVA test results on learning styles and the universities of preservice music teachers

Learning styles	University	N	\bar{X}	Sd	df	F	p	Significance
Participant	ADU	92	13.87	3.40	3	0.99	.399	
	DEU	71	13.44	3.25	(BG)			
	MU	66	13.00	3.72	346			
	PAU	121	13.31	2.93	(WG)			
	Total	350	13.42	3.28	349			
Avoidant	ADU	92	15.81	5.33	3	0.63	.598	
	DEU	71	15.01	4.39	(BG)			
	MU	66	16.12	5.50	346			
	PAU	121	15.88	5.28	(WG)			
	Total	350	15.73	5.16	349			
Collaborative	ADU	92	13.00	3.12	3	1.38	.248	
	DEU	71	14.07	3.15	(BG)			
	MU	66	13.62	3.72	346			
	PAU	121	13.45	3.50	(WG)			
	Total	350	13.49	3.38	349			
Competitive	ADU	92	16.68	5.70	3	5.58	.001*	ADU<MU
	DEU	71	17.27	5.29	(BG)			
	MU	66	20.15	5.62	346			
	PAU	121	18.30	5.54	(WG)			
	Total	350	18.02	5.66	349			
Dependent	ADU	92	24.22	4.17	3	4.84	.003*	MU<PAU
	DEU	71	24.00	3.42	(BG)			
	MU	66	22.23	4.54	346			
	PAU	121	24.45	3.79	(WG)			
	Total	350	23.88	4.04	349			
Independent	ADU	92	17.77	3.21	3	1.27	.284	
	DEU	71	16.85	3.20	(BG)			
	MU	66	16.99	3.82	346			
	PAU	121	17.21	3.07	(WG)			
	Total	350	17.24	3.29	349			

* $p < .0125$

According to the findings, there is a significant difference between the competitive learning scores of the participants ($F(3-346) = 5.58$, $p = .001$) and their universities. There is also a significant difference between the dependent learning scores of the participants ($F(3-346) = 4.84$, $p = .003$) and their universities. According to the post-hoc

test, participants of Muğla University ($\bar{x} = 20.15$) have significantly higher competitive learning scores than participants of Adnan Menderes University ($\bar{x} = 16.68$). In addition, participants of Pamukkale University ($\bar{x} = 24.45$) have higher dependent learning scores than participants of Muğla Sıtkı Koçman University ($\bar{x} = 22.23$). There is no significant difference between the participants' participant, avoidant, collaborative, and independent learning scores and their universities. In the study, a one-way analysis of variance test (ANOVA) was conducted to examine the difference between the learning styles of preservice music teachers and their career choice. The results of the analysis are presented in Table 6.

Table 6. ANOVA test results on learning styles and the career paths of preservice music teachers

Learning Styles	Career Path	N	\bar{X}	Sd	df	F	p	Significance
Participant	Ac	121	14.11	3.11	3	8.07	.000*	Acad.>Others
	FAHST	63	13.27	3.55	(BG)			
	MT	105	13.74	2.88	344			
	Others	59	11.69	3.46	(WG)			
	Total	348	13.44	3.28	347			
Avoidant	Acad.	121	14.51	5.03	3	8.42	.000*	Acad.<Others FAHST<Others
	FAHST	63	14.90	4.98	(BG)			
	MT	105	16.08	4.84	344			
	Others	59	18.32	5.25	(WG)			
	Total	348	15.70	5.16	347			
Collaborative	Acad.	121	14.02	3.17	3	2.93	.034	
	FAHST	63	12.86	3.63	(BG)			
	MT	105	13.67	3.15	344			
	Others	59	12.69	3.77	(WG)			
	Total	348	13.48	3.39	347			
Competitive	Acad.	121	19.29	5.81	3	3.74	.011*	Acad.>Others
	FAHST	63	17.14	5.22	(BG)			
	MT	105	17.70	5.25	344			
	Others	59	16.74	6.07	(WG)			
	Total	348	17.99	5.66	347			
Dependent	Acad.	121	24.12	4.10	3	1.02	.386	
	FAHST	63	23.57	4.47	(BG)			
	MT	105	24.22	3.37	344			
	Others	59	23.24	4.51	(WG)			
	Total	348	23.90	4.04	347			
Independent	Acad.	121	17.43	3.53	3	0.31	.820	
	FAHST	63	17.10	3.38	(BG)			
	MT	105	17.05	2.96	344			
	Others	59	17.37	3.31	(WG)			
	Total	348	17.24	3.29	347			

* $p < .0125$

According to the findings, there is a significant difference between participant learning scores of the participants ($F(3-344) = 8.07, p = .000$) and their career paths. Also, there is a significant difference between the avoidant learning scores of the participants ($F(3-344) = 8.42, p = .000$) and their career paths. According to the post-hoc test, participants who are willing to be academicians in the future ($\bar{x} = 14.11$) have significantly higher scores than participants who have other plans than being a music teacher ($\bar{x} = 11.69$). Also, participants who have other plans than being a music teacher ($\bar{x} = 18.32$) have

significantly higher avoidant learning scores than participants who are planning to be academicians ($\bar{x}=14.51$) and participants who are planning to be a teacher in Fine Arts High Schools ($\bar{x}=14.90$).

4. Discussion

The current study aims to reveal the levels of learning styles of preservice music teachers, and whether there is a difference between their learning styles, and their genders, grades, universities, and career paths. According to the results, participants have moderate levels of participant, avoidant, collaborative, competitive, dependent, and independent learning styles. In the literature, preservice teachers have various levels of learning styles. Deniz (2011) has investigated the learning styles of preservice music teachers via Kolb's Learning Styles Inventory. Kolb's learning styles perspective differs from Grasha-Reichmann's perspective in terms of learning styles, and their contents. Deniz (2011) has found that participants have similar learning styles and these learners are interested in abstract ideas rather than theories, requiring definite explanations. Unlike the present study, Aydemir et al. (2016) has demonstrated that preservice classroom teachers have high levels of competitive learning and moderate levels of dependent, independent, avoidant, collaborative and, participant learning. Since the levels of learning styles of the participants are close to each other, it can cause lesson planning difficulties for teachers, as they endeavor to keep learning styles in mind.

As mentioned before there are different kinds of learning style models in the literature. Although learning styles vary, there are a significant number of studies that manifest the distinctive feature of gender on learning styles. (Baneshi, Tezerjani, & Mokhtarpour, 2014; Kahyaoğlu, Tan & Kaya, 2013; Maubach & Morgan, 2001; Philbin Meier, Huffman, & Boverie, 1995; Severiens & Dam, 1997; Süral & Sarıtaş, 2015; Wehrwein, Lujan, & DiCarlo, 2007). In the same vein, the results of the present study have shown that female participants have significantly higher scores than male participants over the participant and dependent learning styles. On the other hand, male participants have significantly greater dependent and avoidant learning scores compared with female participants. According to these results, female preservice music teachers are more likely to have active, and leading roles in the lessons. They are also willing to care about music teaching when compared with male participants. Male lack of interest in being a music teacher can be observed when the number of male and female participants are compared (Female N=200, Male N=150). Most of the music education department graduates become music teachers at preschool, primary school, and secondary school education, mostly dealing with children. In this respect, music teaching can be perceived as a feminine profession in Turkish culture. Likewise, mentioned in Roulston & Misawa's case study (2011), music teachers who they have interviewed frequently reflected essential characterizations of gender, holding views of stereotypical

roles of women as motherly and supportive, and men as competitive and powerful. Since most of the music teachers will educate children in the future, and the music education curriculum contains a great number of courses requiring dancing, playing children games, and singing children songs, male preservice music teachers may be more hesitant and disinterested in lessons and in teaching when compared with female participants.

The results have shown that there is a significant difference between the participants' learning styles and their grades. Second graders have significantly higher competitive learning scores than first and third graders. This difference can arise from various factors. It is possible that when individuals become students in universities, they can be struggling with adjusting themselves to a new environment, new social life, etc. in their freshman year. But in their second year, after they get used to being a student in university they concentrate on their lessons and see their peers as rivals. In the second half of their undergraduateship, they start to collaborate and study with their peers as the lessons require groups studies. But further qualitative studies must be carried out in order to reveal these findings' reasons. Also, fourth graders have higher independent learning scores than the first and second graders. When the independent learning scores among grades are examined, it can be seen that the dependent learning scores increase gradually. This can be a result of the music education curriculum gains, therefore preservice music teachers become independent learners as they are coming closer to becoming music teachers. Along the same lines, Kuzu (2010) has examined 446 preservice teachers from several departments and determined the significant difference between the first and the fourth graders in terms of learning styles. Unlike the present study's findings, Kaf Hasırcı (2006) had investigated 202 preservice primary school teachers' learning styles via Kolb's Learning Style Inventory. Likewise, Deniz (2011) had investigated 157 preservice music teachers' learning styles with the same data collection tool, and both have discovered little significant difference between various grades and the learning styles in their studies.

According to the results, preservice music teachers of Adnan Menderes University have the lowest competitive learning scores, while participants of Muğla Sıtkı Koçman University have significantly higher scores. Participants of Pamukkale University have the highest score on dependent learning, and participants of Muğla Sıtkı Koçman University have the lowest score. That difference is also significant. Remarkably, the same music education curriculum gives different outputs in terms of learning styles in similar regions. This result can be derived from the different approaches and attitudes of professors in different universities, on preservice music educators.

Furthermore, career choice is a remarkable variable in the study. Preservice music teachers who are planning to be academicians in the future have significantly higher participant and competitive learning scores than participants without music-related plans for the future. Alike, these participants have significantly higher avoidant learning

scores than participants who aspire to be academicians or fine arts high school teachers in the future. This finding is parallel to the literature. According to Kolb (1984) personality types, educational majors, career choices, and functional job roles affect the development of learning styles. In this study, the results have shown that as the preservice music teachers' career paths advance, they develop participant and competitive learning styles alike, they become avoidant learners as their career paths are estranged from the goals of music education.

Knowing the learning styles of students, and how they interact with demographic variables can lead educators to improved teaching delivery. This, in turn, assists in increased student motivation, while also enhancing the efficiency of the learning environment. As the number of these studies continues to grow, more music educators will develop better strategies for classroom teaching.

Limitations of the Study

The present study that was carried out for this purpose contains a few limitations. Qualitative studies must be carried out for determining the reasons for statistical significance. Furthermore, the effect of courses on students informed through the consideration of learning styles must be investigated. Further studies must be carried out employing a range of different samples.

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