JEGYS

Journal for the
Education of Gifted Young Scientists

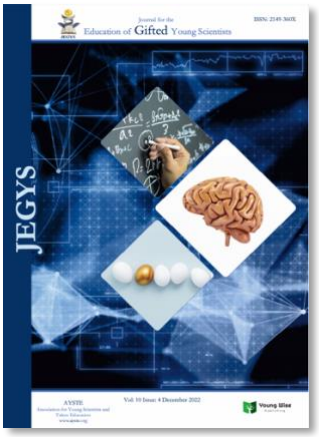
ISSN: 2149-360X

JEGYS

AYSTE
Association for Young Scientists and Talent Education
www.ayste.org

Vol 1 No 1 March 2023

Young Wise Publishing



Journal for the Education of Gifted Young Scientists
e-ISSN: 2149- 360X

March 2023 (Spring) Issue Full Files

Young Wise Publishing

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Absracting & Indexing
H.W. Wilson Education Full Text Database Covarage List, SCImago Journal & Country Rank (SJR), Index Copernicus, Directory of Open Access Journals (DOAJ), European Reference Index for the Humanities and Social Sciences (ERIH PLUS), Open Academic Journal Index (OAJI), Udledge, WorldCat (OCLC), ResarchBib, EZB, SOBIAD, Google Scholar, Scilit.
Note: You can click on index titles for checking

Young Wise Publishing/Genç Bilge Yayıncılık
Management-Publicaton Process-Office (Adress 1): 63 – 66 Hatton Garden, Fifth Floor, Suite 23, EC1N 8LE, London, UK
Web site: https://youngwisepub.com/ E-mail: info@youngwisepub.com

ISSN-Ownership-Office (Adress 2): Bahcelievler District 3015 St. No:9/1, Isparta, Turkiye
Web site: http://gencbilgeyayincilik.com/ E-mail: gencbilgeyayincilik@gmail.com

Journal for the Education of Gifted Young Scientists, 11(1), 0-0, March 2023
e-ISSN: 2149- 360X
jegys.org
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From the Editor

Editorial and entrepreneurial talents of gifted young scientists who are academic journal owners: problems and suggestions

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Abstract

Publishing and entrepreneurial talent is becoming more and more important with the growing market and increasing influence of publishing. There may be some responsibilities on important actors for the development of this talent area. It is necessary to evaluate them in terms of protecting and developing the resource of gifted young scientists. Among the aims and objectives of JEGYS is to be a platform where the education and problems of gifted young scientists are discussed. In this respect, I would like to share this issue with our readers, even if it is short. I hope this issue will be discussed more from the perspective of both supporting gifted young scientists and scientificity.

Keywords:

entrepreneurship, dominance of science, gifted young scientists, scientificity versus popularity of science, personal journals

To cite this article:

Tortop, H.S. (2023). Editorial and entrepreneurial talents of gifted young scientists who are academic journal owners: problems and suggestions. *Journal for the Education of Gifted Young Scientists*, *11*(1), 0-0.

An important area of talent in which gifted young scientists demonstrate important skills such as leadership is editorship. This has made publishing education even more important (Maxwell, 2014). It has been observed that the number of "personal journals" has increased during the last ten years, especially in developing countries. The reason for this may be that there are no institutionally strong publishing houses like world-famous publishing houses in these countries. It can be said that this is an opportunity to reveal talents. However, it can also cause the following negative effects; these academics working in other institutions intensify a large part of their efforts, the talents are not sustainable in non-institutional structures, the value created is transferred to other institutions with little value, the gifted young scientists without editorial experience are intoxicated by publishing the articles of important academicians from different countries, the long-term process of new shining scientific fields. the rapid loss of value in short-term platforms due to the absence of broadcast platforms, the increase in the hegemonic power of important indexes that dominate science, the evolution of the criterion of scientificity into the axis of popularity. In order to develop the talents of gifted young scientists in the field of publishing, the indexes, ISSN center, academic institutions need to take important decisions. Recommendations, some indexes do not accept private journals, the generalization of this situation, ISSN center has started to limit giving ISSN to individuals, it should not give at all, universities should prohibit full-time and part-time academics from openly or secretly establishing and managing journals on their behalf.

JEGYS has reached its 11th year with its goal of becoming the most followed discussion platform on issues such as training and supporting gifted young scientists. In the past 10 years, JEGYS has had shortcomings in terms of editorial skills in some subjects and times, but it also takes into account that the efforts to develop this talent area should also be addressed from the axis of the problems of gifted young scientists in the field of academic publishing. We would like to

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thank all of our stakeholders who contributed to the long-term and tight-knit JEGYS to achieve its goals, and present the first issue of 2023 to you.

I would like to remind you of the International Congress on Gifted Youth and Sustainability of Education (ICGYS), which is the sponsor for the internationalization of JEGYS, the development of its network and the increase of its visibility. With the 4th ICGYSE this year, we remember JEGYS and its value, which is a source for creating an academic meeting and discussion environment on issues such as gifted youth, talent education, and sustainability of education.

Enjoy the pleasure of reading the articles

Dr. Hasan Said Tortop
Editor-in-Chief of the JEGYS

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Journal for the Education of Gifted Young Scientists, 11(1), 1-13, March 2023
e-ISSN: 2149- 360X
jegys.org
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Research Article

Turkish gifted students' interests of courses and inclations of the talent fields: Example of Science and Art Centers[1]

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Article Info

Received: 7 November 2022
Accepted: 23 January 2023
Available online: 15 March 2023

Keywords:
Courses for gifted
Gifted and talented student
Interest fields

Abstract

This study is carried out within the scope of aim to determine the areas and courses of interest of gifted and talented students, using a survey research model among quantitative research design. Within this scope, data was obtained from 370 gifted students using stratified purposive sampling method with electronic forms created in two parts via Microsoft Forms. Data analysis was carried out with SPSS 22 packet data analysis program. Descriptive statistics and difference tests were utilized in the analysis of the data. As a result of the study, it was found that gifted and talented students are most interested in courses of chemistry, informatics and mathematics while courses of history, literature and philosophy were the least favored. Other findings of the study are significant differences in course interest of gifted childrenobtained according to the variables of gender, duration of education in SAC, type of identification area in SAC and type of program in SAC.

To cite this article:

Dereli, F., & Turk-Kurtca, T. (2023). Comparison of critical thinking dispositions of gifted students in support education (enrolled with SACs) and formal education. *Journal for the Education of Gifted Young Scientists*, *11*(1), 1-13. DOI: http://dx.doi.org/10.17478/jegys.1215769

Introduction

The education of gifted and talented students is seen as necessary with respect to both individual and social priorities (Sak, 2014). Each person has the right to request education in accordance with their individual differences (Clark, 2013). In addition, it is necessary to take educational measures to transform the existing potential of gifted children, which are considered one of the most important and great resources of societies, into performance at the highest level (Davis et al., 2011; NAGC, 2006). Societies greatly benefit from advanced development of all kinds of skills and abilities of its members, regardless of the field they are in. Things that nurture and help develop the individual also nurture the society (Clark, 2013).

Contributions to society in all areas by means of human effort largely come from gifted and talented people (Clark, 2013; Dai, 2010; Davis et al., 2011). To perform complex and innovative tasks that are much more than what is expected from normal people, the society needs gifted and talented people (Dai & Chen, 2014). We need a large number of integrated and hardworking people to fulfill the tasks that will lead us to a fulfilling and well-established future (Clark, 2013). The Education of gifted and talented individuals can produce programs and experiences so that gifted and talented individuals can better meet both their own needs and the needs of society (Dai & Chen, 2014). Talent training

1 These institutions (Science and Art Centers) are the institutions that provide support education to gifted children in Turkey.

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can provide awareness for people who require more nurture for their unique fields of talent in order to become aware of their potential (Davis et al., 2011).

Education of the Gifted and Talented: Science and Art Center

Gifted and talented students who demonstrate advanced characteristics compared to their peers have different educational needs (Renzulli & Reis, 1997). Special training is required to meet these educational needs (Dai & Chen, 2014). In addition to very few private intitutions in Turkey, the Science and Arts Centers (SAC) affiliated to Ministry of National Education are in service for gifted and talented individuals. As of 2021, 182 SAC centers (MNE, 2020) serve in each provincial center and in major districts in accordance with the principles of Special Education Services Regulation n.30471 signed on 07.07.2018 and the directive of Science and Arts Centers published in December 2019. According to annual SAC student identification guidelines; 1st, 2nd and 3rd grade primary schoolers are nominated and applied to programs by their teachers on two fields at most: painting, music and general intellectual abilities. Nominated students are taken to the Group Scanning Application done in centers via tablet computers. From the group of students who are successful in Group Scanning Application, those who were applied in fields of painting and music for their abilities are evaluated individually in their respective fields in commissions, and those who were applied for their intellectual abilities are taken to intelligence testing in Counseling and Research Centers. Those who succeed in individual assessments and intelligence tests in commissions at this stage are entitled to register to SAC without quota restrictions. After completing this process in several months', winning students are enrolled to SAC at the beginning of the next academic year on their 2nd, 3rd or 4th grade in education (MNE, 2019a).

SAC students continue their formal education with their peers while recognizing their individual abilities and improve upon them to realize their potential in accordance with SAC educational programmes. Education and training activities to be held in SAC are planned to not coincide with students' formal education hours on weekdays and/or on weekends. Students enrolled in SAC are taken into the programs of orientation, supportive program, individual talent recognition program (ITRP), special talent discovery program (STRP), and project development (MNE, 2019b). SAC programme steps and descriptions are featured in Table 1 (MNE, 2019b).

Table 1. SAC's educational program stages and descriptions

Program Stages	Program Description
Orientation Program	Educational programconducted to learn about the social and psychological development of students who have recently enrolled in SAC and to introduce SAC to these students.
Supportive Program (SP)	Educational program conducted by associating students, identified with the field of intellectual ability, with all fields/disciplines.
Individual Talent Recognition Program (ITRP)	Educational program that is conducted for students who are identified with the field of general intellectual ability and who have completed the support training program to become aware of their individual abilities.
Special Talent Discovery Program (STRP)	Education program that is conducted to improve the special abilities of students from the ability field of musical and visual arts who completed the orientation program, and students from the ability field of general intellectual abilities who completed individual talent recognition program.
Project	Educational program that students undergo individually or with a group under the guidance of a consultant teacher in a field/discipline in accordance with their interests, desires and abilities.

Educational programs to be applied in SAC are student-centered and interdisciplinary. They are conducted under the guidance of leading/consultant teachers in accordance with individual education in a way to allow students to acquire top-level cognitive, social, personal and academic skills such as effective problem solving, decision making, and creativity. The aim is to improve students as individuals who learn by applying, participating in production, solving problem, thinking uniquely, communicating effectively and researching scientifically (MNE, 2019b).

Characteristics and Interests of Gifted and Talented Students

Gifted and talented students have special characteristics and interests (Brown & Stambaugh, 2014). Those who work with gifted and talented stutents must consider both their needs and their characteristics (NAGC, 2012). In other words, it is necessary for educators, families and managers to learn about the characteristics and educational needs of gifted and talented students. Meeting these needs and developing appropriate educational strategies for the gifted and talented is essential (Nellis & Gridley, 2000). Due to different developmental characteristics and different interests of gifted and talented children, certain changes to educational programmes must be made (Brigham & Bakken, 2014; Renkin, 2016; Renzulli & Reis, 1997). As a result, gifted and talented children who are educated in the best way possible will make great contributions to both themselves and society (Clark, 2013).

Gifted and talented students are often bored by repetitiveness, routines that don't meet their needs and absence of response to their expectations (Renkin, 2016). Developing and implementing educational experiences that support the gifted and talented individuals' interests should be considered as a requirement of their needs and characteristics (Meador, 1996). Because of this, a collaborative approach to planning, implementing and evaluating education should be conducted between families and teaching staff (Kennedy, 2002). Teachers, field experts, peers, families and consultants should play a role in the educational processes of gifted and talented children (Clark, 2013).

By developing and supporting education suitable for gifted students, these students can continuously improve to their full potential (Tomlinson, 2005). As a result of supporting and developing their abilities, these students will be able to increase their potential to the highest possible level (Renzulli, 2005). Educators can ensure that gifted and talented students improve the level and scope of their abilities (Kelemen, 2020). Programmes that aim to improve abilties in gifted and talented students' education should provide learning experiences that will present challenging tasks in students' areas of interest from an early age (Brown & Stambaugh, 2014).

When the needs of gifted and talented students are defined and the educational programme is designed to meet these needs, students attain significant achievements and develop their perception of competence (Ford, 2011). Gifted and talented students have the ability to work on a topic of interest in detail with great focus for a long time (Clark, 2013). Firstly determining their interests,abilities, and skills stand out during the creation phase of the processes that will help gifted and talented students in their educational processes (Kaplan, 2005). In order to learn about gifted and talented students and work on developing their abilities, be it at home or at school, we first need to explore their abilities and interests (Clark, 2013; Kelemen, 2020). Results of these findings will also help us create opportunities to develop their abilities, interests and skills to the highest levels.

If we consider giftedness as an innate gift and an opportunity for success, it should be taken into account that this potential success can disappear when appropriate conditions such as environmental stimulants or correct educational regulations are not established (Reis & McCoach, 2000). Considering the developmental characteristics of gifted and talented children, not receiving much needed support may result in negative emotional impact (Clark, 2013). At the same time gifted and talented children unable to demonstrate sufficient motivation can also be observed (Clark, 2013; Davis et al., 2011). Children need to have a sufficient level of desire and interest to excel in their fields of ability (Renzulli, 2005). Gifted and talented children can show intense motivation by concentrating their abilities on their interests (Davis et al., 2011). Because the needs and interests play an important role in motivation, arrangements to motivate gifted and talented children must be related directly or indirectly to their needs and interests (Renzulli, 2005). Teachers must show gifted and talented children new goals in their fields of skill (Brown & Stambaugh, 2014). Gifted and talented children should be supported by motivating them in relation to these new goals.

The Current Study

Gifted and talented people need a high level of intellectual stimulation, rapid learning and interpretation of complex information, researching the topic they are given in depth, and constantly questioning and examining it (Kim et al., 2013). In order to meet these requirements, they need to be offered opportunities and environments where they can demonstrate and develop their interests and abilities and work in flexible and creative organizations (Koshy, 2002). In order to provide appropriate learning experiences to advance gifted and talented children to the next level, it is necessary

to know their current level, what abilities they possess and their topics and fields of interest (Colangelo & Davis, 2003). In this context, the study of the areas, and courses of interest of gifted and talented students studying in Science and Arts Centers constitutes the problem of the research. The variability of students' interest levels depending on types of courses and subjects in terms of demographic characteristics of the students was also examined in this study.

Method

This study is carried out in the survey research model among quantitative research patterns in order to determine the gifted students' interests in the subject fields. Survey research aims to identify certain characteristics or situations belonging to a group, such as skills, attitudes and ideas (Fraenkel et al., 2012).

Participants

Population of this study included 57.360 gifted and talented students in 182 official Science and Arts Centers affiliated to Ministry of National Education of Turkey (MNE, 2020). From these centers, data were obtained from 370 gifted students studying in 12 different SAC centers using stratified purposive sampling method. Descriptive information for the students involved in the study is included in Table 2. The sample consists of %53.1 (n=197) female and %46.8 (n=173) male, 370 students in total. SAC Centers students were enrolled in, SAC programme steps, diagnostic areas, how long they were in SAC, and their school grades out of SAC were described in Table 2.

Table 2. Descriptive informations of participants

Variable		**N**	**%**
Gender	Female	197	53.2
	Male	173	46.8
Type of Diognostic*	IT	308	83.2
	VAT	33	8.9
	IT and VAT	14	3.7
	IT and MT	9	2.4
	MT	3	.8
	IT, VAT and MT	2	.5
	VAT and MT	1	.2
Program Stages	ITRP-1	144	38.9
	ITRP-2	43	11.6
	SP-1	14	3.8
	SP-2	91	24.6
	STRP-1	27	7.3
	STRP-2	10	2.7
	STRP-Music	4	1.1
	STRP-Painting	27	7.3
	Project	10	2.7
Duration of Education in SAC	1 year	1	.3
	2 years	180	48.6
	3 years	82	22.2
	4 years	70	18.9
	5 years	24	6.5
	6 years	6	1.6
	7 years	4	1.1
	8 years	1	.3
	10 years and above	2	.5
Grade	3rd grade	17	4.6
	4th grade	85	23.0
	5th grade	188	50.8
	6th grade	41	11.1
	7th grade	16	4.3
	8th grade	8	2.2
	High School Preparatory Grade	1	.3
	High School First Grade	4	1.1

	High School Second Grade	4	1.1
	High School Third Grade	4	1.1
	High School Fourth Grade	2	.5
	Total	370	100.0

IT: Intellectual Talent **VAT:** Visual Art Talent **MT:** Musical Talent **SP:** Supportive Program **ITRP:** Individual Talent Recognition Program **STRP:** Special Talent Discovery Program

Twelve regions have been established in Turkey, taking into account functional relations between provinces, geographical conditions, suitability for the purpose of collecting statistics and making plans (NUTS12: The Nomenclature of Territorial Units for Statistics; MNE, 2020). According to the online form NUTS12 prepared within the scope of the study, 12 provinces with a high population density and not adjacent to each other were selected and all 5,969 gifted and talented students studying in official Science and Arts Centers in these provinces were forwarded a Microsoft Forms link. 370 of these students have returned the forms by filling them out on online platforms. The distribution of the selected regions, and provinces, is shown in Table 3.

Table 3. Distribution of selected provinces according to NUTS12

NUTS12 Region	Provinces	SAC Name	Total Students	N	%
Istanbul	İstanbul	Başakşehir Sezai Karakoç	411	14	3.4
West Marmara	Edirne	Şehit Nefize Çetin Özsoy	283	36	12.7
Aegean	Manisa	Manisa/Şehzadeler	591	34	5.7
East Marmara	Düzce	Düzce/Merkez	296	26	8.7
West Anatolia	Konya	Konya/Meram	627	49	7.8
Mediterranean	Adana	Adana/Çukurova	904	53	5.8
Central Anatolia	Kayseri	Çetin Şen	698	42	6
West Black Sea	Amasya	Şehit Ferhat Ünelli	261	11	4.2
East Black Sea	Trabzon	Faruk Başaran	550	19	3.4
Northeast Anatolia	Erzurum	Remzi Sakaoğlu	375	27	7.2
Central East Anatolia	Malatya	Malatya/Yeşilyurt	657	47	7.1
Southeast Anatolia	Gaziantep	Nuray Tuncay Kara	316	12	3.7
Total			5.969	370	6.1

Data Collection Tools

Data were obtained by researchers using two-section electronic forms created via Microsoft Forms. In the first part of the form, there are 7 questions prepared by researchers aimed at determining the demographic characteristics of SAC students. In the second part of the form, there is a total of 100 items of "Course Interest Battery for Gifted and Talented Students" consisting of 10 sub-dimensions in 5 point likert type scale format. This scale was developed by Bakan (2019) and its validity and reliability studies were carried out. As a result of factorial analysis, it is seen that a 10-factor structure appears in this measurement instrument (Bakan, 2019). Consisting of 100 items named as Mathematics, Physics, Chemistry, Biology, Literature, History, Geography, Philosophy, Informatics and English, the structure covers 67.59% of the total variance (Bakan, 2019). When the Course Interest Battery for Gifted and Talented Students items are examined on the factor loadings, History subscale gives a value between .76 and .84; Informatics subscale gives a value between .79 and .85; Philosophy subscale gives a value between .71 and .83; Biology subscale gives a value between .65 and .81; Physics subscale gives a value between .67 and .81; Chemistry subscale gives a value between .68 and .80; English subscale gives a value between .71 and .86; Mathematics subscale gives a value between .69 and .84 ; Literature subscale gives a value between .57 and .81; and Geography subscale gives a value between .65 and .74 (Bakan, 2019). In the context of these values, according to the evaluation of the course interest battery for gifted and talented students, 2 items can be qualified as good, 17 items as very good, and the remaining 81 items as excellent. In addition, when looking at the

reliability of the subscales in the analysis conducted to test the reliability of the scale, Cronbach's Alpha values vary between values of .92 and .95. As a result of the analyses, Course Interest Battery for Gifted and Talented Students developed by Bakan (2019) scale is shown to be valid and reliable for measurement of interest of gifted and talented children in the fields of Mathematics, Physics, Chemistry, Biology, Literature, History, Geography, Philosophy, English and Informatics.

Procedure

During research process, before field work, University Ethics Committee ethical approvement no. E-29563864-050-04.04-26100 dated 24.02.2021 and Ministry of National Education research approval no. E-27250534-605.01-23496788 dated 01.04.2021 were acquired. Then, a total of 12 different SAC were determined from each of the 12 different regions predetermined by NUTS12. The managers of these SAC Centers were reached out to and were informed about the study and the received permission forms were transmitted. Directors of the institutions shared the Microsoft Forms link prepared by researchers with their students in online environments. Under voluntary participation, 370 students from 12 different SAC Centers filled out the forms sent as links.

Data Analysis

Analysis of the data was done via SPSS 22 packet data analysis program. Descriptive statistics and difference tests were utilized during the analysis of the data. Table 4 shows the average scores, standard deviations, skewness and kurtosis values of students who continue to attend SAC.

Results

Results obtained from data analysis are shown in this segment. First descriptive statistics and then difference statistics are included in the table.

Table 4. Descriptive statistical results of subscales of course interest inventory for gifted and talented students

Courses	N	$\bar{X}$	Sd	Skewness	Std. Error of	Kurtosis	Std. Error	Min	Max
Mathematicss	370	39.35	9.854	-0.932	.127	0.214	.253	10	50
Physics	370	35.91	9.240	-0.335	0.127	-0.663	0.253	10	50
Chemistry	370	40.51	7.873	-0.879	0.127	0.369	0.253	13	50
Biology	370	37.73	8.921	-0.627	0.127	-0.268	0.253	10	50
Literature	370	31.62	9.120	0.051	0.127	-0.675	0.253	10	50
History	370	30.83	9.419	0.07	0.127	-0.651	0.253	10	50
Geography	370	35.80	8.339	0.443	0.127	-0.07	0.253	10	50
Philosophy	370	32.10	8.645	0.07	0.127	-0.638	0.253	10	50
Infomatics	370	39.63	10.234	-0.952	0.127	0.052	0.253	10	50
English	370	38.28	10.132	-0.828	0.127	-0.052	0.253	10	50

Upon examination, Table 4 reveals that courses students most interested in are the following in order: chemistry ($\bar{X}$=40.51, Sd=7.873), informatics ($\bar{X}$=39.63, Sd=10.234) and mathematics ($\bar{X}$=39.35, Sd=9.854). In contrast, courses students least interested in are the following in order: history ($\bar{X}$=30.83, Sd=9.149), Literature ($\bar{X}$=31.62, Sd=9.120), and philosophy ($\bar{X}$=32.10, Sd=8.645). In order to determine depending on which variables scores that students received from the course interest battery have changed, independent samples t-test was performed on two-categorical variables. Results of the analysis are shown on Table 5.

Table 5. Results of independent samples t-test obtained from the scale scores according to variables gender, identification field, and number of years of attending to SAC

Courses	Variables	Groups	N	$\bar{X}$	Sd	t	p
Mathematic	Gender	Female	197	39.05	9.679	-.609	.543
		Male	173	39.68	10.069		
	Diognastic	Intellectual	333	39.64	9.886	1.726	.085
		Other	37	36.70	9.276		
	Duration	First 2 years	181	39.75	9.445	.769	.442
		3 years and above	189	38.96	10.241		
Physics	Gender	Female	197	34.92	8.989	-2.210	.028*

		Male	173	37.04	9.417		
	Diognastic	Intellectual	333	36.34	9.159	2.701	.007**
		Other	37	32.05	9.189		
	Duration	First 2 years	181	36.41	8.990	1.009	.314
		3 years and above	189	35.44	9.473		
Chemistry	Gender	Female	197	40.18	7.719	-.862	.389
		Male	173	40.89	8.050		
	Diognastic	Intellectual	333	40.97	7.737	3.370	.001**
		Other	37	36.43	8.009		
	Duration	First 2 years	181	41.16	7.419	1.549	.122
		3 years and above	189	39.89	8.256		
Biology	Gender	Female	197	38.31	8.385	1.336	.182
		Male	173	37.07	9.475		
	Diognastic	Intellectual	333	38.07	8.920	2.207	.028*
		Other	37	34.67	8.443		
	Duration	First 2 years	181	38.72	8.219	2.095	.037*
		3 years and above	189	36.78	9.469		
Literature	Gender	Female	197	35.00	8.369	8.277	.000**
		Male	173	27.77	8.402		
	Diognastic	Intellectual	333	31.32	9.187	-1.909	.057
		Other	37	34.32	8.104		
	Duration	First 2 years	181	32.06	8.521	.912	.362
		3 years and above	189	31.20	9.661		
History	Gender	Female	197	30.37	9.275	-1.012	.312
		Male	173	31.36	9.580		
	Diognastic	Intellectual	333	31.03	9.491	1.213	.226
		Other	37	29.05	8.666		
	Duration	First 2 years	181	31.62	9.012	1.580	.115
		3 years and above	189	30.08	9.757		
Geograph	Gender	Female	197	35.99	7.635	.486	.627
		Male	173	35.57	9.093		
	Diognastic	Intellectual	333	35.94	8.426	1.029	.304
		Other	37	34.46	7.485		
	Duration	First 2 years	181	36.58	7.418	1.785	.075
		3 years and above	189	35.04	9.090		
Philosophy	Gender	Female	197	33.81	7.815	4.148	.000**
		Male	173	30.15	9.142		
	Diognastic	Intellectual	333	32.15	8.819	.352	.725
		Other	37	31.62	6.966		
	Duration	First 2 years	181	32.75	8.603	1.426	.155
		3 years and above	189	31.47	8.661		
Infomatics	Gender	Female	197	36.45	10.721	-6.760	.000**
		Male	173	43.25	8.298		
	Diognastic	Intellectual	333	40.19	10.007	3.176	.002**
		Other	37	34.62	11.013		
	Duration	First 2 years	181	41.32	8.964	3.147	.002**
		3 years and above	189	38.01	11.101		
English	Gender	Female	197	39.61	9.200	2.735	.007
		Male	173	36.75	10.927		
	Diognastic	Intellectual	333	38.17	10.230	-.612	.541
		Other	37	39.24	9.278		

Duration	First 2 years	181	38.77	9.41696	.914	.361
	3 years and above	189	37.80	10.777		

* p< .05. ** p< .01

Upon examination of Table 5, according to independent samples t-test results, gifted and talented students' average scores on interest in physics reveal a significant difference in terms of gender (p< .05) and identification type (p< .01). According to this, it can be said that male students ($\bar{X}$=34.92) show more interest in physics courses than female students ($\bar{X}$=37.04). It can be said that only those identified with the area of intellectual ability ($\bar{X}$=36.34) have higher interest scores than those identified with other areas ($\bar{X}$=32.05) in terms of interest shown for physics. Compared to those identified with other areas ($\bar{X}$=36.43), those identified with the area of intellectual ability ($\bar{X}$=40.97) show higher interest in chemistry (p< .01); those identified with the area of intellectual ability ($\bar{X}$=38.07), in comparision to those who are identified with other areas ($\bar{X}$=34.67), show more interest in biology (p< .05). In addition, those who attend SAC for two years ($\bar{X}$=38.72), compared to those who have attended BİLSEM for three or more years ($\bar{X}$=36.78), show more interest in biology (p< .05). A significant difference was found in terms of gifted students' interest score averages in literature and philosophy courses in relation to gender variable (p< .05). It can be said that female students ($\bar{X}$=35.00), in comparision to male students ($\bar{X}$=27.77), have more interest in literature. Also female students ($\bar{X}$=33.81), in comparision to male students ($\bar{X}$=30.15), have more interest in philosophy course. Interest in informatics course significantly differs in terms of variables gender, identification area, and years of attending to SAC (p< .01). According to this, male students ($\bar{X}$=43.25) compared to female students ($\bar{X}$=36.45); those identified with intellectual ability area ($\bar{X}$=40.19) compared to those diagnosed in other areas ($\bar{X}$=34.62) and those who have attended SAC for two years ($\bar{X}$=41.32) compared to those who attended SAC for three or more years ($\bar{X}$=38.01) reveal a higher score of interest in informatics. In addition to the independent samples t-test, another difference test, ANOVA test, was used in the analysis of the data. For ANOVA test ITRP-1 and ITRP-2 groups; SP-1 and SP-2 groups; STRP-1, STRP-2, STRP-Painting and STRP-Music groups were combined in their respective areas. Members in the project development group were excluded due to their small group size. ANOVA results are shown in Table 6.

Table 6. ANOVA results of the scale scores depending on which group students are identified with

Courses	Groups	Sum of Squares	df	Mean Square	F	p	Significant Difference
Mathematics	Between Groups	448.763	2	224.381	2.314	.100	
	Within Groups	34612.834	357	96.955			
	Total	35061.597	359				
Physics	Between Groups	1367.504	2	683.752	8.271	.000**	ITRP>STRP, SP>STRP
	Within Groups	29512.896	357	82.669			
	Total	30880.400	359				
Chemistry	Between Groups	844.378	2	422.189	7.425	.001**	ITRP>STRP, SP>STRP
	Within Groups	20300.486	357	56.864			
	Total	21144.864	359				
Biology	Between Groups	992.452	2	496.226	6.601	.002**	SP>ITRP ITRP>STRP, SP> STRP
	Within Groups	26836.704	357	75.173			
	Total	27829.156	359				
Literature	Between Groups	318.429	2	159.214	1.969	.141	
	Within Groups	28873.346	357	80.878			
	Total	29191.775	359				
History	Between Groups	528.062	2	264.031	3.064	.048*	SP > ITRP, SP>STRP
	Within Groups	30759.602	357	86.161			
	Total	31287.664	359				
Geograph	Between Groups	756.350	2	378.175	5.823	.003**	SP > ITRP, ITRP >STRP, SP> STRP
	Within Groups	23183.425	357	64.940			
	Total	23939.775	359				
Philosophy	Between Groups	241.419	2	120.710	1.668	.190	
	Within Groups	25833.556	357	72.363			

	Total	26074.975	359				
Infomatics	Between Groups	3106.480	2	1553.240	16.155	.000**	SP> ITRP, ITRP>STRP, SP>STRP
	Within Groups	34324.620	357	96.147			
	Total	37431.100	359				
English	Between Groups	269.703	2	134.852	1.324	.267	
	Within Groups	36368.697	357	101.873			
	Total	36638.400	359				

* p< .05 ** p< .01 **SP:** Supportive Program **ITRP:** Individual Talent Recognition Program **STRP:** Special Talent Discovery Program

Upon examination of Table 6, significant statistical differences were found in scores of gifted students from different groups in SAC for physics [$F_{(2,357)}$= 8.271, p< .01]; chemistry [$F_{(2,357)}$= 7.425, p< .01]; biology [$F_{(2,357)}$= 6.601, p< .01]; history [$F_{(2,357)}$= 3.064, p< .05]; geography [$F_{(2,357)}$= 5.823, p< .01]; and informatics [$F_{(2,357)}$= 16.155, p< .01]. According to the results of LSD test, which was conducted to find out which groups differ between the average scores of interest in different courses according to the groups, ITRP group ($\bar{X}$=36.13) compared to STRP group ($\bar{X}$=32.18), and SP group ($\bar{X}$=37.88) again compared to STRP group ($\bar{X}$=32.18) reveal a higher interest score in physics course. Also ITRP group ($\bar{X}$=40.74) compared to STRP group ($\bar{X}$ =37.75), and SP group ($\bar{X}$=37.88) again compared to STRP group ($\bar{X}$=37.75) reveal a higher interest score in chemistry course. SP groups ($\bar{X}$=32.48) compared to ITRP group ($\bar{X}$=30.18), and STRP group ($\bar{X}$=29.23) reveal a higher interest score in history course. SP group ($\bar{X}$=39.81) compared to both ITRP ($\bar{X}$ =37.50) and STRP ($\bar{X}$ =34.94) groups, and ITRP group ($\bar{X}$ =37.50) compared to STRP ($\bar{X}$ =34.94) group reveal a higher interest score in biology course. SP group ($\bar{X}$ =37.63) compared to both ITRP ($\bar{X}$ =35.67) and STRP ($\bar{X}$ =33.37) groups, and ITRP ($\bar{X}$ =35.67) group compared to STRP ($\bar{X}$ =33.37) group reveal a higher interest score in geography course. SP group ($\bar{X}$ =43.19) compared to both ITRP ($\bar{X}$ =39.79) and STRP ($\bar{X}$ =34.52) groups, and ITRP ($\bar{X}$=34.52) group compared to STRP group reveal a higher interest score in informatics course.

Discussion

The aim of this study is to determine the course interests of gifted and talented students. For this purpose, the interest rate averages of gifted students were determined according to the courses. In the process of education, one variable associated with learning is students' interest. According to Hidi (1990) interest plays an important role in learning process and classes. Interest is a motivational variable that combines the emotional and informational aspects of motivation; and attention, concentration and impact characterizes this psychological condition (Hidi, 2006). Educators and teachers express that interest is a motivational prerequisite for learning and teaching (Ainley et al., 2002). Considering the classroom environment for such a situation, at least a little interest sparked in the student towards the course is a prerequisite for the student to be engaged with the course and allow the student to try to learn that course out of curiosity (Güven-Yıldırım & Köklükaya, 2016). Especially in school environments, interests that establish the classroom behavior may occur as a result of social categories such as culture and gender (Ainley et al., 2002). However, students can also carry their preexisting interests into the school environment (Bergin, 1999). In this context, it is necessary to investigate preexisting interests in students and support these interests in a way that will increase them further. If the student has an interest in the course and the subject, this activates a strong desire to learn and makes learning easier. At the same time students learn faster, store subjects they learn in memory for longer periods of time and are more successful in courses they are interested in (Güven-Yıldırım & Köklükaya, 2016).

Determining the interests of gifted students is considered important for creating and providing them with individual support (Němcová, 2016). Determining the student's interests helps us develop these areas or make the necessary interventions by identifying factors affecting the ineartia (Clark, 2013; Němcová, 2016). Giftedness is not a constant state, it is influenced by extensive individual and social factors (Clark, 2013). Most publications about giftedness today have lists of typical characteristics of gifted children (Clark, 2013; Davis et al., 2011; Sak, 2014). Typical characteristics stand out in determining giftedness, but it is not enough (Pfeiffer, 2015). Typical characteristics showing signs of giftedness in children should be considered together with their interests and abilities (Němcová, 2016). It is crucial to determine the topics and courses they are interested in, and their potential abilities which they bring together with their characteristics (Brigham & Bakken, 2014; Preiffer, 2015). These interests can be used to identify giftedness in people, as

well as play a vital role in supporting them (Clark, 2013; Pfeiffer, 2015). The common goal of many educational systems is to provide a qualified and quality service in line with the interests and abilities of students (Kaplan & Hertzog, 2016). Abilities and skills are the foundation of the phrase “talent” in expressions such as "very talented compared to their peers" or "have the potential to become very talented", (Němcová, 2016). Because of this, determining interests is an important step in the discovery of abilities.

As a result of this study, it was observed that students show interest the most in chemistry, informatics and mathematics; and the least in history, literature and philosophy. Çöllüoğlu Gülen (2017) has discovered that gifted students show more interest in scientific courses. In a study conducted on students enrolled in SAC, students have stated that chemistry course "helps in associating information in general and achieving reasoning" (Başar Daz et al., 2010). The second most interested course observed was Informatics. With today's technological developments, the ability to think computationally has emerged as one of the skills that people should acquire (Wing, 2006). This skill includes subskills such as creative thinking, critical thinking, algorithmic thinking and problem solving (Wing, 2006; Schreglmann & Öztürk, 2018). Gifted and talented children stand out with their competence in using high-level cognitive skills (Schreglmann & Öztürk, 2018). One of the common points for both chemistry course and the ability to think computationally is mathematical logical intelligence. Computational thinking is not the same as mathematical logical thinking, but they are connected (Barr et.al., 2011). Similarly, there is a relationship between success in chemistry and mathematical logical intelligence. In addition to that, a study conducted on the gifted revealed that mathematics is described by them as "discoverable, linear, complex, composed of parts, has depth and infinite" (Öztürk et al., 2014). Mathematical logical intelligence, rather than memorizing concepts, allows the use of cognitive skills such as understanding, assimilation, adaptation and analysis (Öztürk et al., 2014).

Another finding of the study is related to gender differences. It can be said that male students have a higher interest in courses of physics and informatics than female students. Female students are more interested in literature and philosophy courses. This result is consistent with other study results. Literature of this field shows that boys are better at courses that involve science and math, and girls are better at social classes such as literature (Olszewski-Kubilius & Lee, 2011; OECD, 2019). In addition, this difference appears to be more common in gifted students than in average students (Preckel et.al. 2008). It has been found that this difference is influenced by the expectation of success due to gender stereotypes by people in the environment (Bleeker & Jacobs, 2004). The similar resulting stereotypes can be seen in different societies. A study conducted in Germany has shown that male students are more interested in physics than female students. It was found that while the physics course was the least interesting course for female students, it was the most interesting course for male students. In addition, the study has shown that male students are less interested in literature and foreign languages than female students (Hoffmann, 2002).

It is observed that those who have attended SAC for at least two years show greater interest in courses of biology and informatics compared to those who have three or more years in SAC Centers. Although gifted and talented people have a heterogeneous structure within themselves, when we think about the community formed by this group within the framework of normal distribution curve, we can expect that their interests and abilities will differ among themselves. The role of family, environment and society in the formation of interest from an early age cannot be ignored (Clark, 2013; Mazer, 2012). At a young age, social priorities with a limited environment can arouse interest in certain areas. But then the opportunities and environments that can be offered for different areas, subjects and courses can lead to a change of interest (Mazer, 2012). By presenting physical environments for different areas, the potential of the gifted can be revealed and their interests can be supported. The various facilities and environments offered in SAC Centers can lead to recognition of more areas for gifted students (Bakan, 2019). It is also believed that the findings obtained as part of the study may also be due to this condition.

According to the identification groups in the entrance to SAC, it can be said that those identified only with intellectual ability have a higher interest in physics, chemistry, biology, and informatics than those identified with other types of fields. This may be due to the fact that areas other than the general area of intellectual ability in SAC’s identifications are more art-oriented, other areas being painting and music. More art-oriented content and environments

are offered to gifted students who are recognized for their visual artistic and musical talents (MNE, 2019a, 2019b). As a result, gifted students identified with the intellectual ability may have more interest in courses and fields that can be called basic sciences, while gifted students identified with the fields of visual arts and musical ability may have more interest in artistic fields.

Study findings indicate that ITRP groups, compared to STRP groups, have more interest in physics, chemistry, biology, geography and informatics. SP group compared to STRP group have more interest in physics, chemistry, history, biology, geography and informatics. SP groups, compared to ITRP groups have more interest in history, biology, geography and informatics. ITRP, STRP and SP group each have unique content and features. While SP groups are groups in which students identified with intellectual ability take all courses, ITRP groups aim to make these students identified with intellectual ability notice their special abilities. Therefore, they are groups where the interest of gifted students is concentrated in several areas and courses. For this reason, students in ITRP group have interests directed towards less courses and fields that they themselves determined (Bakan, 2019). STRP groups aim to improve special abilties of those from different fields who completed the orientation program and those from the field of general intellectual abilities who completed ITRP program (MNE, 2019b). Thus, STRP groups' gifted and talented students get very specific interest courses and topics and are encouraged to continue their studies in these topics (Bakan, 2019). In this context, it is believed that the result of the study shows that SAC has achieved the goal of revealing the importance of interest.

Implications

In this study, the course interests of gifted and talented students were examined in a cross-sectional design. It is believed that longitudinal studies may be more useful in future studies. In addition, certain groups of students are larger due to years SAC became widespread. A repeated study in later years are predicted to overcome this limitation. From a pratical point of view, determining the interests of students is important in terms of increasing the activities for the target courses. This is why when transferring to ITRP groups, it is believed that this scale can be adapted.

Declarations

Conflict of interest the authors declare that they have no confict of interest.

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Journal for the Education of Gifted Young Scientists, 11(1), 15-32, March 2023
e-ISSN: 2149- 360X
jegys.org
dergipark.org.tr/jegys

Young Wise Publishing
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Research Article

Bibliometric analysis of graduate theses on music culture in Turkiye[1]

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Article Info

Received: 10 December 2022
Accepted: 30 January 2023
Available online: 15 March 2023

Keywords
Bibliometric analysis
Graduate theses
Music culture
Music research in Türkiye

2149-360X/

Abstract

As a result of cultural influence, music has expanded with certain tools with the interaction of societies. In this context, there are many postgraduate studies on music-related culture. This study aims to analyse the postgraduate theses written up in Turkey in the field of music culture within the framework of certain parameters. This research was carried out under the document analysis technique, which is one of the qualitative research types. It has been decided to conduct a bibliometric analysis in order to determine the numerical analysis of publications produced by people or structures in a region, in a certain region and a period. The data source of the study consists of postgraduate theses on culture in the field of music in Turkey between the years 2000-2022 in the database of the National Thesis Center. These theses were obtained by scanning the keywords of "Music, Music Culture, Culture" on the National Thesis Data website of the Higher Education Institution. A total of 104 masters', 32 doctorate and 2 art proficiency theses were selected. Content analysis technique was used in the analysis of the data. In the analysis of data; In the content analysis method, the themes were classified and coded according to their subjects, and in the descriptive analysis method, frequencies and percentages were indicated by showing them with tables and graphics. As a result of the research regarding the examination of theses; bibliometric analysis was performed according to academic degree, publication year, publication type, institution, method, university and subject distribution. The majority of research methods and techniques used in research are qualitative studies and assessments.

To cite this article:

Yilmaz, H., & Acar, Y. (2023). Bibliometric analysis of graduate theses on music culture in Turkiye. *Journal for the Education of Gifted Young Scientists*, *11*(1), 15-32. DOI: http://dx.doi.org/10.17478/jegys.1232182

Introduction

Culture; The formation of a community from the experiences of living together is the values, beliefs, attitudes, interpretations and events transferred from generation to generation (Balkan, 2008). Culture is the physical, psychological, economic, political, social, cultural etc. It can be expressed as the manifestation of other situations with the material and spiritual interaction. Culture is an important phenomenon for societies.

One of the most important phenomena in the culture produced by man is art (Dağdeviren, 2017, p. 5). Music is an important tool in art. Music is a social expression that emerges with the common interaction of societies as a result of cultural influence. In the field of music, cultural studies are blended and matched with concepts such as language, culture, skill, knowledge and transfer, and its relationship with music is written in a certain process.

Music culture studies are important not only in terms of musicology, but also in terms of revealing the codes of the cultural structure of the society. Written or unwritten cultural heritages that have survived to the present day emerge with the lifestyles and value phenomenon of existing societies. In the civilizations of ancient societies, music, together with culture, played an important role in transferring the culture of nations to future generations in terms of

1 This study is the obtained version of the "Bibliometric Analysis of Postgraduate Theses on Music Culture in Turkey" documents, which were presented as an oral presentation at the 2nd International Rast Music Congress on 14-15 January 2023 and the explanation congress abstracts were published.

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communication and interaction. Cultural differences and similarities of societies through music have also affected music culture and left permanent traces in human life.

In the 21st century, it is very convenient and easy to reach the desired information with the help of technology. However, the accuracy of each information, the quality and reliability of reference sources are very important. With the increase in studies conducted in universities in recent years, quality studies have been carried out and interdisciplinary studies have increased. In her study, Delikara (2019, p. 4) stated that the value of postgraduate theses and academic studies in universities has increased, research topics have expanded, and many joint studies have been made in interdisciplinary fields.

A university is an autonomous teaching and research institution that produces, transmits and disseminates information for the public good (Ortaş, 2004). Universities that produce scientific knowledge and develop the society are institutions that train academicians as experts and functions in a certain field in postgraduate education (Önal, 2018). Universities can be described as institutions that provide scientific research other than education and vocational training (Karadağ, 2009). In graduate studies, scientific information is systematically and consistently produced (Edyburn, 2000). For this purpose, it is very important to develop newly formed knowledge and to form theories and practices (Fazlıoğulları and Board, 2012). Postgraduate studies are an important tool in revealing scientific knowledge.

Vocational education is provided within the university in other disciplines such as music, music teaching, music sciences, musicology, music technologies, which are in the Fine Arts Education department of the Conservatory, Faculty of Fine Arts, education faculties. Music can reveal the experiences of societies as a result of cultural interaction. In this study, it is requested to make a quantitative analysis of the studies that focus on the term culture together with music, and to reveal the subjects and methods of scientific studies in the related field with bibliometric data.

Bibliometrics is the quantitative analysis of the publication produced by individuals or institutions in a certain area, in a certain period and in a certain country or a certain region, and the relations among these publications (Yılmaz, 1999, p. 7). Bibliometrics is the quantitative analysis of publications such as author, subject, year, language, publication information, cited sources (Pritchard, 1969, cited in Yozgat & Kartaltepe, 2009). Bibliometrics is the revealing of the subjects, authors, methods and status of a certain area, in a certain region (Wallace, 1989). When combined with available data, bibliometrics is a broad and rich process of scientific processes (Kim & Mcmillan, 2008). Bibliometrics is author, subject, publication information, cited sources, etc. of publications or documents quantitative analysis of other features (Al & Tonta 2004).

A bibliometric analysis of research in different disciplines was made when these studies on what was studied in postgraduate theses on the subject were examined. It is seen that studies named; Al and Tonta (2004), "Analysis of Citation: References in Hacettepe University Department of Librarianship Theses", Birinci (2008), "Bibliometric Analysis of Turkish Journal of Chemistry", Tatar and Ece (2012), "Bibliometrics of Music Articles in Scientific Journals" Profile", Önal (2017), "Bibliometric Profile of Papers: IX. National Music Education Symposium", Çiçek and Kozak (2012) "Anatolia: Bibliometric Profile of Peer-Reviewed Articles Published in the Journal of Tourism Research", Polat, Sağlam and Sarı (2013) "Bibliometric Analysis of Atatürk University Journal of Economics and Administrative Sciences", Dumrul and Aysu (2006), "Articles: Evaluation and Bibliography (1981-2005)", Yozgat and Kartaltepe (2009) "Bibliometric Profile of Papers in National Management and Organization Congress Books: A Research on Organization Theory and Organizational Behavior Statements", Yılmaz (1999) "The Importance of Bibliometrics in terms of Library and Information Science", Ulu and Akdağ (2015), "Bibliometric Profile of Published Peer-Reviewed Articles: The Example of Selçuk Communication Journal", Karagöz and Koç (2019) "Bibliometric Analysis of Articles Published in the Journal of Mother Tongue Education" ", Atılgan, Atakan and Bulut (2008) "Citation Analysis of Turkish Librarianship Journals" Şen (2020), "Research About Word of Mouth (Wom) With Bibliometric Analysis" It is seen that studies named.

Purpose and Importance of the Research

As a result of cultural influence, music has expanded with certain means with the interaction of societies. In this direction, there are many postgraduate studies on music-related culture. This research can be evaluated in terms of originality, because when the literature is examined, no bibliometric study has been found in the field of music culture. In this study, it is aimed to analyze the postgraduate theses made in Turkey in the field of music culture within the

framework of certain parameters. In addition, it is thought that this study on music culture is important in terms of shedding light on the related studies planned to be done in the future.

Problem of the Research

The problem sentence of the research is "What do the bibliometric analysis results of postgraduate theses made in the field of music culture in Turkey include?" The sub-problems are as follows;

- How is the distribution of postgraduate theses written in the field of music culture according to academic degrees?
- What is the distribution of graduate theses written in the field of music culture by years?
- How is the distribution of postgraduate theses written in the field of music culture according to languages?
- How is the distribution of postgraduate theses written in the field of music culture according to institutes?
- How is the distribution of postgraduate theses in the field of music culture according to data collection method?
- How is the distribution of postgraduate theses written in the field of music culture according to universities?
- What is the distribution of keywords used in postgraduate theses written in the field of music culture?
- How is the distribution of postgraduate theses written in the field of music culture according to their subjects?

Method

Research Model

This research was carried out in accordance with the document analysis technique, which is one of the qualitative research types. It was decided to carry out bibliometric analysis in order to numerically determine the publications produced by people or structures in a certain region and in a certain period. Bibliometric research is an analytical method that sheds light on the developments and problems in a related discipline or makes suggestions by determining the current state of the discipline (Ball & Tunger, 2006; Hall, 2011). It is the numerical analysis of the publications recommended by institutions or individuals in a certain region in a certain period and the relations between these publications (Broadus, 1987, p. 374; Tübitak Cabim, 2020).

Documents

The data source of the study consists of postgraduate theses on culture in the field of music in Turkey between the years 2000-2022 in the database of the National Thesis Center.

Data Collection Tool

As a data collection tool, a total of 102 masters', 32 doctorate and 2 art proficiency theses were obtained by scanning the the keywords of "Music, Music Culture, Culture" on the National Thesis Data website of the Higher Education Institution.

Data Analysis

In the analysis of data; In the content analysis method, the themes were classified and coded according to their subjects, and in the descriptive analysis method, frequencies and percentages were indicated by showing them with tables and graphics. Theses examined in the related study; Bibliometric analysis was made by examining them according to their academic degrees, publication year, publication language, institute, method, keywords, universities, and subject distribution. Summarizing data according to categories is defined as content analysis (Merriam, 2018). With the coding made in content analysis, characteristics such as orientation, frequency, density and area are determined according to the research questions (Neuman, 2010).

Results

In the first sub-problem of the research, *"How is the distribution of postgraduate theses on music culture in Turkey according to their academic degrees?"* The answer to the question has been sought.

Table 1. Distribution of graduate theses by academic degree

Thesis Type	**f**	**%**
Master's	102	75.0
Doctorate	32	24.0
Art Proficiency	2	1.00
Total	**136**	**100**

When Table 1 is examined, it is determined that the distribution of postgraduate theses on music culture in Turkey according to their academic degrees is %75 (102) master's thesis, %24 (32) doctoral thesis, and %1 (2) proficiency in art thesis has been done.

In the second sub-problem of the research, *"How is the distribution of postgraduate theses on music culture in Turkey by years?"* The answer to the question has been sought.

Table 2. Distribution of graduate theses by years

Year	**Frekans (f)**	**Percent (%)**
2001	1	1.00
2003	1	1.00
2005	1	1.00
2007	2	1.00
2008	2	1.00
2009	2	1.00
2011	2	1.00
2012	5	4.00
2013	7	5.00
2014	11	8.00
2015	10	7.00
2016	6	4.00
2017	8	6.00
2018	9	7.00
2019	24	18.00
2020	12	9.00
2021	18	13.00
2022	15	11.00
Total	**136**	**100.0**

When the distribution of postgraduate theses on music culture in Turkey by years is analysed in Table 2, the highest increase was %18 (n=24) in 2019, %13 (n=18) in 2021, and %15 (n=15) in 2022 and %9 (n=12) in 2020. It was determined that only 1 thesis study was conducted in 2001, 2003 and 2005. There is no postgraduate thesis on music culture between 2002, 2004, 2006, 2010.

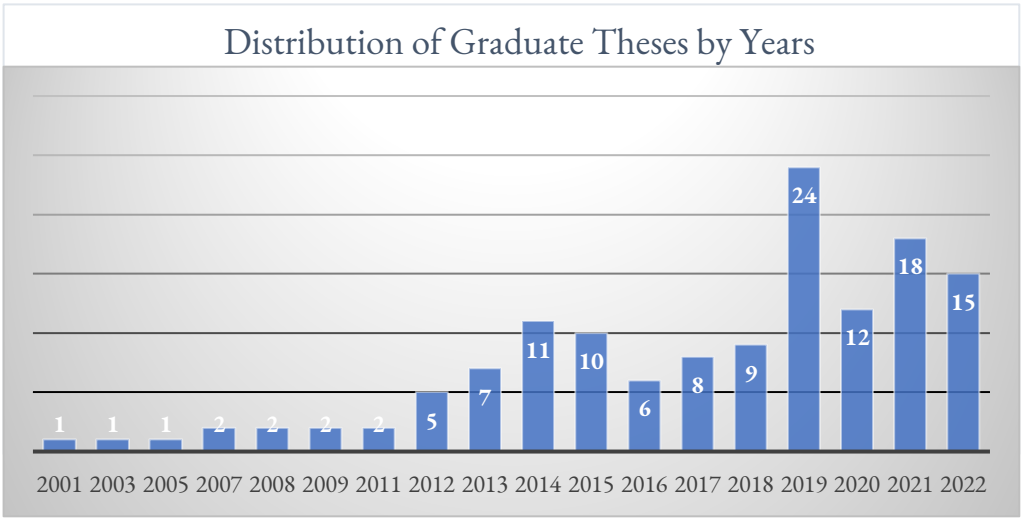

Figure 1. Distribution of graduate theses by years

According to the data obtained in Graph 1, when the distribution of postgraduate theses on music culture in Turkey by years is examined, it has been determined that the highest increase in the studies carried out is between 2019, 2021, 2022 and 2020, respectively. It has been determined that there is a significant increase in 2019 compared to other years.

In the third sub-problem of the research, *"How is the distribution of postgraduate theses on music culture in Turkey according to institutes?"* The answer to the question has been sought.

Table 3. Distribution of graduate theses by institutes

Institute	**Masters'**		**Doctorate**		**Proficiency in Art**	
	f	**%**	**f**	**%**	**f**	**%**
Institute of Educational Sciences	8	8	6	19	-	-
Fine Arts Institute	9	9	4	12	1	50
Social Sciences Institute	82	80	22	69	1	50
Graduate Institute	3	3	-	-	-	-
Total	**102**	**100.0**	**32**	**100.0**	**2**	100.0

When Table 3 is examined, it was determined that the most postgraduate theses were written in the distribution of postgraduate theses on music culture according to institutes. The dissertations written in the master's field in the distribution according to the institutes; n=82 in the institute of social sciences, n=9 in the institute of fine arts, n=8 in the institute of educational sciences and n=3 in the graduate institute programs.

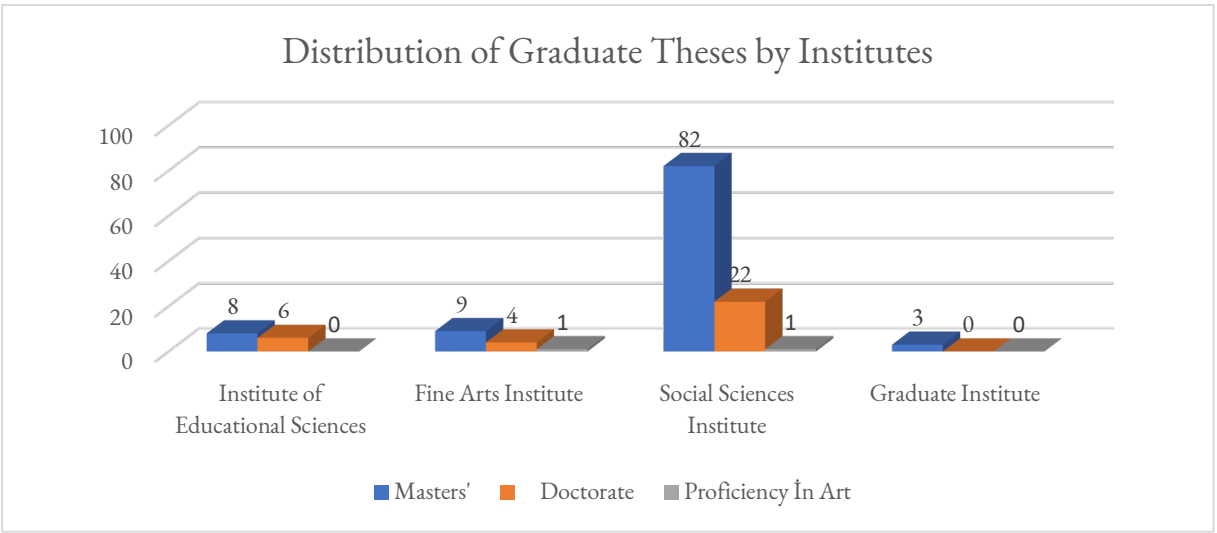

Figure 2. Distribution of Graduate Theses by Institutes

In the data obtained, the theses written in the field of doctorate; it was determined that n=22 in the institute of social sciences, n=6 in the institute of educational sciences and n=4 in the institute of fine arts. In the field of proficiency in art, it was determined that n=1 postgraduate theses were written in the field of fine arts and social sciences.
According to the data obtained in Graph 2, when the distribution of postgraduate theses on music culture in Turkey according to institutes is examined, it is seen that the most postgraduate theses are in social sciences institute and postgraduate studies.

In the fourth sub-problem of the research, *"How is the distribution of postgraduate theses on music culture in Turkey according to languages?"* The answer to the question has been sought.

Table 4. Distribution of Postgraduate Theses by Language

Languages	**Masters's**		**Doctorate**		**Proficiency in Art**	
	f	**%**	**f**	**%**	**f**	**%**
Turkish	99	97.00	25	78.00	2	100.0
English	3	3.00	7	22.00	-	
Total	**102**	**100.0**	**32**	**100.0**	**2**	**100.0**

According to the data analyzed in Table 4, in the distribution of postgraduate theses on music culture in Turkey by language; It was determined that 126 of 136 theses were written in Turkish and 10 of them were written in English. In addition, when the table is examined, 99 of the master's theses are in Turkish and 3 are in English; 25 of the doctoral theses are in Turkish and 7 are in English; It has been determined that all of the proficiency theses in art are written in Turkish.

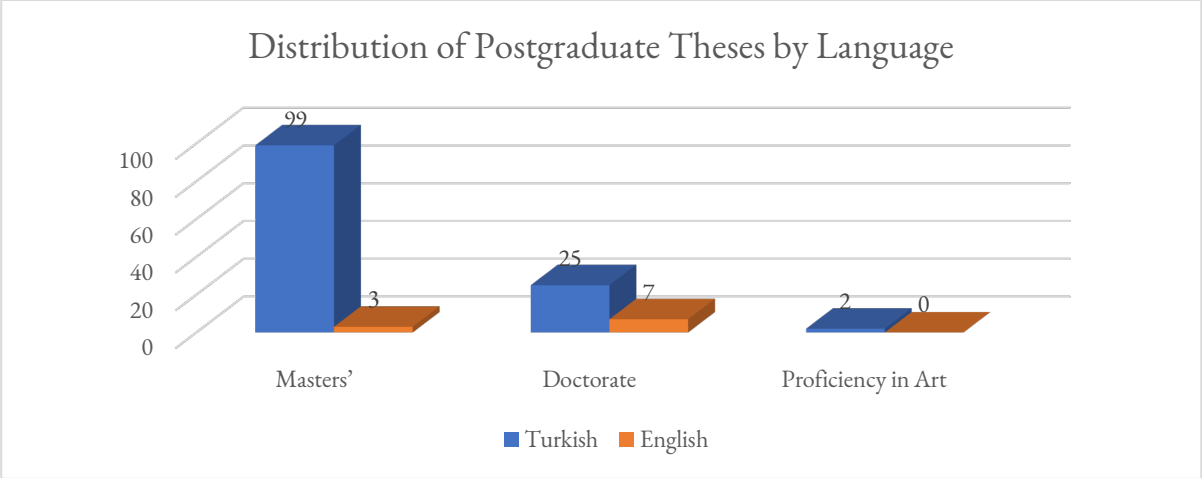

Figure 3. Distribution of postgraduate theses by language

When Graph 3 is examined, according to the data obtained, it is seen that the distribution of postgraduate theses on music culture in Turkey by languages is mostly Turkish language and postgraduate.

In the fifth sub-problem of the research, *"How is the distribution of postgraduate theses on music culture in Turkey according to data collection method?"* The answer to the question has been sought.

Table 5. Distribution of graduate theses by data collection method

Method	**Master's**		**Doctorate**		**Proficiency in Art**	
	f	**%**	**f**	**%**	**f**	**%**
Qualitative Method	94	92.00	28	87.00	1	50.00
Quantitative Method	8	8.00	-	-	1	50.00
Mixed Method	-	-	4	13.00	-	-
Total	**102**	**100.0**	**32**	**100.0**	**2**	**100.0**

When Table 5 is examined, according to the data collection method; It was determined that qualitative method was used in 122 theses, quantitative method was used in 9 theses, and mixed method was used in 4 theses. It is noteworthy that the mixed pattern method was not used in the master thesis studies in the table.

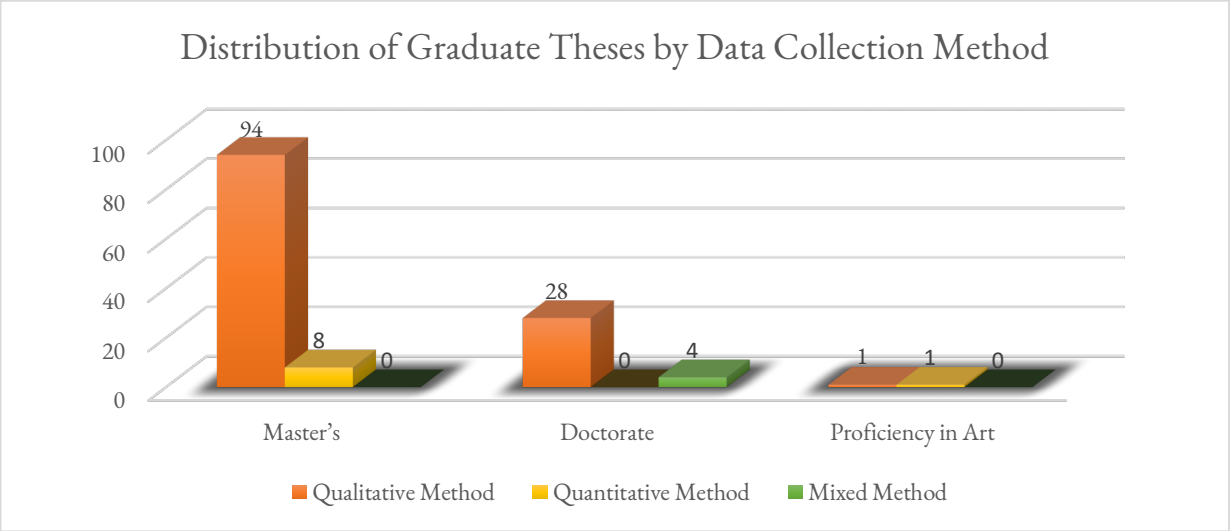

Figure 4. Distribution of graduate theses by data collection method

Looking at Graph 4, it has been determined that the distribution of postgraduate theses on music culture in Turkey according to data collection method is qualitative method and postgraduate.

In the sixth sub-problem of the research, *"How is the distribution of postgraduate theses on music culture in Turkey according to universities?"* The answer to the question has been sought.

Table 6. Distribution of graduate theses by universities

Universities	**Master's**		**Doctorate**		**Proficiency in Art**	
	f	**%**	**f**	**%**	**f**	**%**
Hacettepe University	5	5.00	-	-	-	-
Anadolu University	1	1.00	1	3.00	-	-
Inonu University	10	10.00	8	25.00	-	-
Marmara University	2	2.00	1	3.00	1	50.0
Trakya University	1	1.00	-	-	1	50.0
Middle East Technical University	2	2.00	1	3.00	-	-
Erciyes University	1	1.00	2	6.00	-	-
Istanbul University	-	-	2	6.00	-	-
Yedi Tepe University	-	-	1	3.00	-	-
Abant İzzet Baysal University	-	-	1	3.00	-	-
Ege University	5	5.00	1	3.00	-	-
Gazi University	3	3.00	2	6.00	-	-
Dokuz Eylül University	3	3.00	2	6.00	-	-
Halic University	8	8.00	-	-	-	-
Bogazici University	-	-	1	3.00	-	-
Mimar Sinan University	3	3.00	-	-	-	-
Pamukkale University	1	1.00	-	-	-	-
Istanbul Technical University	1	1.00	4	13.00	-	-
Kocaeli University	4	4.00	-	-	-	-
Suleyman Demirel University	1	1.00	-	-	-	-
Mersin University	1	1.00	-	-	-	-
Baskent University	5	5.00	-	-	-	-
Cumhuriyet University	4	4.00	-	-	-	-
Afyon Kocatepe University	6	6.00	-	-	-	-
Ataturk University	3	3.00	1	3.00	-	-

Yildirim Beyazit University	1	1.00	-	-	-	-
Ankara University	1	1.00	1	3.00	-	-
Nigde Omer Halisdemir University	3	3.00	-	-	-	-
Yildiz Technical University	1	1.00	1	3.00	-	-
Sakarya University	2	2.00	-	-	-	-
Mediterranean University	3	3.00	-	-	-	-
Bahcesehir University	1	1.00	-	-	-	-
Istanbul Aydin University	1	1.00	-	-	-	-
Maltepe University	1	1.00	-	-	-	-
Istanbul Bilgi University	1	1.00	1	3.00	-	-
Istanbul Okan University	2	2.00	-	-	-	-
Hatay Mustafa Kemal University	1	1.00	-	-	-	-
Bursa Uludag University	3	3.00	-	-	-	-
Gaziantep University	2	2.00	-	-	-	-
Nineteen May University	1	1.00	-	-	-	-
Aydın Adnan Menderes University	1	1.00	-	-	-	-
Duzce University	1	1.00	-	-	-	-
Batman University	1	1.00	-	-	-	-
Ankara Haci Bayram Veli University	2	2.00	-	-	-	-
Necmettin Erbakan University	1	1.00	1	3.00	-	-
Ankara Music University	1	1.00	-	-	-	-
Total	**102**	**100.0**	**32**	**100.0**	**2**	**100.0**

When the distribution of postgraduate theses on music culture in Turkey according to universities is examined in Table 6, it is seen that studies on music and culture are carried out in 46 universities in total. It has been determined that the university with the most studies is Inonu University and it is in the first place with 10 masters' and 8 doctoral theses in the field.

In the seventh sub-problem of the research, the answer to the *question "How is the distribution of the keywords used in the postgraduate theses written in the field of music culture in Turkey?"* was sought.

Table 7. Distribution of Graduate Theses by Keyword

Most Used Keywords	Frequency of Use	%
Music	72	15.5
Music Culture	50	10.8
Culture	23	4.9
Popular culture	16	3.4
Popular music	15	3.2
Music Education	12	2.6
Ethnomusicology	10	2.2
Identity	10	2.2
Turkish folk music	10	2.2
Follk music	8	1.7
Cultural Identity	8	1.7
Music Works	7	1.5
Religious Music	5	1.1
Folk Culture	5	1.1
Musical	5	1.1
Turkish music	5	1.1
Alevism	4	0.9
Dance	4	0.9
Culture Industry	4	0.9
Music lessons	4	0.9
Music Sociology	4	0.9
Cinema	4	0.9
Others (used 1, 2 and 3 times)	180	38.7
Total	**465**	**100**

According to the table, when the keywords of 136 theses are examined; It was determined that a total of 465 keywords were used in theses. Among the identified keywords, it was seen that the keyword "music" was used the most in 72 theses with a rate of %15.5. Apart from this keyword, the most used keywords are; "Music culture" in 50 theses with %10.8, "culture" in 23 theses with %4.9, "popular culture" in 16 theses with %3.4, "popular music" in 15 theses with %3.2, "music education" in 12 theses with %2.6, "ethnomusicology", "identity" and "Turkish folk music" in 10 theses with a rate of 2.2, "folk music" and "cultural identity" in 8 theses with a rate of %1.7, "musical works" in 7 theses with a rate of %1.5, with a rate of %1.1 "Religious music", "folk culture", "musical" and "Turkish music" in 5 theses, "Alevism", "dance", "culture industry", "music lesson", "music sociology" and "cinema" in 4 theses with a rate of %0.9. Apart from these, it was seen that there were various keywords used 1, 2 and 3 times in 180 theses.

In the eighth sub-problem of the research, *"How is the distribution of postgraduate theses on music culture in Turkey by field?"* The answer to the question has been sought.

Table 8. Distribution of Graduate Theses by Field/Department

Field/Department	**Matsers'**		**Doctorate**		**Proficiency in Art**	
	f	**%**	**f**	**%**	**f**	**%**
Department of Music Teaching	10	10.00	8	25.00	-	-
Department of Music Sciences and Technology	7	7.00	7	22.00	-	-
Sociology Department	7	7.00	-	-	-	-
Art and Design Department	-	-	1	3.00		
Department of Basic Sciences	2	2.00	-	-	-	-
Department of Journalism	1	1.00	-	-	-	-
Turkish Music Major/Art Science	18	18.00	1	3.00	-	-
Department of Musicology	8	8.00	-	-	-	-
Department of Western Languages and Literature	1	1.00	-	-	-	-
Political Science and Public Administration Science	-	-	1	3.00	-	-
Communication Sciences Department	1	1.00	2	6.00	-	-
Turkish Islamic Art Department	1	1.00	-	-	-	-
Radio Television Cinema Department	4	4.00	1	3.00	1	50.0
Musicology and Music Theory	-	-	2	6.00	-	-
Department of Turkish Education	-	-	1	3.00	-	-
Department of Anthropology	-	-	1	3.00	-	-
Tourism Management / Management Department	2	2.00	-	-	-	-
Department of Music and Performing Arts	1	1.00	-	-	-	-
Music Department/Art Branch	16	16.00	1	3.00	1	50.0
Music Sciences Department	3	3.00	4	13.00	-	-
Department of Turkish Religious Music	1	1.00	-	-	-	-
Department of Islamic History and Arts	1	1.00	1	3.00	-	-
Department of Gastronomy	2	2.00	-	-	-	-
Department of History	2	2.00	1	3.00	-	-
Turkish Classical Music Department	1	1.00	-	-	-	-
Department of Circassia Language and Literature	1	1.00	-	3.00	-	-
Department of Media and Cultural Studies	3	3.00	-	-	-	-
Department of Art History and Museology	1	1.00	-	-	-	-
Department of General Turkish History	1	1.00	-	-	-	-
Department of Public Relations and Publicity	1	1.00	-	-	-	-
Department of Traditional Turkish Music	3	3.00	-	-	-	-
Drama and Acting Major	1	1.00	-	-	-	-
Department of Cultural Management	1	1.00	-	-	-	-
Total	**102**	**100.0**	**32**	**100.0**	**2**	**100.0**

When Table 8 is examined, it is seen that postgraduate theses on music culture in Turkey are studied in many sub-disciplines according to the field/discipline. In this direction, it has been determined that in the theses whose

bibliometric analysis is made, it is mostly done in music majors. It is understood that postgraduate theses on music culture are also studied in branches other than music sciences.

Conclusion and Discussion

In the distribution of the postgraduate theses on music culture in Turkey according to their academic degrees while largest number of studies have been done in the field of master's thesis, the least number of studies were carried out in the field of proficiency in art. In his study, Dağdeviren (2017) reached the conclusion that the master's thesis was in the first place in the study related to the field. Gençel-Ataman (2019) stated in his study on flute that it is the most master's thesis in postgraduate studies. Aydınlı-Gürler (2021) stated that as a result of his examination in the field of music teaching, master's theses took the first place. As a result of these studies, it can be said that the reason why master's theses are more than doctorate and proficiency in art theses is because the researches in the master's field get quick and quick results.

When the distribution of graduate theses on music culture in Turkey by years is examined, it has been determined that the highest increase in the studies carried out is in 2019, 2021, 2022 and 2020. It has been determined that there is a significant increase in 2019 compared to other years. It was determined that only 1 thesis study was conducted in 2001, 2003 and 2005. There is no postgraduate thesis on music culture among the years 2002, 2004, 2006, 2010. Studies have found that there is an increase in certain periods (Sadık, 2018; Ece, 2017; Gerten, 2020; Tatar & Ece, 2012). Dağdeviren (2017) stated that there were no studies in certain periods in the studies conducted and this situation should be investigated. In this study, it was noteworthy that there were only 2 studies in the field of proficiency in art. Sadık (2018) explained in her research that doctorate-level studies are limited.

In the distribution of postgraduate theses written on music culture in Turkey according to institutes, it was determined that most of the theses were written in the social sciences institute in the field of master's and doctorate. It was determined that the institute of educational sciences took the second place. Sadık (2018) stated that most studies were written in graduate and social sciences institutes. Demiral and Saatçi (2019), it is understood that bibliometric analysis of studies on cultural heritage is carried out mostly in social sciences institutes. Çelebi, Çiftsüren and Dilek (2020) with Göktaş-Kulualp and Yıldırım-Kalem (2019) stated that the most thesis was written in the social sciences institute. There were also studies that found results in the opposite direction of this research (Aydınlı-Gürler, 2021; Kazu and Çam, 2019).

In the distribution of postgraduate theses on music culture in Turkey according to languages; It was noted that almost all of them were written in Turkish. It has been determined that there are very few studies that were determined to be written in English. In addition, it was determined that the majority of the studies written in English were doctoral theses. Göktaş-Kulualp and Yıldırım-Kalem (2019) stated that the original language of the majority of postgraduate theses on culture and cultural differences is Turkish. Sadık (2018) stated that published theses are generally in Turkish. The reason why the language of the published postgraduate studies is Turkish is thought to be that the education is in Turkish.

In the data collection method of postgraduate theses on music culture in Turkey, it was determined that 122 out of 136 theses were designed and written with a qualitative method. As a result of the analysis, it was seen that the mixed design method was never used in postgraduate theses. It is thought that it is due to the fact that the researchers design their studies as a qualitative method, that music culture and the term culture can be described as a sociological concept in general, and that the results can be obtained by collecting data such as observation, interview, literature review and field study. Halaç and Bademci (2021) stated in their research that the studies were generally conducted with qualitative methods and also that data were collected through interviews, questionnaires and observations.

When the distribution of postgraduate theses on music culture in Turkey according to universities is examined, it is understood that the most of the postgraduate theses were written in Inonu, Haliç, Afyon Kocatepe, Hacettepe, Ege and Başkent Universities, respectively. In total, it was determined that postgraduate studies on music culture were carried out in 46 universities. Sadık (2018) stated that the most studies were in Istanbul University. It can be said that in some universities, few or no postgraduate studies are affected by the year of establishment. Arap (2010) and Başaran et al. (2021) stated in their study that the year of establishment affects productivity and negatively affects the situation.

Aydınlı-Gürler (2021) stated in her study that more postgraduate theses in the field of music were completed respectively in Gazi, Marmara, İnönü, Dokuz Eylül and Atatürk universities.

It has been determined that a total of 465 keywords are used in the distribution of the keywords used in the postgraduate theses written in the field of music culture in Turkey. It has been observed that the keyword "music" is used the most among the identified keywords. Apart from this keyword, the most frequently used keywords are "music culture", "culture", "popular culture", "popular music", "music education", "ethnomusicology", "identity", "Turkish folk music", "folk". music", "cultural identity", "musical works", "religious music", "folk culture", "musical", "Turkish music", "Alevism", "dance", "culture industry", "music lesson", "music sociology" and "cinema". Apart from these, it was seen that there were various keywords used 1, 2 and 3 times in 180 theses. It has been seen that the keywords used in the research are compatible with the subject headings. In the study of Aydınlı-Gürler (2021) and Kılıç-tapu (2017), the compatibility of the keywords with the subject headings showed parallelism with the study.

It is seen that postgraduate theses on music culture in Turkey are studied in many sub-disciplines according to the field / branch of science. In this direction, it has been determined that in the theses whose bibliometric analysis is made, it is mostly done in music majors. It is understood that postgraduate theses on music culture are also studied in branches other than music sciences. Since studies on music culture are written in different departments, it is thought that it can be studied with an interdisciplinary approach. Göktaş-Kulualp and Yıldırım-Kalem (2019) explained in their study that studies with culture and cultural difference can be studied with different disciplines.

The distribution of postgraduate theses on music culture in Turkey according to their subjects is given in the appendices. When the subject distributions are examined, studies on music culture in general; It has been determined that he focuses on topics such as music, music culture, popular culture, popular music, cultural identity, music sociology, historical foundations, ethnomusicology.

Recommendations

In the related study, it was seen that the number of studies on music culture increased in 2019, 2021, 2022 and 2020. The points caused by this increase can be investigated. In addition, it has been determined that studies on music culture have increased in some universities. It is thought that the reason for the increase in these studies in theses universities may be a research topic. It is understood that the methods of the examined postgraduate these are not very clear in various universities and institutes. In particular, institutes should take a decisive role in the method section of the theses that are planned to be studied. It is understood what is required in the purpose, problem and method sections of postgraduate theses written in the field of education. However, in order to explain the method part of some universities, institutes need to be attentive in this area. Within the scope of the research, it has been determined that there is a great diversity in the fields of the theses written in the music departments. In particular, it can be ensured that the musical fields of the departments are understandable by determining the standard titles. In the study, only the bibliometric analysis of the postgraduate theses was made. For this purpose, bibliometric analyzes can be made by evaluating the articles, congresses, panels and symposiums that have been studied on the subject. For new studies to be carried out in this field, different methods, citations and parameters such as bibliography can be searched.

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Annex 1. Subject Titles of Master's Theses, Doctorate and Proficiency in Arts

2003	Metropolis, techno - culture, digitilized musical genres and clubbing in Turkey	Masters'
2007	The contribution of amateur music ensembles to urban life in İzmir cultural context, genres, repertoire, patronage	Masters'
2007	Opinions of teachers on beginning piano education depending on national music culture at vocational music education institutions (The case of Ankara province)	Masters'
2008	Cultural reconciliation and music: Musical dialogues direction to reconciliation between Turkish and greek communities in Cyprus	Masters'
2009	Connection between music and culture, music industry, writing music, sound of İstanbul	Masters'
2012	Musical identity in the context of music cultures Circassians Adapazari	Masters'
2012	Musical activities of the culture, art and folkloresocieties in Izmir and their roles (influences) to Izmir life	Masters'
2012	Cultural Basis and Socio-Musical Analysis of Arabesque Music in Turkey Since The 1930s	Masters'
2013	Curriculum design proposal for listening to music and culture course from music teachers candidate point of views	Masters'
2013	Popular culture, music and alienation in Hanif Kureishi's The Buddha of Suburbia and The Black Album	Masters'
2013	Autentic polyphonic properties of Yoruk Turkman music culture in Teke region (Southwest Anatolia)	Masters'
2014	Music as a communicative medium and a cultural product: Electronic dance music example	Masters'
2014	Evliya Çelebi Travelogue music culture	Masters'
2014	Analysis of Anadolu Rock music represantatives in Turkish Pop music culture and folk songs existing in their art	Masters'
2014	The music practices of İzmir-Selcuk Macedonian emigrants as the expression tool of Macedonian cultural identity	Masters'
2014	Women in identity and folk culture women's musical styles of expression	Masters'
2014	A sociocultural study on the process of use of Anatolian musical elements in guitar practices in Turkey	Masters'
2015	The suggestions on the research and development of the gypsies in Tekirdağ in Thrace region, their cultures, music, musical culture and the process of their teaching and learning music	Masters'
2015	Music as a cultural value and connection between music and mythology:A semiological approach to Amon Amarth	Masters'
2015	Cultural interaction spheres in musical material and sources: 'Foreign' elements, layers, and their structural changes in Turkish maqam music in the Ottoman Period	Masters'
2015	The participant motivations to cultural events: A research on participants of Mersin International Music Festival 2013	Masters'
2015	The effects of popular music culture on the high school youth: City of Kocaeli / Izmit county sample	Masters'
2015	Horn (trumpet) tradition in Turkish military music culture and perform tecniques of modals in today's mehter bands	Masters'
2016	The process of spreading the European music in the Ottoman / Turkish music culture and the levantine musicians	Masters'
2016	The brunch teacher's musical culture, who works in middle grade educational instituons: A country sample in Sivas	Masters'
2016	Musical elements of folk culture in Çeltikci district, Burdur	Masters'
2016	Music, identity and cultural memory correlation at Özcan Alper's films, Autumn and Future Takes Long	Masters'
2016	The clarinet in the music culture of the territory of Erzurum	Masters'
2016	Contributions of Saim Akçıl to the Turkish music culture	Masters'
2017	Evaluation of the relation between Central Anatolian and Aegean Abdal cultures through musical analysis	Masters'
2017	A study on musical materials development for the course of religious an moral knowledge of the 4th grade students	Masters'
2017	The musical cultures of the doms living in Antakya, Hatay	Masters'
2017	Arab alewis (Nusayri) wedding (Ferah) music culture in Defne in the district of Hatay	Masters'
2017	The impact of popular culture discussions in the West on music sociology studies in Turkey: A study on the classification of literature	Masters'

2017	Historical roots and the cultural aspects of the rhythm equipments in Asian Shaman musical rituals	Masters'
2018	Examination of Turkish music culture in terms of students' opinions in the ministry of education secondary school music lesson curriculum (2006-2017 curriculum, Karamürsel case)	Masters'
2018	A descriptive research on the cultural industry approaches to the use of popular music works in advertisements	Masters'
2018	Folkloreic element in jazz music practices in Turkey: Localities and representations of inventions gathered from traditional Anatolian music culture within conventional strategies	Masters'
2018	Yoruk musical culture of Dirmil	Masters'
2018	Culture industry and musical theatre	Masters'
2019	Popular culture, music and social differentiation: A research on symphonic music listeners in Eskişehir	Masters'
2019	Evaluation of the effect of music teacher on music lesson, school culture and post-school life of individuals	Masters'
2019	Comparison of music culture information competencies of secondary students in terms of music types	Masters'
2019	The impact of popular music and social media on music in the axis of popular culture	Masters'
2019	The effects of Turkish tv series on other cultural and creative industries: Music industry	Masters'
2019	The effect of popular culture in Turkish art music programmes of TRT Müzik: The case of 'Akşam Sefasi'	Masters'
2019	The relationship between meal (Loukoumades) music culture of Anatolian Alevis	Masters'
2019	At the modernisation period revolution of music and instruments as a oart of the cultural policy of the republic	Masters'
2019	Determinations on musical culture of Diyarbakır and Celal Güzelses' work of art on TRT reportory	Masters'
2019	Musical Practices that taking part in Cultural Transmission Process in Bursa-İnegöl-Şehitler Village Alevi-Bektashi	Masters'
2019	Music teacher candidates classical west music investigation of competencies	Masters'
2019	In terms of music culture the interaction between Greek Island Chios and Çeşme	Masters'
2019	The music studies in terms of cultural in Durulova, a quarter of Kürecik district in Malatya Province	Masters'
2019	Music practices in folk culture of Afyonkarahisar city, Şuhut district, tekke villace	Masters'
2019	Globalization, popular culture and Islamic adaptation: Transformation of Islamic music and dhikr	Masters'
2019	The singing styles of Ardeşen region in music culture	Masters'
2019	Samsun during the dissemination of popular music culture in Turkey between 1960's and 1970's	Masters'
2019	Music culture of Turks emigrated from Ezerçe Village in Bulgaria	Masters'
2019	The effect of socio-cultural characteristics on parents' attitudes towards music course	Masters'
2019	Bosniak music culture in terms of cultural change: Sampling in Kütahya	Masters'
2019	The music factors in the folk culture of Manisa city Demirci town Mahmutlar neighborhood	Masters'
2020	Music as a cultural commodity: After 90's pop music sample	Masters'
2020	Class distinction and cultural inequalities: A study of musical taste of university students and its social foundations	Masters'
2020	Pomak musical culture	Masters'
2020	Music and cultural transmission in Circassian diaspora in Turkey	Masters'
2020	The music culture in the East Anatolia region, the city of Malatya, Hekimhan twon and Basak borough and it's daily place in life	Masters'
2020	The cultural and music life of Dom society in Southest of Anatolia	Masters'
2020	Music and media mediation: 'Kolbastı' as an example of transculturalization	Masters'
2020	Music practices in the context of Anatolian folk culture (Example of İscehisar Alanyurt Village)	Masters'
2020	Inner Asian and Chinese cultural relations during Tang Dynasty: Music and dance (618-906)	Masters'

2020	Şuhut Kayabelen village's music practices in folk culture	Masters'
2020	Analysis and adaptation of ten selected educational music pieces of anatolian culture in accordance with Orff-Schulwerk 'music for children' publications	Masters'
2021	Rap music as a form of expression and culture in the context of music sociology	Masters'
2021	Contribution of Erzincan traditional music culture to music education	Masters'
2021	Turkish rap music within the grip of popular culture	Masters'
2021	Festivals within the context of event tourism: Side World Musics, Culture and Art Festival	Masters'
2021	Folk music culture of Bayburt region and musical characteristics of folk songs belonging to the region	Masters'
2021	The effect of popular music culture on Classical Turkish Music	Masters'
2021	A research on the impact of art of memory on cultural music heritage: A review of the music of Arabian Peninsula as a living cultural heritage	Masters'
2021	A historical overview of the emergence and development of Uzbek music culture in central Asia – analysis of similarities with Turkish music and studies on the subject	Masters'
2021	The analysis of general culture levels for the instruments of violin students who are from the Faculty of Education's Teaching Musics departments	Masters'
2021	Investigation in terms of various variables of auditory and visual images of performance videos on youtube platform that can be used in music culture lessons	Masters'
2021	The socio-cultural structure of Ali-Celal Abbas association and its musical reflections	Masters'
2021	East Trabzon region music culture and kemence artist Bahattin Camurali	Masters'
2021	The tradition of clarinet in Tunceli regional music culture	Masters'
2021	Transforming music programs in the axis of popular culture: The TRT case	Masters'
2021	Gypsy identity in cinema in the context of culture-music relationship: Case of the movie 'Transylvania'	Masters'
2021	Reflections of popular culture on music production in the 1980s in Turkey	Masters'
2022	Military music tradition, one of the most important representatives of Turkish music culture in the historical process, the life and works of composer flute İsmail Ayvazoğlu	Masters'
2022	An evaluation on the musical, symbolic and social reasons ofmarginalization policies towards the metal music culture and its followers and their responsive functionality in the construction of identity and community constellations	Masters'
2022	Definitions of music culture of the Agin region and music practices in traditional ceremonies	Masters'
2022	Attitudes of music teacher candidates towards multicultural education	Masters'
2022	The examination of the makam structures that posseses specific local names within Harput music culture	Masters'
2022	Food culture and music interaction in ancient civilizations; feasts, festivals, rituals	Masters'
2022	Kahramanmaraş music culture	Masters'
2022	Emin tenekeci as source person and heavy zeybek performer in Aydın traditional music culture	Masters'
2022	Evaluation of the music of the Armenian society living in Diyarbakir in a cultural context	Masters'
2022	Mixing past and future: Understanding the culture of the post-modern era in the context of electronic music	Masters'
2022	Folk music culture of Aydın region and musical features of nonverbal works belonging to Aydın region recorded in the TRT-THM repertoire	Masters'
2022	Investigation of Thedor W. Adono discourse on music in the cultural industrial cycle	Masters'
2022	A compilation on Ahiska Turks music culture	Masters'
2022	Live music culture in Kayseri	Masters'
2001	Music industry in Turkey: An Assessment in the context of political economy of cultural production	Doctorate

2005	The role of the folk songs used in school music education on formation of a musical-cultural identity Turkey, Bulgaria, Hungary samples	Doctorate
2008	Policies of planned development period for Turkish music culture and their impacts on turkish music training	Doctorate
2009	Cultural identifications of the Greek Orthodox elite of constantinople: Discourse on music in the nineteenth and early twentieth centuries	Doctorate
2011	Study of the objects related to music in the archeological museums in Turkey according to the culture, art and music education	Doctorate
2012	Cultural memory, identity and music: Armenians of Turkey	Doctorate
2012	The cultural meaning of 'makam' in the musics of Turkey after 1980	Doctorate
2013	An anthropological study of rembetiko music culture in Istanbul at the end of the first decade of the 2000s	Doctorate
2013	Music and socio-cultural function in Iran Turks	Doctorate
2013	The analyse of youth and popular music magazines in the reproduction process of youth culture: The case of Hey and Blue Jean magazines	Doctorate
2013	Music and sociocultural function in Iranian Turks	Doctorate
2014	Politics, struggle, violence, and the transformation of expressive culture: An ethnography of Kurds' musical practices in Turkey	Doctorate
2014	The analysis of woman theme in folk songs which are an aspect of culture and music education	Doctorate
2014	Music practices in Sivas Beydili village within the context of cultural identity	Doctorate
2014	An intercultural stüdyo on the flüte instruction at the education programs traning music trainers: Turkey and Germanyum case	Doctorate
2015	Adaptation strategies of musicians between the audience expectations and culture industry in terms of new media	Doctorate
2015	Religious music applications of Antakya Arab Orthodox cultural identity framework	Doctorate
2015	Cultural capital and cultural elitism in music preference: Cyprus example	Doctorate
2015	Cultural analysis on religious music practices of Istanbul Armenian Apostolic community	Doctorate
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2022	Improvisation in music culture	Doctorate
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Journal for the Education of Gifted Young Scientists, 11(1), 33-43, March 2023
e-ISSN: 2149- 360X
jegys.org
dergipark.org.tr/jegys

Young Wise Publishing
youngwisepub.com
gencbilgeyayincilik.com

Research Article

Exploring the teacher-learner ratio and its effect on invitational teaching and learning: A South African study

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Article Info

Received: 17 December 2022
Accepted: 23 January 2023
Available online: 15 March 2023

Keywords
Class size
Overcrowding
Teacher-learner ratio
Invitational teaching and learning

Abstract

There has been a rapid growth in learner enrolment in all South African public schools. The increased number of learners per teacher has created many challenges in the quality of teaching and learning. Various authors and educationist have argued and agreed that the teacher-learner ratio has an impact on invitational teaching and learning. Invitational teaching and learning (education) was coined by Purkey and Novak to ensure a conducive learning environment. They proposed the five powerful Ps, namely, people, places, policy, programmes and procedures which, if applied effectively will ensure classroom success. In this paper a quantitative descriptive study was undertaken to investigate the effect of the teacher-learner ratio on invitational teaching and learning using a survey to 150 participants in primary schools. Data was analysed using frequency tables. The findings of this study revealed that the teacher-learner ratio has a negative impact on the quality of teaching and learning. Teachers found it extremely difficult to offer support to learners who experienced barriers to learning. Furthermore, the large class size and overcrowding had an impact on the provisioning of resources to learners. The study recommended that the post-provisioning norms for South African schools should clearly articulate 1:30 so that school principals adhere to the policy. Finally, it is also recommended that all teachers should be capacitated through a formal programme on classroom management, especially large classes.

To cite this article:

Venketsamy, R. (2023). Exploring the teacher-learner ratio and its effect on invitational teaching and learning: A South African study. *Journal for the Education of Gifted Young Scientists*, *11*(1), 33-43. DOI: http://dx.doi.org/10.17478/jegys.1237615

Introduction

Rapid changes and accompanying problems such as overcrowded classrooms (West & Meier, 2020), inadequate educational facilities, poor discipline among learners and a loss of vision for the future currently impede quality invitational education in South Africa. From all sides, it is being said that something is radically wrong with our education system (Le Roux, 1993: 32). Education can only be effective if it can guide and encourage the learner to strive towards proper adulthood through support from the teacher. This is only possible if both teachers and learners are mutually involved with each other in a specific education. Van De Walle and Lovin (2006) advocate that the atmosphere and environment of the classroom influence learners' performance and educational outcomes. According to the Hun School of Princeton (2019) and Venketsamy (2000), the smaller the teacher-learner ratio, the greater the academic results, the relationships between teachers and learners and the support learners receive from their teachers.

According to Hartshorne (1992: 39, 56), research conducted by the Eiselen Commission found that the average teacher-learner-ratio in most South African schools was 1:43,8. According to Zenda (2019), in the last two decades, most

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South African schools have rapidly grown learner enrolment. There has been a steady increase in the number of learners per teacher, and this number began to peak at 1:59. This increased teacher-learner-ratio according to the Eiselen Commission, will lead to the deterioration of learning and greater indiscipline in schools, thus causing a breakdown in the teacher-learner relationship of trust, understanding and authority.

There are many demands made on the teachers in our schools. The schools, and particularly the teacher, have assumed the responsibility of being parent substitutes – in *loco-parentis.* For successful invitational learning, the teacher and the learner must have an educational relationship. It is through the relationship of trust and knowing that authority can be maintained. The mutual relationship of trust, knowing and authority is fundamental to preserving and promoting a conducive learning environment for improved learning outcomes. This paper aims to explore the teacher-learner ratio and its effect on invitational teaching and learning. The focus is on the relationship of knowing, trust and authority and how these three principles impact teaching and learning.

Explanation of Teacher-learner Ratio

Matthews and Ellis (2019) explain "ratio" as a quantitative relationship between two similar magnitudes determined by the number of times one contains the other integrally or fractionally. Teacher-learner-ratio refers to the number of learners grouped in a particular class. The Hun School of Princeton (2019) states that this number is about more than just the number of learners in a class (class size), but how this number affects the teaching-learning relationship between the teacher and learners (Venketsamy 2000). The teacher-learner ratio impacts the teacher's workload and how they can offer quality teaching and learning to their learners. Koc and Celik (2015) argue that the teacher-learner ratio also influences the services and support the teacher can show the learners in the class. According to the Hun School of Princeton (2019), they found that the lower or smaller the number of learners in a class, the greater the quality of teaching and learning.

Research has found that the teacher-learner ratio is one of the most vital indicators of learner success and engagement. Wright, Bergom, and Bartholomew (2017) state that the smaller the class size, the greater the opportunity for the teacher to work with individual learners. Singh and Mahomed (2013) found that teachers and learners could develop healthy one-on-one mentoring relationships. Venketsamy (2000) found that the lower the teacher-learner ratio, there was greater opportunity to lighten the workload of the teacher, thus enabling them to focus on the quality rather than the quantity of their teaching, learning and assessment. He also found that the smaller the class size, teachers and learners could develop a mutual relationship of knowing, trust and authority.

In their studies, Wright et al. (2017) and Venketsamy (2000) found that smaller class sizes provided learners with an opportunity to excel and harness their full potential and forge a positive mutual relationship with their teachers (Hun School of Princeton, 2019). Wright et al. (2017) agree that within smaller classes, teachers can address challenges experienced by learners and immediately offer assistance to individuals. In their studies, the Hun School of Princeton (2019) found that the lower teacher-learner ratio yielded better test scores, fewer dropout of learners and a higher graduation rate in their schools.

Invitational Theory and Education

Invitational learning (education) is based on the Invitational Learning Theory, contending that learning is enhanced when learners are invited into the learning environment using improved approaches (Haigh, 2011). Founded by Purkey (1991), Invitational Education (IE) aims to persuade learners into meaningful knowledge construction by removing barriers and obstacles to learning, causing learners to be disengaged and unreceptive (Haigh, 2011). The Invitational Learning Theory defines five domains, people, places, policies, programmes and processes (Purkey & Novak, 2015)

Invitational learning aims to make these domains intentionally inviting by cordially encouraging each learner to develop physically, intellectually and emotionally. The invitation is measured through four levels: Intentionally Disinviting, Unintentionally Disinviting, Unintentionally Inviting and Intentionally Inviting.

IE aims to create an entire school environment that intentionally invites everyone in the school to be successful (Egley, 2003). “Invitational Education is a theory of practice that aims to create and maintain a human school environment that intentionally and cordially invites individuals to realise their boundless potential in all areas of

worthwhile human endeavour" (Friedland, 1999:15). The purpose of IE is to create a more exciting and enriching experience for all role players in the education process (Purkey & Aspy, 2003) with the intent to grow human potential (Friedland, 1999). The IE learning theory developed into a model of practice after research into the factors and principles that contribute to human success or failure (Purkey & Novak, 2015). "It is a learner-centred approach to the teaching-learning process" (Smith & Hunter, 2007, p. 8).

IE acquires its foundations from The Democratic Ethos, The Perceptual Tradition and the Self-Concept Theory (Purkey, 1992). The Democratic Ethos is based on the belief that all individuals matter and can find growth in self-governance; this is established in IE in deliberate conversation, collaboration and respect (Purkey & Novak, 2015). The Perceptual Tradition considers behaviour as a response to the perception and understanding of surroundings and events (Purkey & Novak, 2015). The Self-Concept Theory, developed by Purkey (1991), states that behaviors are influenced by 'the view one has of oneself' (Purkey & Novak, 2015).

The Invitational Learning Theory outlines five domains in almost every environment that contribute to the success or failure of human endeavour. These domains are called "The five powerful P's" and consist of people, places, policies, programs and processes. The Powerful P's created an ecosystem in which the individual exists (Purkey, 1991). The table below gives an outline of each domain.

Table 1. Outline of Powerful P's

People	**Places**	**Policies**	**Programmes**	**Process**
Teachers and staff (both teaching and non-teaching)	Physical attributes of the classroom and school.	Written and unwritten rules regarding procedures. This includes policies on grading and discipline.	Curriculum and content for learners. This includes programmes of wellness and parent participation.	Examines how the other four P's are conducted.

Invitational Education is based on five basic assumptions or elements: trust, respect, optimism, intentionality and care. These five assumptions create purpose and directionality in theory (Purkey, 1991).

Trust

"Education is a cooperative, collaborative activity where the process is as important as product" (Purkey, 1991:2). A pivotal aspect of IE is understanding that human existence is a collaborative activity and all humans are interdependent (Purkey & Novak, 2015). To create inviting relationships, both time and effort to create a trustworthy pattern of interactions between teacher and learner.

Respect

"People are able, valuable and responsible and should be treated accordingly" (Purkey, 1991:2). Mutual respect by all role-players determines school success. Respect should be manifested in all aspects of places, policies, programmes and processes within the school.

Optimism

"People possess untapped potential in all areas of human endeavour" (Purkey, 1991: 2). It is not enough to be inviting; it is essential to be optimistic about the process. Human potential has no clear limits and should be considered boundless; in doing so, curricula can be devised, policies can be created, programmes can be supported, processes can be encouraged, physical environments can be established, and relationships maintained (Purkey, 1991).

Intentionality

Human potential can be optimally applied by places, policies and programmes tailored to address invitation as a prerequisite to development. Moreover, it can be used by those who focus on inviting both others and themselves, personally and professionally (Purkey, 1991:2). Intentionality gives experiences purpose and allows teachers to create

environments that have directionality and are goal driven. Intentionality is essential to consistently and dependably invite people to realise their human potential (Purkey, 1991).

Care

Caring involves warmth, empathy, and positive regard for others; it provides others with benevolence which filters through into one's personal life as well as the lives of one's fellow humans (Purkey & Novak, 2015: 2). The element of care is considered as one of the essential elements of Invitational Education.

Aim and Problem of Study

This paper aimed to explore the teacher-learner ratio and its effect on invitational teaching and learning. The focus was mainly on primary school teachers in the lower south coast of the Durban area. The DBE mandated that schools accommodate and give all learners access to schooling. As a result of this mandate, there has been an influx of learners from rural schools into urban and semi-urban areas. Class- sizes increased exponentially, thus creating a crisis in terms of providing quality education, supporting the individual needs of learners, lack of appropriate infrastructure and resources and classroom management. The teacher-learner ratio from 1:25 in primary schools increased to 1:40 and is still growing. In some schools, the teacher-learner ratio is 1:70; therefore, this study investigated teachers' views regarding the increased class size and its effect on invitational teaching and learning.

Method

Research Design

The research followed a quantitative approach (Maree, 2020) using a descriptive and a causal non-experimental survey research design. The rationale behind choosing this design was that it was the most appropriate and suitable; since the research aimed to describe the present situation as it exists (Creswell, 2014). This research used a descriptive and causal non-experimental design to determine the teacher-learner ratio and its effect on invitational teaching and learning.

Participants

To administer the questionnaire, the researcher agreed on 150 participants. These were teachers who were teaching in primary schools in the Durban South and Port Shepstone regions responded. Three (3) teachers were randomly selected from 50 schools in the Durban South and Port Shepstone regions to complete the questionnaire. The inclusion criteria were that the teacher had to teach a class with more than 40 learners, the class had to consist of learners from different racial and cultural backgrounds and the teacher had to have a minimum of five years of teaching experience. Among the participating teachers, 102 (68 %) were females and 48 (32%) were males. On average, the participants had more than five years of teaching experience.

Data Collection & Interview Form

The researcher collected the data using a questionnaire (Appendix A) with two sections: biographical data (Section 1) and statements pertaining to factors that affect invitational teaching and learning. The questions in section 2 consisted of a 3-point Likert scale regarding the factors that affect invitational teaching and learning (1- agree; 2 – disagree; 3 – uncertain). The questionnaire included 44 closed-type questions. The researcher, together with his supervisor, developed the questionnaire. The questionnaire included 44 closed questions using the Likert Scale, three levels participants had to choose from 'agree, disagree and uncertain.' The questionnaire was subdivided into two sections. Section one dealt with the biographical information of the respondents and consisted of questions 1 to 10. Section two focused on the factors concerning the learners, teachers and the school environment, composed of 44 closed questions. In this section, respondents were asked to indicate their perceptions of the teacher-learner ratio and invitational learning in three ways: agree, disagree and uncertain.

Pilot Study

To ensure the validity and reliability of the instrument, the researcher conducted a pilot study. A pilot study is an abbreviated version of a research project in which the researcher practices or tests the procedures to be used in the subsequent full-scale project. For this study, the researcher conducted a pilot run of ten teachers with children in primary

schools. The pilot study allowed the researcher to rephrase some of the questions to ensure clarity and avoid misinterpretation. The pilot also indicated to the researcher the time required to complete the questionnaire. Once all the factors were considered, the research supervisor finalized the questionnaire and approved it for distribution to each of the 50 schools.

Data Analysis

Once data was collected, it was captured in a format that would permit analysis and interpretation. This involved carefully coding the 150 questionnaires completed by the teachers at primary schools. The coded data were transferred onto a computer spreadsheet using the Quattro Pro 4.0 database statistics computer programme. The coded data was submitted to the Department of Statistics at a South African university and computer analysed using the SAS programme to interpret the results through descriptive statistics.

For this study, the researcher opted for descriptive. For the descriptive statistics, frequency tables were used to interpret the data.

Ethics

The University of Zululand granted ethics approval to conduct this study as part of doctoral research. For ethical purposes, the researcher reached out to each participant with a formal letter of invitation outlining the project and requesting their participation. To administer the questionnaire to teachers of schools in the Durban South and Port Shepstone area, the researcher contacted the relevant circuit inspectors by telephone and received verbal permission from them to conduct the proposed research. The *proviso* was, however, that permission should be obtained firstly from the school's principal before approaching the members of their teachers. Participants who agreed to participate in the study signed the consent form agreeing to participate. They were also informed of voluntary participation and were not obligated to complete the questionnaire. All participants were ensured anonymity and confidentiality of their participation in the study. They were told that during the reporting phase, pseudonyms would be used.

Procedure

Since this paper emanated from the author's Doctoral studies, collecting data was via postal services and telephonic conversation. Five interview forms were posted to each school in the Lower South Coast of Durban. The researcher communicated telephonically with each school principal, who agreed to hand the interview form to their teachers in the Foundation Phase. Once the form was completed, the school principal sent the documents via postal services to the researcher. Although the researcher sent five forms to each school, most schools in the lower south coast of Port Shepstone have only three grades in the Foundation Phase, grades 1, 2 and 3. Therefore the researcher received three forms from the 50 participating schools, thus totaling 150.

Results

Descriptive statistics

The purpose of the research was to gain insight into a situation, phenomenon, community or person. Descriptive analysis is one of the methods of analysis used to study a person or persons scientifically in an educational problem. It attempts to describe the situation as it is; thus, there is no intervention on the part of the researcher and, therefore, no control. Maree (2020) says descriptive studies do not set out to test hypotheses about relationships but want to find the variables' distribution. In this study, nomothetic descriptive research was employed to describe the teacher-learner ratio and its effect on invitational learning. The researcher was primarily concerned with the nature and degree of existing school situations.

Gender

Table 1. Frequency distribution according to the gender, age and teaching year completed by respondents

Gender			**Age**			**Teaching Years Completed**		
	Frequency	%	Years	Frequency	%	Range	Frequency	%
Male	48	32	20-30	32	21	1-15	116	78
Female	102	68	31-40	88	59	16-30	34	22
			41-50	40	20			
	150	100		150	100		150	100

Table 1, regarding the gender of the participants, it shows that 36% more females than males completed the questionnaire. The researcher believes that females see teaching as an occupation where they can be accessible in the afternoon to attend to their usual chores. Furthermore, according to Africa Check (2018), almost 68% of the teacher cadre in South Africa is made up of female teachers. A similar finding exists in Australia, where women are over-represented in the teaching profession; an average of 96 percent of females are teaching in either pre-primary or primary schools (Tani, 2019)

According to Thakur (2021), the salaries offered in the private sector are more lucrative than teaching; therefore, many males opt to find employment in the private sector rather than in the teaching profession. Teaching is no longer the most lucrative career in Asia, although Asians strongly emphasize education and hold teachers in high regard.

Regarding the age of the participants most respondents (80%) were 41 years or younger (Table 2). This may be attributed to the fact that older teachers (with several years of pension contribution service) have opted for the Voluntary Severance Package (VSP), which was recently offered to teachers by the various Departments of Education. According to Phitidis (2022), young people opt to get into education because funding to study for a teaching degree is more readily available. The DBE offers the Fundsa Lushaka Bursary in South Africa for potential teachers in critical subjects. Students who often get rejected or unplaced in their first choice at a university often choose teaching as a career path.

With reference to the number of teaching years completed by the participants More than 78% of the teachers completed between 1 – 15 years of service in teaching. This finding coincides with Table 1, where 68% of the respondents were females. According to the researcher, a possible reason for this finding is that most females are satisfied in their job situation and therefore do not often seek alternative employment. Dhal (2021) concurs that female teachers remain longer in their profession due to the security and benefits provided by the education sector.

Number of Learners in the Largest Class the Respondents Teach

Table 2. Frequency distribution according to the number of learners in the largest class in which the respondents teach

	Number of learners	**Frequency**	**%**
1	10 – 20	3	2,0
2	21 – 30	21	14,0
3	31 – 40	34	23,0
4	41 –50	71	47,0
5	51 – 60	9	6,0
6	61 – 70	7	5,0
7	71 – 80	3	2,0
8	More than 80	2	1,0
	Total	150	100

Most teachers who completed the questionnaire teach classes with more than 40 learners (Table 2). The ideal teacher-learner ratio is 25, according to Smart (2019), who believes that quality invitational teaching and learning is only possible when the teacher-learner ratio is manageable.

Table 3. Frequency distribution according to the respondent's perception of a favourable teacher-learner ratio

	Teacher-learner ratio	**Frequency**	**%**
1	10 – 15	3	2,0
2	16 – 20	16	11,0
3	21 – 25	74	49,0
4	26 – 30	32	21,0
5	31 – 35	20	13,0
6	36 – 40	5	4,0
	Total	150	100

Table 3 shows that most teachers (62%) prefer classes with 25 or fewer learners. Many indicated that with a small number of learners, quality invitational learning would be actualised, which would also avoid disciplinary problems in class. This finding concurs with Wright et al. (2018), who also agreed that the decreased number of learners in a class provides more significant opportunities for teachers to provide necessary educational support. According to Meador (2019), larger classes make it difficult, frustrating and cumbersome for teachers to maintain discipline and provide help.

Table 4. Item analysis in respect of class size

Question Number		**Agree**	**Disagree**	**Uncertain**	**Total**
2.1 Effective discipline in the class	f	126	24	0	150
	%	84	16	0	100
2.7 The teachers' understanding of individual learner's problems	f	121	27	2	150
	%	81	18	1	100
2.10 The creation of a warm atmosphere in class	f	56	66	28	150
	%	37	44	19	100
2.11 Individual assistance to learners	f	98	42	10	150
	%	65	28	7	100
3.7 The challenging nature of lessons	f	78	62	10	150
	%	52	41	7	100
4.2 The availability of teaching resources	f	100	46	4	150
	%	66,5	30,5	3	100
4.3 Adequate physical provision such as furniture, classroom space, etc.	f	116	33	1	150
	%	77	22	1	100
4.5 The recognition by management for the teachers' efforts	f	63	68	19	150
	%	42	45	13	100
4.8 The teachers' understanding of different cultural issues	f	107	35	8	150
	%	71	23	6	100
4.9 Understanding of learners' cultural backgrounds	f	115	28	7	150

For this paper, the following items were selected from the questionnaire for analysis since these items aligned directly with the *teacher-learner ratio and its effect on invitational teaching and learning*.

Effective discipline in the class

According to Ecole Admin (2021), discipline is essential in life. It is a character trait that is crucial for expressing many other attributes in life. It refers to orderliness in life, which is necessary for success in one's life. Additionally, it demonstrates respect for physical and moral laws in society.

In the table above, a very high percentage, 84%, agreed that an unfavourable teacher-learner ratio would affect discipline in class. Without proper discipline and authority, chaos may rule in class and thus affect invitational learning.

Through discipline, the learner realises the necessity for order in the world around him and that some behaviours are abhorred while others are praised.

The teachers' understanding of individual learner's problems

A high percentage of the respondents (81%) agreed that a large class would be affected by the teacher's understanding of individual learners' problems. Problems within the learning situation come to the fore in all classrooms, although they vary in importance, urgency and intensity. Within an educational context, teachers should be able to assist learners in identifying problems, their causes and possible consequences as quickly as possible (Koc et al., 2015). They should further help each learner employ or arrange counter measures for a problem (Johnson, 2014).

The creation of a warm atmosphere in class

Although less than half, most of the respondents (44%) still disagreed that a large number of learners would affect the teacher's self-concept. Loeng (2020) maintains that teachers already have a well-established self-concept that external actors cannot easily affect. Ismail and Tekke (2015) agree that the teacher's self-concept lies at the core of his personality, and a teacher with a positive self-concept can expose himself to criticism without feeling threatened.

Individual assistance to learners

A warm, inviting classroom is one of the prerequisites for invitational learning (Purkey & Novak, 2015). Most respondents (65%) indicated that being responsible for many learners makes it difficult to create a warm, inviting atmosphere in the class. Ballantine (1983: 165) says only with absolute dedication can a teacher create an atmosphere in which the learner feels essential, accepted and valued. The researcher believes that the class size often makes it impossible for the teacher to rearrange or reorganise the classroom.

The challenging nature of lessons

Only slightly more than fifty percent of the respondents (52%) agreed that large classes affect the challenging nature of lessons. A challenge can incite learners to better performance if the teacher explains until the chances of success are high (Johnson, 2014). To be challenging and thought-provoking, a lesson should not be a mere presentation by the teacher but should also consider learners' work habits. According to Wokoma (2020), the way learners tackle unexpected problems and their ability to work with others. Any challenge should be realistic and issued only when there is a reasonable chance of success.

The availability of teaching resources and Adequate physical provision such as furniture, classroom space, etc.

A relatively high percentage, 66,5% and 77% of the respondents, agreed that the availability of resources and inadequate physical provisions affect invitational teaching. An unfavourable teacher-learner ratio and a shortage of educational resources make it difficult for teachers to ensure effective learning. According to du Plessis and Mestry (2019), many schools need more furniture, stationery, textbooks, etc. Invaluable teaching and learning resources are necessary for the classroom for invitational learning. Successful invitational learning can only be realized fruitfully with adequate furniture and classroom spaces. Fifty percent of the respondents agreed that adequate physical provisions are necessary for successful invitational teaching and learning.

The teachers' understanding of different cultural issues and Understanding of learners' cultural backgrounds

Most respondents (71%) agreed that a teacher's understanding of different cultural issues is affected by large classes. In contrast (77%) conceded that understanding a learner's cultural background is affected by an unfavourable teacher-learner ratio. In teaching learners from culturally different backgrounds, a teacher must watch for signs of incongruity, which is only sometimes possible due to the large class size. Apart from understanding learners' diverse cultural backgrounds, large class sizes make it impossible for teachers to get to know all learners (Meador, 2019).

Discussion

Initially coined by Purkey and Novak, invitational teaching and learning (education) aimed to improve classroom practice. The classroom environment is the critical determiner for creating an invitational teaching and learning

environment (Venketsamy, Sing & Smart, 2020). Various factors influence and determine the quality of invitational teaching and learning. In this paper, the teacher-learner ratio (class size) was the determining factor in the effectiveness of promoting invitational education. Large class size has negatively impacted teacher and learners' attitudes toward schooling. Despite the Minister of Education indicating that there is a campaign to achieve a 1:30 teacher-learner ratio in public schools in South Africa, this is a far cry. According to West and Meier (2020), there are classes in South Africa's public schools with more than 50 learners to one teacher. The finding in this study revealed that the class size impacted how teachers manage discipline. It was found that most teachers spent their time trying to discipline the learners instead of teaching. Wright et al. (2017) agree that for effective teaching and learning to occur, there must be a decrease in the number of learners in a teacher's class. This view is supported by the Hun School of Princeton (2019), which believes that smaller classes yield better results and tremendous success among learners. The findings also revealed that teachers could not identify learners learning problems and psycho-socio-emotional challenges. They felt they had too many learners to contend with and needed help identifying challenges among them.

With the large class size, most participants complained about the lack of resources. Learners were forced to share textbooks and other necessary resources. Teachers could not move around the class and give individual attention due to the lack of space. Participants also indicated that there needed to be more furniture in each class. In some subjects, practical work was impossible since there was inadequate equipment to allow students to demonstrate their activities, especially in the science laboratory (Kohler, 2020)

Another factor that hindered invitational teaching and learning is the principles of mutual knowing, trust and authority. The findings revealed that the large class size made it nearly impossible for teachers to get to know their learners and vice-versa. As a result of not knowing the learners, learners found it difficult to develop a relationship of trust with the teacher. Due to the lack of mutual knowledge and confidence between learners and teachers, most participants indicated that they needed more authority in the classroom. 84% of participants said discipline was a significant factor limiting a mutual relationship of knowing (knowledge), trust and authority.

Although Invitational Theory focuses on the powerful 5Ps (people, places, policies, programmes and processes), South African schools' teacher-learner ratio makes this challenging. As much as a teacher try to engage with learners (people) in the classroom environment, the findings highlighted the difficulty experienced by teachers. Invitational education promotes a conducive learning environment (place). Most schools in South Africa are overcrowded; teachers need to arrange the furniture in a work-friendly environment. The DBE has developed several policies and procedures to ensure quality teaching and learning; however, this has become a mammoth task in most public schools. The learner's code of conduct is no longer respected or obeyed. Although teachers spend a lot of time planning for teaching and learning, often these lessons are disrupted by indiscipline; teachers have to quell fights and even try to discuss life skills with these learners.

Conclusion

This paper provided insight into the teacher-learner ratio and its effect on invitational teaching and learning in a South African public school context. Although Purkey and Novak highlight the importance of the powerful 5Ps (people, places, policy, programmes and process) to ensure an invitational learning environment, the teacher-learner ratio in most public schools needs to respond more effectively to the powerful 5Ps. The author argues that for the effective implementation of the powerful 5Ps, the teacher-learner ratio should be at most 1:25 learners. The large number of learners in a class affects the quality of teaching, learning, assessment and support to learners. As a result of the increased teacher-learner ratio, this study found that most teachers do not know their learners, nor do they know the learner's learning problems and socio-economic conditions.

Recommendations

Emanating from the findings of this study, the author recommends the following:

- There should be a reduction in the teacher-learner ratio, which should be the government's central goal. In a presentation to the National Assembly on 12 September 2022, Education Minister – Angie Motshekga stated

that the DBE has a strategic objective to reduce school class size. Since then, there has been a slight improvement in the teacher-learner ratio. However, in some rural provinces, the teacher-learner ratio is still above 1:30 due to the lack of funding

- The current post-provisioning norms implemented in the country do not specify the timeframes for achieving 1:30 learners in a class. Therefore, the post-provisioning norms policy should be revised and implemented accordingly.
- Since the teacher-learner ratio is large in schools, pre-and in-service teachers should be capacitated in managing large classes. Higher education institutions should include a module on classroom management in their teacher-education programmes. This will provide pre-service teachers with the knowledge and skills to manage large classes.
- To minimise poor discipline and behavioural problems, the learner's code of conduct should be accepted and signed by both learners and parents. This will ensure parents and learners become accountable and responsible for their behaviours.

Recommended for Further Research

The study sample focused on primary schools in the lower South Coast of Durban -KwaZulu Natal. The author recommends that further studies be carried out in other provinces and countries worldwide. The author believes South African teachers would benefit significantly from good practices from other countries regarding managing large classes.

Limitations of the Study

The study was limited to only one district in South Africa, KwaZulu-Natal. The participants in this study were only primary school teachers teaching mainly in rural and semi-rural schools. The author proposes that this study should also be done in ex-Model C schools in the province.

Acknowledgment

The author would like to express his sincere thanks to the University of Zululand, where this doctorate study was done. He would also extend his sincere appreciation to his supervisors, Prof M.S. Vos and Prof G. Urbani, both from the University of Zululand.

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Journal for the Education of Gifted Young Scientists, 11(1), 45-53, March 2023
e-ISSN: 2149- 360X
jegys.org
dergipark.org.tr/jegys

Young Wise Publishing
youngwisepub.com
gencbilgeyayincilik.com

Research Article

Descriptive analysis of dyscalculia articles published in Turkiye and a music-supported model proposal for dyscalculia education

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Article Info

Received: 27 December 2022
Accepted: 17 February 2023
Available online: 15 March 2023

Keywords
Dyscalculia
Learning disability
Music
Music supported learning
Music-assisted mathematics teaching
Teaching model proposal

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Abstract

Learning disabilities could create some important problems that affect the daily activites of individuals who experience this condition. These problems affect individuals as well as their families. Qualified training applied by scientific methods can minimize these negative effects. "Dyscalculia", which is the numerical dimension of specific learning difficulty, can prevent individuals from revealing their true potential. It is extremely important to know what dyscalculia is, to diagnose it correctly and to know the correct teaching methods by educators. In this study, it was aimed to examine the studies on dyscalculia and to reveal the orientation related to these studies and to make the literature more known. In addition, a model suggestion was made regarding the use of music in the education of dyscalculic individuals. The sample of this research consists of articles published in TR Dizin between 2011-2022. The keywords "dyscalculia, math difficulty, math learning difficulty" were searched in both Turkish and English in the TR Dizin. Sixteen articles reached by scanning were determined to be analyzed as samples. An article review form was created by the researchers with the themes determined by expert opinion. The data were prepared and analyzed with the help of the document review method and this form. In the study, it was concluded that dyscalculia is a subject that has not been studied sufficiently in Türkiye. It is thought that multidisciplinary studies may contribute to the field in future studies.

To cite this article:

Ceylan, A.D., & Ozal-Goncu, I. (2023). Descriptive analysis of dyscalculia articles published in Turkiye and a music-supported model proposal for dyscalculia education. *Journal for the Education of Gifted Young Scientists*, *11*(1), 45-53. DOI: http://dx.doi.org/10.17478/jegys.1225122

Introduction

Today, in order to keep up with the world in the best way in every sense, the education, which is the desired behavior development process in the individual, must be carried out in the most efficient way. This can be seen as the most important responsibility of educators and scientists. In order for countries and civilizations to exist and develop, they need production and technology, and for this, they need working and producing manpower (Ceylan, 2010). In order to meet this need, people need to have qualified training. Nowadays, while science is rising rapidly, the need for qualified educated people is increasing at the same rate. Specific learning disability is a developmental disorder that can be observed with differences in learning processes and various difficulties in perception. Individuals with specific learning disabilities (SLD) have a normal level of intelligence and have a disorder in one or more of the psychological processes that involve using and understanding speech and writing language. These may be disorders in listening, speaking, reading(dyslexia),

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writing(dysgraphia), spelling and arithmetic(dyscalculia) (Dadandi, 2015). According to studies, an average of 5% of primary school children in the world struggle with these difficulties.

Numerical skills are an integral part of both our work and school life. In researches conducted in the world, approximately 3% to 6% of children experience developmental dyscalculia (DD) (Kucian & von Aster, 2015). In short, this learning disability, called "Dyscalculia", becomes evident especially in primary school students (Desoete, Roeyers, & Declercq, 2004). When dyscalculic students are involved in the same teaching processes with their peers, their school success may be adversely affected. The reasons why these students fail in mathematics course vary. First of all, these students fail because they do not receive appropriate individual education. Considering the findings of scientists, the main causes of failure in mathematics include ineffective teaching, ignoring students' individual learning processes, visual-spatial problems, lack of attention, verbal language problems, problems with motor skills, cognitive problems and problems with memory (Koc, 2018). As a result, there may be differences in perception that may vary from person to person in dyscalculia. It is also thought that dyscalculia can be seen at different levels.

Medical diagnosis of dyscalculia in Türkiye is carried out by specialist doctors in the field of pediatric mental health and diseases in full-fledged public hospitals or in education and research hospitals affiliated to universities. With the "Specific Learning Difficulty (SLD)" report obtained from these institutions, an educational evaluation is made for the students who go to the Ministry of National Education Guidance Research Centers (RAM). As a result of this evaluation, students who have created an individualized education program suitable for them are placed in appropriate educational environments (Uygun, 2020). Educational interventions are applied in special education institutions in areas determined as the needs of these students.

Instructional Intervention

This concept is mostly encountered in relation to students who need special education. Teachers can change the teaching method or use different materials as a result of their evaluations. Whether instructional intervention works or not can be observed in the evaluation after the intervention (Bayrak & Yurdugul, 2016). Based on this evaluation, teachers can choose the most efficient among the different methods they try. Thus, they can try to make the learning process more qualified for their students.

Dyscalculic students may fall behind their classmates in terms of academic achievement in mathematics classes. These students can be interpreted as lazy or indifferent to the course by teachers whose awareness or professional knowledge about dyscalculia is not sufficient (Hacısalihoglu Karadeniz, 2013; Kuruyer, Cakiroglu, & Ozsoy, 2019; Altindag Kumas & Ergul, 2017; Nurkan & Yazici, 2020). As a result, it is thought that these teachers may be inadequate in the process of dyscalculia diagnosis.

Articles on dyscalculia published in Turkiye (TR Index) were scanned with the keywords "dyscalculia", "math difficulty" and "math learning difficulty". As a result of the screening, 16 articles were identified in the relevant literature. These articles tended to reveal the awareness and professional knowledge levels of individuals about dyscalculia mostly in terms of their subjects (Kuruyer, Cakiroglu, & Ozsoy, 2019; Altindag Kumas & Ergul, 2017; Nurkan & Yazici, 2020; Hacısalihoglu Karadeniz, 2013; Baldemir, Ic, & Tutak, 2022; Sezer & Akin, 2011). In these studies conducted with qualitative research methods, data were collected with questionnaires and structured interview forms.

Among the studies involving instructional intervention on mathematics subjects in dyscalculic students, only one (Sonmez, 2021) has a quasi-experimental research that includes music, rhythm and instrument elements. Considering that music is an important material in education, it can be said that only one study is insufficient.

Children sleep, play, dance, sing, play instruments, beat the rhythm, have fun, learn with music (Ozal Goncu, 2016). Playing can be considered as a very important element in children's lives. Children learn about life and communication through play. It can be thought that music has the same importance for education life. The most important material in primary music education, where the first formal music education began, is children's songs (Sonsel, 2018). The fact that educators benefit from this efficient and effective material in all processes of education can provide a much more qualified learning for students.

In the historical process, human beings have sometimes used music for motivation (Demirel, 2022) and sometimes as a treatment tool (Ucaner & Jelen, 2015). Considering these therapeutic and motivating aspects of music, it is thought that it will be beneficial to use it in the field of specific learning disabilities. For this reason, it is predicted that music, which was accepted as a branch of mathematics in the past (Isitan, 2013), may be effective in the education of dyscalculic individuals. This is supported by current medical research. It has been observed that music therapy is useful in the education of individuals with specific learning difficulties (Mina et al., 2021). In addition, it is thought that music and mental calculations such as addition/subtraction in the brain trigger similar brain pathways in both the prefrontal cortex and the parietal lobe (Ribeiro and Santos, 2020, cited by Schmithorst and Holland). Increasing research on this subject may provide more different materials to field experts and may contribute to more qualified dyscalculia education.

Purpose of the Study

In this study, it was aimed to conduct a systematic analysis of the studies on dyscalculia in Türkiye and to propose a music-supported model in the education of dyscalculic students.

Method

Research Model

This research was carried out with the document analysis technique, one of the qualitative research methods. Document analysis is a systematic method used to examine and evaluate all documents, including printed and electronic materials. With this method, literature containing a lot of research can be summarized and interpreted statistically. Researchers generally review previous research, the literature, and incorporate this information into their research (Kiral, 2020, p. 175). The data resulting from these research can reveal the orientation of the research conducted in the literature and the parts of the problem area that have not been researched before. Thus, researchers can contribute to the field by investigating the unilluminated aspects of the subject.

Documents

The universe of this study is the studies on dyscalculia published in Türkiye. The sample consists of articles on dyscalculia published in the TR Dizin between 2011-2022. The keywords "dyscalculia, math difficulty, math learning difficulty" were searched both in Turkish and English inside TR Dizin. As a result, 16 articles, which are samples, were reached.

Data Collection and Analysis Process

Sixteen articles in the sample were examined within the framework of the main themes for content analysis. These themes were determined as "sample type, research method, sample number and sample age group" by taking expert opinion. With these themes, a tabular article review form was created. This table was used to classify the data of the research. In this way, the data are summarized and digitized.

These 16 articles published on dyscalculia were examined in detail and the article review form was filled with the main themes determined. Then, the data in the form were evaluated and interpreted by the researchers. At this stage, this analysis was summarized by creating statistical tables related to the main themes identified.

Results

In this section, a systematic analysis of the studies on dyscalculia in Türkiye and a model proposal for music-assisted dyscalculia education will be presented.

Articles Published on Dyscalculia in Türkiye

In this section, descriptive analysis of 16 articles found as a result of the searches made with the keywords determined was performed. The selected articles were examined in terms of sample type, research method, number of samples and sample age group and the results were tabulated. The sample types of the scanned articles are shown in Table 1.

Table 1. Distribution table of articles by sample type

	f	%
Student	7	43,75
Teacher or Prospective Teacher	6	37,5
Document	3	18,75
Total	16	100

According to Table 1, seven of the sixteen studies examined (Eng et al., 2014; Mutlu & Akgun, 2017; Sonmez, 2021; Ozturk, Durmaz, & Can, 2019; Koc & Korkmaz, 2019; Acar & Higde, 2018; Al-Zoubi & Al-Adawi, 2019) consist of experimental and qualitative research studies for students. Six studies were conducted with undergraduate students who are prospective teachers and teachers with various professional experiences (Kuruyer, Cakiroglu, & Özsoy, 2019; Altındağ Kumaş & Ergül, 2017; Nurkan & Yazıcı, 2020; Hacısalihoğlu Karadeniz, 2013; Baldemir, İç, & Tutak, 2022; Sezer & Akın, 2011). The other 3 studies (Terzioğlu, Curaoğlu, & Yıkmış, 2019; Saygılı, 2017; Filiz, 2021) include document review and descriptive analysis of studies on the literature.

Table 2. Distribution of articles by research method

	f	%
Qualitative	12	75
Experimental	4	25
Total	16	100

According to Table 2, twelve of the sixteen articles (75%) reviewed were conducted using qualitative research techniques (Kuruyer, Cakiroglu, & Ozsoy, 2019; Altındag Kumas & Ergul, 2017; Eng et al., 2014; Terzioglu, Curaoğlu, & Yikmis, 2019; Nurkan & Yazici, 2020; Saygili, 2017; Hacısalihoğlu Karadeniz, 2013; Baldemir, Ic, & Tutak, 2022; Koc & Korkmaz, 2019; Acar & Higde, 2018; Filiz, 2021; Sezer & Akin, 2011), 4 articles (25%) were conducted using experimental methods (Mutlu & Akgun, 2017; Sonmez, 2021; Ozturk, Durmaz, & Can, 2019; Al-Zoubi & Al-Adawi, 2019).

In a study conducted abroad among experimental studies (Al-Zoubi & Al-Adawi, 2019), the results of multiple intelligence theory-based studies on the experimental group were evaluated using the experimental method with pre-test-post-test control group.

Table 3. Distribution table according to the method of qualitative research

	f	%
Survey/Interview Form	6	37,5
Action/Situation Survey	2	12,5
Document Analysis	3	18,75
Achievement Test	1	6,25
Total	12	100

According to Table 3, in six of the twelve studies conducted with qualitative research method (Kuruyer, Çakıroğlu, & Özsoy, 2019; Altındağ Kumaş & Ergül, 2017; Nurkan & Yazıcı, 2020; Hacısalihoğlu Karadeniz, 2013; Baldemir, İç, & Tutak, 2022; Sezer & Akın, 2011), data were collected with structured interview technique or a questionnaire was applied. Two of the studies followed the action/situation research (Acar & amp; Hiğde, 2018; Koç & Korkmaz, 2019) method. In 1 of the studies, a new diagnostic model was proposed by examining the methods used for the diagnosis of dyscalculia. Three document analysis studies including descriptive analyses of previous researches on the subject and comparing various methods were conducted.

Table 4. Distribution table of the articles according to the number of samples

Number of Samples		f	%
Not Specified		1	6,25
Between 1-3		3	18,75
Between 4-10		3	18,75
Between 11-20		4	25
Between 21-30		1	6,25
31 and above		4	25
	Total	16	100

According to Table 4, study was conducted with 1 to 3 samples in three articles (Nurkan & Yazici, 2020; Koc & Korkmaz, 2019; Acar & Higde, 2018). In three other articles (Hacısalihoglu Karadeniz, 2013; Mutlu & Akgun, 2017; Sezer & Akin, 2011), 4 to 10 samples were included in the study. There are 11 to 20 samples in 4 articles (Terzioglu, Curaoglu, & Yikmis, 2019; Sonmez, 2021; Ozturk, Durmaz, & Can, 2019; Al-Zoubi & Al-Adawi, 2019) and 21 to 30 samples in 1 article (Filiz, 2021). 31 and more samples were seen in 4 articles (Kuruyer, Cakiroglu, & Ozsoy, 2019; Altindag Kumas & Ergul, 2017; Eng et al., 2014; Baldemir, Ic, & Tutak, 2022).

The sample numbers of the scanned articles varied. In a study involving document analysis (Saygili, 2017), the number of samples was not specified.

Table 5. Distribution table of the articles by sample age group

Age group		f	%
Primary School Student (6-11 years)		7	43,75
Undergraduate Student (18-22)		2	12,5
Teacher (25 and above)		4	25
	Total	13	81,25
Document Analysis		3	18,75
	Total	16	100

According to the data obtained as a result of the articles examined, the following results were obtained:

As a result of the examination of the sources in the study, it has been seen that the researches on dyscalculia have emerged in our country since 2011. The small number of researches in general shows that the subject has become known in our country recently. On the other hand, the fact that 7 of the 16 studies (Eng, 2014; Mutlu, 2017; Sonmez, 2021; Ozturk, 2019; Koc & Korkmaz, 2019; Acar, 2018; Al-Zoubi, 2019) focus on research on students can be interpreted as a correct perspective. These researches contributed to the field by enabling the emergence of new teaching methods related to the education of dyscalculic individuals. In the studies conducted with teachers and undergraduate students who are prospective teachers, the knowledge levels and awareness of the participants of the research were generally examined. The conclusions drawn from these articles show that the specific learning disability especially dyscalculia is not sufficiently on the agenda in Türkiye and the awareness on this issue is not at a sufficient level.

Considering the sample type, 3 studies (Terzioglu, 2019; Saygili, 2017; Filiz, 2021) are document analysis studies and have compiled previous studies. These studies may have aimed to present different perspectives on the literature and the problem area. Studies conducted as document analysis include different indexes outside of Turkiye. It is understood from the large number and variety of researches scanned in foreign research indexes that more researches have been conducted abroad on the subject.

It was observed that experimental studies were conducted in 4 of the 16 articles examined. These studies were usually conducted on a student or small samples. These articles focused on observing the effects of instructional interventions. The fact that only 25% of the studies examined were conducted with experimental methods, which reveals that there are various difficulties in conducting experimental studies on the subject.

In the studies examined, the studies whose universe is primary school students were conducted with fewer samples. The studies consisting of undergraduate students in the research universe were represented by more samples. This may be due to the fact that dyscalculic students can show very different characteristics from each other. Dyscalculia may be

accompanied by attention deficit and hyperactivity disorder in some cases and dyslexia in others. Therefore, while working with these students, individual characteristics may affect the teaching process. Nevertheless, it is thought that the fact that the studies on dyscalculia focus on primary school students with more samples may contribute to the field.

Four studies conducted with teachers from different levels and different professional experiences were examined. However, in 3 of these studies, it is thought that the sample is not representative of the universe of the research. It should be taken into consideration that the higher number of samples in similar studies will better represent the universe of the research.

In the examinations, it is seen that there are a small number of experimental studies with a small number of samples. It is seen that these are mostly studies involving instructional interventions and conducted with young age group students. This can be explained by the fact that experimental studies can be more challenging for researchers in terms of time and resources; therefore, empirical studies conducted with small study groups are preferred. It was observed that questionnaires and structured interview techniques were used in studies with more samples.

In the articles containing document review, it has been observed that many domestic and foreign research indexes have been examined. In these examinations, it was found that there were hundreds of articles about dyscalculia, especially in foreign research directories. Various criteria were selected by the researchers from among these articles. As a result, it was observed that these studies, which are the compilations of the literature, contain 12-24 samples. It is thought that a more specific point of view was used in the selection of the studies since the examination criteria considerably reduced the number of reviewed studies. In addition, it has been observed that very few academic articles have been published about dyscalculia in Türkiye compared to other countries.

Studies involving instructional intervention research were mostly conducted with primary school students. This shows that the diagnosis process of dyscalculia mostly begins at the primary school level. After the diagnosis, the start of educational interventions in a short time may make it easier for students to keep up with the same level of education as their peers.

Suggestion for a Music Supported Model for the Education of Dyscalculic Individuals

Music, which is considered as one of the sub-branches of mathematics in ancient civilizations (Atli, 2007), can be accepted as both a useful educational tool and an effective teaching method today. It is thought that this teaching method will be very effective in specific learning difficulties. When music is used as a teaching method, it can lead to an efficient learning process, especially in dyscalculic individuals.

Rhythmic counting can be considered a basic skill for elementary school students. It can be said that many numerical skills develop on this basis. It is known that dyscalculic students have problems with rhythmic counting (MoNE, 2014). These students are tried to gain rhythmic counting skills in special education institutions with various methods. It can be accepted that rhythm, which is the most important element of music, is related to mathematics teaching due to its numerical structure. Therefore, it is thought that rhythmic counting education to be given to dyscalculic students can provide more efficient and qualified learning through rhythm and music education.

Implementation of the Model

Students diagnosed with specific learning disabilities in Türkiye receive education in special education centers. The addition of basic music education to the trainings in these institutions can be especially beneficial for dyscalculic students. This basic music education can be designed mainly with rhythm education content. Students may be taught simple musical motifs and asked to perform these motifs. Various musical sentences using these motifs can be created and taught to play them. Then, the student is expected to form and perform some or all of these sentences. As a result, students can learn to perform rhythmic phrase at a certain beat, adhering to measures.

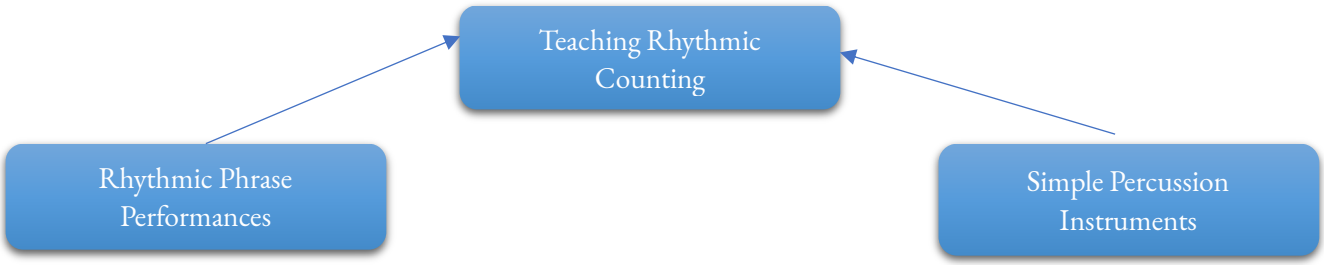

Figure 1. Dyscalculia training model with music support

These rhythmic phrase exercises can be performed with simple percussion instruments using large muscle groups. Rhythm bars, drumsticks and sound pipes can be examples of these. Songs containing the lyrics of these musical rhythm motifs and rhythmic counting numbers can be composed. These songs can be supplemented with accompaniment instruments or audio recording. This can make it easier for the student to learn songs better and remember them later. Songs can be designed melodically or without melody, only in the form of rhythmic poetic (rap) songs. These audio recordings can be sent to the family so that the student can repeat these songs at home. By memorizing these songs, it can be ensured that the student repeats the rhythmic counts everywhere. As a result, rhythmic counting teaching is included in the student's life. The teaching method can be rearranged with the feedback received from the evaluations to be made. Specific learning difficulties can be seen at very different levels and in different ways in individuals. Therefore, updates can be made on this model to develop new methods according to individuals.

Conclusion and Recommendations

As a result of the research, studies on dyscalculia in Türkiye are not sufficient. In addition, the number of qualitative and practical studies on dyscalculia is insufficient. It is very important to increase it. It is also necessary to determine and support the ability areas of students with dyscalculia in terms of their education. It is thought that music-supported dyscalculia education, which we present as a model proposal, can focus on the development of basic mathematics skills as well as enable students to enjoy learning processes. It may be suggested to investigate the effect of this model with experimental studies.

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Journal for the Education of Gifted
Young Scientists, 11(1), 55-74, March 2023
e-ISSN: 2149- 360X
jegys.org
dergipark.org.tr/jegys

Young Wise Publishing
youngwisepub.com
gencbilgeyayincilik.com

Research Article

A qualitative research on investigation the effectiveness of cognitive behavior therapy on depression of children[1]

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Article Info

Received: 23 December 2022
Accepted: 22 February 2023
Available online: 15 March 2023

Keywords
Cognitive Behavioural Therapy
Depression
Individual therapy
Qualitative study

Abstract

This study aims to investigate the effects of cognitive behavioural therapy on depression levels in children. For this purpose, five children, who scored above the cut-off score in the Child Depression Inventory and displayed depressive symptoms, were selected among the fifth-grade students studying in a secondary school. Individual therapy based on cognitive behavioural therapy was applied to these five children once a week for a total of 10 weeks, each session lasting an average of 50 minutes. In the last ten minutes of each session, the parents also joined the session. While interviews aiming to reduce depression levels based on cognitive behavioural therapy were being conducted with the children, interviews were also conducted with the parents in order to inform them about the process, to support the child outside the sessions and to follow up the process. In the study, the content of the interviews conducted with the children and the answers given to the semi-structured interview questions prepared by the researcher after the application and received from the parents were used as data. The content of the interviews and the answers given to the semi-structured interview questions were subjected to content analysis. At the end of the study, when the content of the sessions at the beginning of the therapy process was analysed, it was found that depression, low self-perception, and negative cognitive and emotional processes were expressed intensely during the first sessions. When the content of the sessions in the subsequent stages of the therapy was analysed, it was observed that there were positive changes in the cognitive, emotional and behavioural dimensions; in other words, individual therapy had positive effects on the children. When the answers given by the parents to the semi-structured interview questions were analysed, it was concluded that individual therapy created positive changes in the change of negative thoughts, self-expression, problem-solving skills and anger control in children. In the study, it was observed that the content of the interviews with the children and the answers given by the parents to the semi-structured interview questions were consistent with each other.

To cite this article:

Katmer, A.N., & Hamamci, Z. (2023). A qualitative research on investigation the effectiveness of cognitive behavior therapy on depression of children. *Journal for the Education of Gifted Young Scientists*, *11*(1), 55-74. DOI: http://dx.doi.org/10.17478/jegys.1240948

Introduction

With COVID-19, which emerged in 2019 and has been seen in our country since 2020, lockdowns started all over the world, and people could not even meet with their closest ones during this pandemic (Kul, Demir, & Katmer, 2020). An infected individual was completely isolated and had to withdraw from sources of social support. In particular,

[1] This article is derived from Ayşe Nur Katmer's PhD dissertation entitled "A Qualıtatıve Research On Investigation the Effectiveness of Cognitive Behavior Therapy on Depression of Children", prepared under the supervision of Prof. Dr. Zeynep Hamamci

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compulsory changes made in children's daily routines increased their depression and anxiety levels (Akoglu & Karaaslan, 2020). Depression is one of the most widespread mental disorders (Guler, Demirci, Karakus, Kisioğlu, & Zengin, 2014). Symptoms of depression include unhappiness, melancholy, unwillingness to engage in activities, problems with self-confidence, a negative view of the future and the world, constant fatigue, appetite and sleep disorders (Ozturk, 2001; Rawson, Bloomer, & Kendall, 1994). Beck (1976) stated in his model that the reason for depression is a disorder in cognitive processes. Before the 1970s, it was thought that only adults showed depressive symptoms, but after the 1970s, it was discovered that depression affected not only adults but also children and adolescents, and studies in this direction began to be conducted (Weller, Weller and Svadjian 1996). Childhood depression is increasing day by day in our country and in the entire world (Erol, Zabci, & Simsek, 2020). Especially nowadays, when we consider the changes in the social fabric as a result of the pandemic, it can be observed that children have begun to live an isolated life. It is known that the prevalence of childhood depression is increasing with the isolated life brought into our lives by the pandemic. In a study conducted by Mahon and Yarcheski (1992), a high level of negative correlation was observed between child and adolescent depression and social support resources. However, exposure to stressful life events is one of the most studied risk factors for depressive disorders and symptoms. Considering both clinical and community samples, it is known that children with depressive symptoms have experienced significantly more stressful life events than children without depression (Costello, Costello, Edelbrock, Burns, Dulcan, & Brent, 1988; Franko, Striegel-Moore, Bean, Tamer, Kraemer, Dohm, 2005). Although major life events such as pandemics, parental death, serious diseases, and sexual and physical abuse are linked to childhood depression (Kendler, Kuhn, & Prescott, 2004; O'Sullivan, 2004; Roy, 1985; Williamson, Birmaher, Dahl, & Ryan, 2005); less traumatic events, such as changes in family, peer, and romantic relationships and the transition from primary school to secondary school, also increase depressive symptoms (Isakon & Jarvis, 1999; O'Sullivan, 2004; Phillips, Hammen, Brennan, Najma, & Bor, 2005).

It is known that individuals diagnosed with childhood depression have a high risk of experiencing depression when they are adults (Hankin, Abramson, Moffitt, Silva, & McGee, 1998; Kim-Cohen, Caspi, & Taylor, 2003). The treatment of childhood depression has a preventive effect on the mental disorders that the individual will suffer from during his/her adulthood. Beck et al. (1976) stated that cognitive faults that cause depression can be treated by learning how to think in a healthy and realistic way. In the literature, it is seen that cognitive behavioural therapy provides effective results in reducing depression levels in children (Crowe & McKay, 2017; Hetrick, Cox, Witt, Bir, & Merry, 2016).

In addition to the risk of recurrence of depression, children and adolescents with depression are more likely to face a range of negative outcomes throughout their lives. While not specific to depression, the most common forms of depression in childhood and adolescence are poor school performance, poor relationships with family and friends, and impaired cognitive functioning (Reinherz, Giaconia, Silverman, Friedman, Pakiz, & Frost, 1995; Kessler & Walters, 1998). Depression during adolescence is also associated with negative outcomes during adulthood, such as increased stressful life events, loss of social support, low satisfaction with life roles, low-income levels, low educational prospects, marriage at younger ages, early parenthood, and low marital satisfaction (Franko et al., 2005; Gotlib, Lewinsohn, & Seeley, 1998). The negative outcomes of depression are more severe among young people with recurrent depressive disorders than among those with depressive symptoms alone. Depression is also a risk factor for drug use and smoking (Costello et al., 2003; Franko et al., 2005; Schepis & Rao, 2005; Conway, Compton, Stinson, & Grant, 2006).

Late childhood and early adolescence is the period when cognitive abstract thinking begins and irrational beliefs begin to emerge more frequently. A child, who defines himself/herself as depressed and unsuccessful during his/her childhood, continues to have this way of thinking for the rest of his/her life. When we consider that cognitive development, the formation of schemas and personality development accelerate during childhood and adolescence, the importance of this period can be better understood (Civitci, 2006). Therefore, an intervention aimed at reducing depressive feelings during childhood will positively affect children's mental health in later years by reducing their negative thoughts.

Cognitive behavioural therapy is widely used in the field of mental health. It is found that especially cognitive behavioural therapy is effective in many different problem areas (Eraslan, 2020; Eraslan & Gursoy, 2020; Thielemann,

Kasparik, König, Unterhitzenberger, Rosner, 2022; Turk & Katmer, 2019). However, when we take a look at the field of application, cognitive behavioural therapy with children is only beginning to be studied abroad and in our country. In addition, while group studies are more frequently encountered in both adults and children, there are very few studies in the literature on the effectiveness of individual therapy studies (Abdullah, Yildirim, & Citil, 2016; Avsar, 2019). When individual therapy studies for children based on cognitive behavioural therapy are examined, it is observed that the effectiveness of the studies is generally examined through quantitative data, and there is no qualitative study that reveals the effectiveness of the therapy by analyzing the content of the sessions. Therefore, in this study, the effect of individually applied cognitive behavioural therapy on children's depression levels is examined using the content analysis method.

It is thought that conducting individual therapy based on cognitive behavioural therapy, especially during the childhood period, is important in terms of its effects on the individual's later years and his/her relationship with his/her social environment. For this reason, it is believed that the existing study points to a gap in the field of mental health, education and its use in schools and will be functional in this sense.

Purpose of the Study

In this study, answers to the following questions related to two main problems were sought.

Main Problem No 1 How did the individual therapy contents of the children participating in the study change in terms of depressive symptoms, self-perceptions and thoughts during the therapy process?

The sub-problems of this study are as follows.

Sub-Problem No 1 How did the depressive symptoms of the children participating in the study change during the therapy process?

Sub-Problem No 2 How did the self-perceptions of the children participating in the study change during the therapy process?

Sub-Problem No 3 How did the thoughts of the children participating in the study change during the therapy process?

Sub-Problem No 4 How did the emotions of the children participating in the study change during the therapy process?

Sub-Problem No 5 How were the changes of the children participating in the study shaped during the implementation process?

Main Problem No 2 What are the opinions of the parents participating in the study about the effectiveness of cognitive behavioural therapy on their children?

Method

The Research Model

Under the roof of this study, 10 sessions of individual therapy based on a cognitive-behavioural approach were conducted with children with high levels of depressive symptoms. The effectiveness of the individual therapy is assessed based on the content of the interviews with the children and the opinions of the parents.

In the present study, the qualitative dimension of the study is based on a phenomenological approach. The phenomenological approach focuses on taking individual experiences from individuals, who directly experience them. The phenomenological analysis aims to obtain a phenomenon experienced by the participant in a direct way and to extract the psychological essence of this experience. In other words, the phenomenological study starts by developing a perspective regarding what an experience fundamentally is for the individual.

The key concepts guiding this form of study are: phenomenon, reality, subjectivity, truth and experience. The main aim of phenomenology is to provide a direct, broader and deeper understanding of the most fundamental concept, that is, experience. For this purpose, in the present study, the content of the interviews conducted with the individuals participating in the study and the semi-structured interview questions answered by the parents were used. Moreover, the video recording contents of the interviews were analyzed and the body language of the individuals during the process was also used during the evaluation (Akturan & Bas, 2008; Byrne, 2001; Miles & Huberman, 1994; Williams, 2021).

Study Group

The study group of this research consists of five children with depression and their parents. In the study, content analysis was conducted on the transcripts of 50 sessions with five children and five transcripts of responses of five parents to semi-structured questions.

The application based on cognitive therapy was conducted with fifth-grade children attending a Secondary School in Kili, 15 Temmuz Şehitleri Secondary School (July 15 Martyrs' Secondary School). As the inclusion criteria, the Childhood Depression Scale and Anxiety and Depression Scale in Children-Children Form were used. The Parents of the children, who met the inclusion criteria and agreed to participate in the study, were administered the Anxiety and Depression Scale in Children-Parent Form. The study group is presented in Table 1.

Table 1. Details of the participant

Participant	Age	Gender	Child-Codes	Parent - Codes
P1-10-F	10	Female	P1-10-F	P1
P2-10-M	10	Male	P2-10-M	P2
P3-10-F	10	Female	P3-10-F	P3
P4-10-M	10	Male	P4-10-M	P4
P5-10-M	10	Male	P5-10-M	P5

When Table 1 is examined, it can be seen that there were a total of five children, two girls and three boys, aged 10 in the study group.

Process

In the current study, a total of ten individual interviews based on cognitive behavioural therapy were conducted with the children involved in the study group. Preliminary Interviews with the study group were completed between 28.02.2022 and 11.03.2022; while individual sessions were completed between 14.03.2022 and 20.05.2022. Interviews were conducted as independent and individual sessions for each participant. The interviews were videotaped upon obtaining the consent of the parents and children. At the end of the interviews, the contents of the video recordings were transcribed. During the study and reporting stages, children were coded as P1-10-F, P2-10-M, P3-10-F, P4-10-M and P5-10-M. The transcripts were subjected to content analysis. Before the content analysis, the coding system was determined. While determining the coding system, the theoretical foundations of depression, self-perception and cognitive processes were analyzed. The sub-dimensions of these variables were determined as themes and sub-themes. All studies were subjected to expert evaluation in the ~~field~~. After the themes and sub-themes were determined, the session transcripts of the children were assigned to the themes and sub-themes without interfering with the statements. In its final form, the themes and sub-themes were re-evaluated, the literature was examined, the theoretical foundations were taken into consideration, and it was renamed and finalized with the evaluations carried out by three experts in the field.

In addition, in the last ten minutes of each session, interviews were conducted with the parents to inform them about the process and for follow-up purposes. At the end of the application, data were collected from the parents through interviews using semi-structured interview forms within the scope of qualitative research. The interviews were recorded via a voice recorder upon the consent of the parents. The statements transcribed by the researcher in a computer environment were subjected to content analysis. During the reporting stage, parents were coded as P1, P2, P3, P4 and P5.

Collection of Data

In the present study, in the selection of the study group, the Childhood Depression Inventory and the Anxiety and Depression Scale in Children were utilized. The interview contents of the individual therapy practice with the children were used as the data set of the study. Also, at the end of the application, parents were interviewed and their responses to the semi-structured interview questions were analyzed.

Childhood Depression Scale

The Childhood Depression Scale was developed by Kovacs in 1981 in order to measure the level of depression experienced during childhood. The adaptation of the scale into the Turkish language was conducted by Oy in 1991. The

scale consists of 27 items. While filling in the scale, the child chooses the appropriate one among three situations by evaluating his/her life in the last two weeks. Each sentence in each item is scored as 0-1-2. A low score on the scale indicates a high level of depression, while a high score indicates a low level of depression. The lowest score that can be scored on the scale is 0 and the highest score is 54. Higher scores on the scale indicate more severe depression. The pathological limit for the scale is 19. The reliability internal consistency coefficient of the Turkish version of the scale was .86 and the test-retest reliability was calculated as .72 with a four-week interval.

Anxiety and Depression Scale in Children

The Revised Child Anxiety and Depression Scale is a child and parent-rated clinical symptom screening scale created on the basis of DSM-IV for depression and anxiety disorders in children and adolescents. The scale was studied by Gormez et al. in 2017. The scale consists of 47 items and 6 sub-dimensions in total. The scale, which is answered in a four-point Likert scale, is scored between 0-3 (never-always). The dimensions of the scale are Separation Anxiety, Social Phobia, Obsessive Compulsive Disorder, Panic Disorder, Generalized Anxiety Disorder and Major Depressive Disorder. Within the scope of the current study, items 2, 6, 11, 15, 19, 21, 25, 29, 40 and 47 in the depression sub-dimension of the scale were administered to the parents of the children in the study group.

Parent Interview Form Regarding Individual Therapy Practice Based on Cognitive Behavioral Therapy

In this study, semi-structured interview questions were prepared in order to seek the evaluations of the parents of the children, who received individual therapy based on cognitive behavioural therapy, regarding the implementation process. The questions were prepared by the researcher after examining the relevant literature. The prepared questions were evaluated and corrected by three experts in the field of cognitive behavioural therapy and child psychology. The final version of the interview form consisting of six items was administered to the parents of the five children, who participated in the application, at the designated place, date and time. The form includes questions regarding the general evaluation of the individual therapy process received by the children, the content of the application that the parents found most useful, the change in the depressive symptoms of the children and the effect of their feelings, thoughts and behaviours on their daily lives, and whether these parents would recommend this application to other parents. With the help of these questions, the researcher aims to reach parental observations about the changes in children and the impact of the application. The interviews, which lasted an average of ten minutes, were recorded via a voice recorder upon the consent of the parents. The interviews that were transcribed by the researcher in a computer environment were made ready for being analyzed.

Validity and Reliability

The things that need to be done in order to increase validity and reliability in qualitative studies are expressed by Yildirim and Simsek (2016) as internal validity, external validity, internal reliability and external reliability. In order to ensure the internal validity of this study, the research questions, themes and sub-themes were prepared by reviewing the literature and finalized in line with the opinions of three experts in the field. The research process was planned in order to ensure external validity and the formation of the study group, the data collection process, data collection tool, information on validity and reliability, and the analysis process were explained in detail. Interviews were video/audio recorded to ensure internal reliability. The contents of the interviews were transcribed in order to prevent data loss. The expressions were assigned to themes and sub-themes and this process was repeated three times at one-month intervals. On the other hand, the statements of children and parents are presented in the findings section of the study without any interpretation. The results of the study were presented for external reliability and by checking the consistencies between the study results in themselves and between the literature and the present study.

Analysis of the Data

At the end of the study, the content of the interviews with the children in the study group was transcribed and the transcripts were subjected to content analysis based on the determined sub-themes. In addition, parents were interviewed within the scope of qualitative research by using semi-structured interview forms and data were collected and analyzed. The extracted transcripts were subjected to analysis. Analyses of children and parents are recorded in two

separate files. Statements are assigned to sub-themes. In the last stage, the findings are described, and conclusions and discussion are presented.

Findings

The content of the interviews conducted with the students within the scope of the application for the study and the responses received from the parents to the semi-structured interview questions after the application were subjected to content analysis. The findings of the analysis of the content obtained from the students and parents are reported and presented.

Main Problem 1. How did the individual therapy contents of the children participating in the study change in terms of depressive symptoms, self-perceptions and thoughts during the therapy process?

The answer to the first research question of the study, "How did the individual therapy contents of the children participating in the study change in terms of depressive symptoms, self-perceptions and thoughts during the therapy process?", is presented in terms of topics.

Findings regarding Main Problem 1. "How did the depressive symptoms of the children participating in the study change during the therapy process?"

The results of the content analysis conducted on the children's expressions during the individual therapy application based on cognitive behavioural therapy, the themes and sub-themes related to depressive symptoms, and their distributions, explanations and frequency values are presented in Table 2.

Table 2. Depression theme and sub-themes regarding children's statements in individual therapy sessions based on cognitive behavioral therapy

Theme	Sub-Theme	Sub-Theme Descriptions	F
Depression	Behavioural consequences	Reactions to depressive symptoms (sleeping, locking himself/herself in the room, etc.)	20
	Social retreat	Avoidance of contact with others	18
	Physiological reactions	Reactions observed in the body when depressive symptoms are experienced (sweating, nausea, etc.)	9
	Thinking about death	Desire to die, which occurs when depressive symptoms are experienced	5

As can be seen in Table 2, five sub-themes were identified for the theme of depressive symptoms during the application process of the children, who participated in the study. Explanations regarding these sub-themes are presented in Table 2. In addition, the statements of the students obtained through the interview process related to each sub-theme are presented below.

Statements Related to the Sub-Theme Of Behavioral Consequences: This sub-theme, which represents the behavioural dimension of depression, refers to the reactions given by children to situations and events, in which they experience depressive symptoms. Behaviours such as sleeping, crying, throwing things on the floor, punching the wall, and slamming doors can be given as examples of children's reactions to such situations. At this point, study participants K2-10-E and K4-10-E described this situation as follows:

> *"Sometimes, When I am angry, I throw things on the floor. I toss the chair on the floor... When my parents fell out, I was very angry. I toss the chair on the floor. I threw the things on the floor. That's why the remote control of my battery car broke."* ***(P2-10-M)***

> *"Also, I hit myself when I am crying in the toilet. I hit the wall. I punch it (the wall)."* ***(P4-10-M)***

Statements Related to the Sub-Theme Of Social Withdrawal: This sub-theme, which represents the social withdrawal dimension of depression, manifests itself in the form of children rejecting social relationships, isolating themselves from others and avoiding contact with others. Situations such as locking himself/herself in the room, not

talking to anyone, and refusing activity offers can be given as examples of this sub-theme. At this point, study participants, P1-10-F, P4-10-M and P5-10-M described this situation as follows:

> *"Yes, at the break, I went straight to him/her. I asked him/her something. I tried to talk to him/her, but he/she said he/she wanted to go out with his/her friend. So I left him alone so as not to bore him. I also did not want to insist. I decided to sit down by myself."* ***(P1-10-F)***

> *"For example, they stand side by side in the classroom and chat. I am there too. But the conversation takes place between the two. I cannot join the conversation. I mean, they will not even notice it if I leave. Sometimes I do leave. They do not even care." Then, I want to stay alone. I sit at the rear side of the classroom."****(P4-10-M)***

> *"I sit alone in my seat. I do not talk. I do nothing because they do not want to be friends with me, they do not like me."* ***(P5-10-M)***

Statements Related to the Sub-Theme of Physiological Reactions: This sub-theme, which represents the physiological reactions dimension of depression, refers to the reactions observed in children's bodies in the face of situations and events, in which they experience depressive symptoms. Abdominal Pain, Nausea, Difficulty In Breathing, Sweating, Shivering, and Chills can be given as examples of physiological reactions. At this point, study participants P2-10-M, P3-10-F and P4-10-M described this situation as follows:

> *"I wanted to sleep non-stop. I had headaches and stomach aches all the time."* ***(P2-10-M)***

> *"I had a stomach ache. My hands got cold and shivered. I was stressed. My stomach hurt so much. And I could not sleep. I had difficulty in sleeping, so I slept late."* ***(P3-10-F)***

> *"I clench my fists. I make fists. I squeeze my legs, my body tightly. And I punch left and right. My legs shake."* ***(P4-10-M)***

Statements Related to the Sub-Theme of Thinking about Death: This sub-theme, which represents the dimension of depression resulting from thoughts about death, refers to the thoughts about death that children have in their minds in response to situations and events, in which they experience depressive symptoms. Thoughts such as "I wish I never existed, I want to die, why am I alive..." can be given as examples. At this point, study participants, P1-10-F, P2-10-M and P4-10-M described this situation as follows:

> *"At that moment I wanted to kill myself. I was afraid they would never make up again. They told me that we would never make up again."* ***(P1-10-F)***

> *"When they yell at me, when I think they do not love me, I want to kill myself. I wish I was dead, I say."* ***(P2-10-M)***

> *"And also one more thing... "Help from my mom ... just a minute, I will tell it. I had Turkish homework and I was supposed to memorise a poem. And my mom was going to help me. We were in the bedroom. Then my elder brother came there and he was standing. I think he was just trying to annoy me. And then, you know, I was pissed off. I could not go on ... I was telling him to go away, but he did not. As I told him to go away, he was saying "why?" I told it to my mom, she also said "why does it bother you?" But I could not memorize the poem like that. Then I got angry. I went to the toilet. I started to cry. I said to myself "Why am I the child of this family?" At that moment I wanted to kill myself."* ***(P4-10-M)***

Findings Regarding Sub-Problem 2. "How did the self-perceptions of the children participating in the study change during the therapy process?"

The results of the content analysis conducted on the children's expressions during the individual therapy application based on cognitive behavioural therapy, the themes and sub-themes related to self-perception, their distributions, and frequency values are presented in Table No 3.

Table 3. Self-perception theme and sub-themes regarding children's statements in individual therapy sessions based on cognitive behavioral therapy

Theme	Sub-Theme	Sub-Theme Descriptions	F
Self-perception	Social self	Interpersonal relationships between the client and peers	22
	Academic self	Academic success perception of the client	11
	Physical self	Client's perception of his/her appearance (beauty, height, etc.)	6

As can be seen in Table 3, three sub-themes were identified for the theme of self-perception during the application process of the children, who participated in the study. Explanations regarding these sub-themes are presented in Table 3. In addition, the statements of the students obtained through the interview process related to each sub-theme are presented below.

Statements Related to the Sub-Theme Of Social Self: This sub-theme, which represents the social self-perception dimension of self-perception, refers to the interpersonal relationships that children establish with their peers. It is observed that the participants, who were selected among children with high depressive levels, had negative social perceptions, especially during the first sessions. Exclusion, unpopularity and distancing oneself can be given as examples for this sub-theme. At this point, study participants, P1-10-F, P2-10-M and P3-10-F described this situation as follows:

> *"Since he has other friends, he did not pay much attention to me. They did not welcome me among them."* ***(P1-10-F)***
>
> *"For example, before I used to feel sad because I do not have friends, but now I do not feel sad because I am making new friends."* ***(P1-10-F)***
>
> *"My friends ignore me by making fun of me."* ***(P2-10-M)***
>
> *"For example, Gökçe is more beautiful than me and all the girls gather around her. She is popular, I am not."* ***(P3-10-F)***

Statements Related to the Sub-Theme of Academic Self: This sub-theme, which represents the academic self-perception dimension of self-perception, refers to children's perceptions of their academic status. It is observed that the participants, who were selected among children with high depressive levels, had negative academic perceptions especially during the first sessions. Failure, insecurity, and acceptance of failure can be given as examples for this sub-theme. At this point, study participants, P1-10-F and P3-10-F described this situation as follows:

> *"My elder brother is in the seventh grade...He scored high on the exam. That is why my parents congratulate him. But they did not say anything to me. They never congratulated me. I wonder if my family does not love me, if they think I am a failure. It made me so sad."* ***(P1-10-F)***
>
> *"For example, İrem is appreciated by her teachers because she studies hard and is successful. Those, who study hard also become popular. No one appreciates me at all. I'm not successful..."* ***(P3-10-F)***

Statements Related to the Sub-Theme of Physical Self: This sub-theme, which represents the physical self-perception dimension of self-perception, refers to children's perceptions of their appearance. It is observed that the participants, who were selected among children with high depressive levels, had negative physical perceptions especially during the first sessions. Problematic acne, finding oneself ugly, thinness, and height can be given as examples for this sub-theme. At this point, one of the participants of the study, P3-10-F described this situation as follows:

> *"Teacher, even though I am not a teenager, I get acnes and the more I play with them, the worse they get. They scab over. This makes me sad. I look ugly"* ***(P3-10-F)***

Findings Regarding Sub-Problem 3. "How did the thoughts of the children participating in the study change during the therapy process?"

The results of the content analysis conducted on the children's expressions during the individual therapy application based on cognitive behavioural therapy, the themes and sub-themes related to thoughts, their distributions, and frequency values are presented in Table 4.

Table 4. Thoughts and sub-themes regarding children's statements in individual therapy sessions based on cognitive behavioral therapy

Theme	Sub-Theme	Sub-Theme Descriptions	F
Thought	Belief in worthlessness	Cognitive approach core beliefs	37
	Belief in being unloved	Cognitive approach core beliefs	36

As can be seen in Table 4, three sub-themes were identified for the theme of thoughts during the application process of the children, who participated in the study. Explanations regarding these sub-themes are presented in Table 4. In addition, the statements of the students obtained through the interview process related to each sub-theme are presented below.

Statements Related to the Sub-Theme of Worthlessness: This sub-theme, which represents the schema of worthlessness from cognitive schemas, mainly refers to children's beliefs that they are worthless. Study participants P3-10-F and P4-10-M described this situation as follows:

> *"Actually, I think so too. Just like my brothers... I get mad at them, but actually they are right. I really cannot do anything. I lock myself in my room. I do not want to see anyone. And, I study."* ***(P3-10-F)***
>
> *"If I get a minus, my grade will be low. Then I will not be awarded a Certificate of High Achievement. And, I will not have fulfilled my responsibilities. I would fall out of the favour of my family."* ***(P4-10-M)***
>
> *"I wish my mum and dad acted more in line with my decisions. I do not want them to say "Let's see". I want them to confirm what I decide and what I say. For example, when I said, "I want to buy a game console," my father first said he had no money. He told me that the game console is expensive. Then they said, "Let us investigate, let us have a look." Now they are telling me that they are still investigating. But I want them to say okay when I first say it. Because they do not confirm what I say. And, I feel as if I am being ignored. If they really cared, they would buy it, they would confirm what I say or think."* ***(P4-10-M)***

Statements Related to the Sub-Theme of Being Unloved: This sub-theme, which represents the schema of being unloved from cognitive schemas, mainly refers to children's beliefs that they are not loved by anyone. Study participants P1-10-F and P2-10-M described this situation as follows:

> *"Not all of my 33 friends. I mean, many of them behave badly. For example, there are 33 people, 27 of them behave badly. They don't like me."* ***(P1-10-F)***
>
> *"Yes, but it was very harsh for me. I thought I was alone. My father left me alone as if he did not love me."* ***(P1-10-F)***
>
> *"If my mother stood in front of me? I would tell her that she does not love me."* ***(P2-10-M)***

Findings Regarding Sub-Problem 4. "How did the emotions of the children participating in the study change during the therapy process?"

The results of the content analysis conducted on the children's expressions during the individual therapy application based on cognitive behavioural therapy, the themes and sub-themes related to emotions, their distributions, and frequency values are presented in Table 5.

Table 5. Emotions theme and sub-themes regarding children's statements in individual therapy sessions based on cognitive behavioral therapy

Theme	Sub-Theme	Sub-Theme Descriptions	f
Emotion	Sadness	Mental uneasiness in the face of an undesirable situation	37
	Anxiety	Unidentified state of anxiety, uneasiness	17
	Anger	Anger felt in response to a situation	13
	Shame	Lack of confidence and courage in the society	9

As can be seen in Table 5, four sub-themes were identified for the theme of emotions during the application process of the children, who participated in the study. It is observed that the participants, who were selected among children with high depressive levels, had negative emotions especially during the first sessions. Explanations regarding these sub-themes are presented in Table 5. In addition, the statements of the students obtained through the interview process related to each sub-theme are presented below.

Statements Related to the Sub-Theme Of Sadness: This sub-theme, which represents the sadness dimension of the emotion theme, refers to the mental uneasiness that children experience when they encounter an undesirable situation or event. At this point, study participants, P2-10-M, P3-10-F, P4-10-M and P5-10-M described this situation as follows:

"I would be sad if I did not get on well with my mum and dad. For example, on Sundays when I am at home, I want to spend time with my mum and dad, but my mum tells me to memorise the multiplication table. But I know the multiplication table. On Sundays, I cannot spend time with them. It makes me sad. I think they do not want to spend time with me." ***(P2-10-M)***

"I was very upset after that incident. Because I thought that I was worthless and that my father did not care about me." ***(P3-10-F)***

"I thought about how lonely I was, how I'd fallen out of his favour. I was sad" ***(P4-10-M)***

"I got a low grade on the exam. Then, they yelled at me angrily. I was very upset. I left the room without doing anything, I went to my own room. I spent some time just doing nothing. I wanted to be alone." ***(P5-10-M)***

Statements Related to the Sub-Theme of Anxiety: This sub-theme, which represents the anxiety dimension of the emotion theme, refers to the state of uneasiness and anxiety that children experience but cannot define. At this point, study participants, P1-10-F and P4-10-M described this situation as follows:

"I get anxious when someone is angry with me. For example, mom and dad... I am telling myself that I am not successful. I am telling myself that they do not love me. It makes me so sad." ***(P1-10-F)***

"But, for example, when my English teacher said, "If you have a minus grade and if you want to fix it, you can write a homework assignment", I was ashamed to say it at that moment. I got anxious. I could not tell them that I had a minus grade. I did not want them to think that I am lazy." ***(P4-10-M)***

Statements Related to the Sub-Theme of Anger: This sub-theme, which represents the anger dimension of the emotion theme, refers to children's feelings of anger in the face of a situation or event they come across. At this point, study participants, P3-10-F and P4-10-M described this situation as follows:

"I feel angry because he hit me. I am very upset. I think I will fail in other areas as well." ***(P3-10-F)***

"I'm only mad at my family. I get sad when something happens with my friends. I do not get angry with my friends, I feel sad." ***(P4-10-M)***

Statements Related to the Sub-Theme Of Embarrassment: This sub-theme, which represents the dimension of embarrassment from the theme of emotion, refers to children's lack of confidence and courage in the community or in social relationships. At this point, study participants, P1-10-F and P4-10-M described this situation as follows:

"I am ashamed of others." ***(P1-10-F)***

"My father is not a very talking person. We do not talk much with dad. He's more of an introvert. He comes to my room and takes a look inside. His facial expression is negative... We can already understand his thoughts from his face. That is why I am so ashamed. I think he probably thinks I am weak. I think, "He is now thinking of getting angry with me." ***(P4-10-M)***

Findings Regarding Sub-Problem 5. "How were the changes of the children participating in the study shaped during the implementation process?"

The results of the content analysis conducted on the children's expressions during the individual therapy application based on cognitive behavioural therapy, the themes and sub-themes related to the growth of children, distribution of the codes, and frequency values are presented in Table 6.

Table 6. Process theme and sub-themes regarding children's statements in individual therapy sessions based on cognitive behavioral therapy

Theme	Sub-Theme	Code	F
Change	Cognitive		29
	Emotional	Strong Feeling	6
		Happiness	3
	Behavioural	Taking Responsibility	6

As can be seen in Table 6, three sub-themes were identified for the theme of Change during the application process of the children, who participated in the study. Explanations regarding these sub-themes are presented in Table No 6. In addition, the statements of the students obtained through the interview process related to each sub-theme are presented below.

Statements Related to the Sub-Theme of Cognitive Changes: This theme, which represents beliefs and thoughts, refers to children's healthy and realistic thoughts about themselves and their environment. Study participants P1-10-F, P2-10-M, P3-10-F, P4-10-M and P5-10-M described this situation as follows:

"More positive things are happening. For example, in the past, when I intended to ask a friend "Shall we go to the cinema?", I used to think a lot about whether I should ask or not, or whether he/she would reject me or be offended by me. But now I don't think like that at all. If he/she refuses, maybe he/she will do some other thing or offer something else. Nothing negative comes to my mind" ***(P1-10-F)***

"The change of my point of view. Actually, mom and dad are not so different. But I always thought they did things because they didn't love me. For example, when they yelled at me and got angry. But now when they shout at me and get angry, I think there might be other reasons. I don't think they do it because they don't like me." ***(P2-10-M)***

"Actually, it was going on in the same way. I didn't listen to the lesson, thinking that I would fail anyway. But since last week, it's not going on in the same way anymore. Because after I talked to you last week, I realised it was not true. I really started showing the necessary effort. I can be successful too. I hung the questions I couldn't solve on the wall next to my desk. I was trying to follow the curriculum and my father saw that and he didn't tell me to study at all. Because he was already seeing that I was working hard...

Because now I know that I am no longer a failure. I have different kinds of achievements. Therefore, I changed my way of studying and thinking both at home and at school." ***(P3-10-F)***

"Normally, until today, I thought that I was ignored. And that made me very sad. But now I don't think it's right. Because actually, yes, there are more signs showing that they care about me. And I am happier when I think like this." ***(P4-10-M)***

"For example, I made 2-3 more friends this week. I wasn't afraid of doing wrong. I thought maybe I was loved. I decided to try. I didn't hesitate to chat with my friends. In this way, I made a few new friends when

compared to the last time we spoke. For example, Süleyman and Alaaddin... In fact, Aladdin is not in our class." ***(P5-10-M)***

Statements Related to the Sub-Theme Of Emotional Changes: This theme, which represents the emotional changes of the children towards the end of the application, consists of the codes of feeling strong and being happy. Study participants, P1-10-F and P3-10-F, made the following statements regarding the code of feeling strong and being happy:

Statements Related to the Code of Feeling Strong:

"I'm trying to talk to people now. I feel stronger." ***(P1-10-F)***

"I will experience positive things. Since I realised my own achievements, good things started to happen. my self-confidence will increase. I will say that I am strong. and I will be happier. I will say this is my talent. My belief in myself will increase even more." ***(P3-10-F)***

Statements Related to the Code of Being Happy:

"They respected my ideas. I was very happy. I think they were surprised. They thought I was introverted. But I told my opinion to the group and they listened to me. They even liked it. Maybe this will go up even more." ***(P1-10-F)***

"I feel much better now when compared to our first meeting. I feel happier." ***(P3-10-F)***

Statements Related to the Sub-Theme of Behavioural Changes: This theme, which represents the behavioural development of children towards the end of the application, includes the code of taking responsibility. Study participants K1-10-K and K5-10-E made the following statements regarding the code of taking responsibility:

Statements Related to the Code of Taking Responsibility:

"I asked the teacher to assign a task to me during the Social Sciences Class. I asked if I could check the homeworks of my friends. And my teacher assigned that task to me." ***(P1-10-F)***

"It was the PE Class. Kerem and Yusuf started to play a game called "Aldım-Verdim". I was standing next to them. I told Kerem that this time it would be me Yusuf's partner while playing "Aldım-Verdim". He said "OK". And It was me this time and I played the game with Yusuf. This is the first time I have had such an attempt. It felt so good. At that moment, I thought that I had more friends than I thought." ***(P5-10-M)***

Main Problem 2. How do the parents of the children participating in the study rate the effectiveness of the therapy based on cognitive behavioural therapy?

The distribution and frequency values of the themes and sub-themes related to depressive symptoms obtained at the end of the content analysis on the answers given by the parents of the children to the semi-structured interview questions after the individual therapy based on cognitive behavioural therapy are presented in Table 7.

Table 7. Themes and sub-themes of children's responses to semi-structured interview questions after their parents' individual therapy application based on cognitive behavioral therapy

Theme	Sub-Theme Descriptions	f
Change of thoughts	Parental observations about the client's mental state in the face of his/her experiences	10
Self-expression	Parental observations regarding the client's ability to express his/her wishes and thoughts	12
Problem-solving skills	Parental observations of the client's approach during the crisis	10
Anger management	Parental observations on the client's ability to think and remain calm in the face of a negative situation	6

As can be seen in Table 7, four themes were identified according to the answers given by the parents of the children participating in the study to the semi-structured interview questions after the individual therapy based on cognitive behavioural therapy. Explanations regarding these themes are presented in Table 7. In addition, the statements of the students obtained through the interview process related to each sub-theme are presented below.

Statements Related to the Theme of Change of Thoughts: One of the themes that emerged as a result of the analysis conducted on the responses of the parents regarding the applied therapy process is the theme of change of thoughts. In this theme, it was tried to understand the effect of the therapy process on children from the perspective of parents. It includes parental observations of changes in children's perspectives in the face of any situation or event. At this point, one of the participants of the study, P4 described this situation as follows:

> *"At first he would never accept the negative things in any way. His reactions to negativities changed a lot. We also weren't able to understand this from his speeches. He felt he was worthless. We were thinking "He's just a child, it is normal that he gets angry". At least we understood him. He realised that this was not an issue of worthlessness. He stopped feeling worthless in the event of negativities. We have seen quite a benefit. Soon, he will be entering adolescence and it will affect his behaviours in the future. Somehow, he gave me positive feedback."* ***(P4)***

Statements Related to the Theme of Self-Expression: One of the themes that emerged as a result of the analysis conducted on the responses of the parents regarding the applied therapy process is the theme of Self-Expression. This theme includes parental observations about the change in children's self-expression in the face of any situation or event. At this point, study participants, P1 and P3 described this situation as follows:

> *"What did I enjoy the most?" Hmm, let me answer. We were very pleased that my daughter was able to express herself, to build self-confidence and to make an effort by telling us her problems and putting forward her own opinion. Because before, my daughter could express herself like a five or six-year-old child, not like her peers, and she often cried. Sometimes she acted in a bad way. I thank you very much for this, because it saddened us naturally. You helped us a lot with this and everything is going well now."* ***(P1)***

> *"Her behaviours, her thoughts...she is doing just what she thinks. If she is sad, she is showing it with her acts. If she is happy, she is expressing her happiness through words. This already started to be useful. For example, she started to be more successful and to study hard. She expresses herself through her acts during her relations with her elder brothers, her father and me. Whatever she feels, she is just displaying it through her words and acts. Even while doing her homework, she can express her thoughts in a better way."* ***(P3)***

Statements Related to the Theme of Problem-Solving Skills: One of the themes that emerged as a result of the analysis conducted on the responses of the parents regarding the applied therapy process is the theme of Problem-Solving Skills. This theme includes parental observations on children's behaviour in solving problems in the face of a crisis. At this point, one of the participants of the study, P4 described this situation as follows:

"He gained self-confidence. I can easily notice it. He is a little more self-confident when he is talking or doing something, he can act on his own, and he can produce solutions. So I began to understand better that he is growing up. This helped me a lot." ***(P4)***

Statements Related to the Theme of Anger Management: One of the themes that emerged as a result of the analysis conducted on the responses of the parents regarding the applied therapy process is the theme of Anger Management. This theme includes parental observations on children's ability to remain calm and control their feelings in the face of any situation or event. At this point, one of the participants of the study, P4 described this situation as follows:

"Most of all, he learnt to control his temper to some extent. Before, I could not calm down my son in a situation that was against him, but now he can at least stop and think when we say no. He can say "OK" and do other things." ***(P4)***

"He can produce solutions. Instead of crying and getting angry, he tries to solve the problem by producing solutions." ***(P4)***

Discussion and Conclusion

In the present study, the effect of individual therapy based on cognitive behavioural therapy on the level of depressive symptoms of children was investigated. In the study, the content of the interviews conducted with the children and the answers given to the semi-structured interview questions prepared by the researcher after the application and received from the parents were used as data. The content of the interviews and the answers given to the semi-structured interview questions were subjected to content analysis.

Firstly, the study sought to answer the question of how children evaluate the therapy process. Accordingly, when the contents of the therapy applications with children were analysed, it was found that the main themes were depression symptoms, self-perception, cognitive, emotional and changes. When these themes were examined, it was seen that there was a relationship between these variables examined in the literature (Akguc, 2021; Karakaya, 2006; Ozcan, Subası, Budak, Celik, Gurel, & Yildiz, 2013). In their study, Turkcapar et al. (1995) stated that, just like in adults, depression and negative beliefs interact in children. Erden and Guler (2014) concluded that there is a positive relationship between depression and low self-perception variables. In the present study, the children's expressions brought these connections to the fore. The most important result that emerged when the interviews with the children were reviewed was: The themes identified as emotional, behavioural and cognitive, which had negative sub-themes in the first sessions of the therapy, turned into positive sub-themes that were identified as changes in the subsequent stages of the therapy. This shows the effectiveness of individual therapy on children.

First of all, when the theme of "depression" is examined, the sub-themes of behavioural consequences, social withdrawal, physiological reactions and thoughts on death were identified. When the literature was examined, similar variables were found as sub-dimensions related to depression (Aksu, İncel, Akar, Ustun, Cam, & Toros, 2022; Cilhoroz, 2023; Oy, 1990, 1991). When the contents constituting these themes and sub-themes were analysed, it was tried to understand how each of the children experienced depressive symptoms in their own world. When the behavioural results were examined, it was observed that children experienced behaviours such as aggression, anger and crying. With the sub-theme of social withdrawal, it was understood that children locked themselves in their rooms, stopped communicating with their friends and became lonely when they experienced events that caused them to experience depressive symptoms. The physiological sub-theme consists of bodily indicators such as shivering, chills, abdominal pain and nausea that the children expressed that they could not control at the time of the event. The sub-theme of thinking about death consists of the thoughts that children think when they cannot cope with the crisis and cannot solve the problem.

When the theme of "self-perception" was analysed, the sub-themes of the social self, physical self and academic self were identified. When the "cognitive" theme was analysed, it was seen that there were sub-themes of worthlessness and not being loved. When the theme of "emotion" was analysed, it was seen that there were sub-themes of sadness, anxiety, anger and embarrassment. It was observed that each of these themes and sub-themes, which were thought to support

the theme of depression, defined negative feelings, thoughts and behaviours. When the statements of the children were analysed, it was determined that children with depressive symptoms also had low self-perception, had negative cognitions and experienced negative emotions.

The theme of change was the last identified theme. The theme of change consists of sub-themes of cognitive development, emotional development and behavioural development. When the process was analysed, the statements of the children in the first sessions consisted of negative statements forming the themes of depression, self-perception, thoughts and emotions. During the last sessions, these expressions were replaced by more positive expressions forming the theme of development. This shows that individual therapy based on cognitive behavioural therapy is effective on the level of depressive symptoms of children. In addition, it is revealed that children's self-perception, thoughts and emotions also changed positively.

When the literature is examined, it is seen that there are studies showing that cognitive behavioural therapy is effective on children band it supports the present study (Alpaslan & Erol, 2016; Bengisoy, Ozdemir, Erkivanc, Sahin, & İskifoglu, 2019; Brent, Holder, Kolko, Birmaher, Baugher, & Roth, 1997; Suler, 2017). In this direction, it can be said that the findings of the present study coincide with the other studies in the literature.

Another dimension of the study is the analysis of the responses of the parents to the semi-structured interview questions created by the researcher in order to obtain the parents' thoughts about the therapy. When the content of the parents' responses was analysed, it was seen that there were four main themes: change in children's thinking, self-expression, problem-solving skills and anger management. When the literature is examined, it can be seen that similar variables were studied with children with depressive symptoms (Garber, Frankel, & Herrington, 2016; Verduyn, Rogers, & Wood, 2009; Yang, Zhou, Zhou, Zhang, Pu, Liu, & Xie, 2017).

In their evaluations at the end of the therapy, the parents stated that the change in their children's thoughts and reactions to events/situations was observable. It is observed that anger management is also ensured in children who start to express themselves and develop problem-solving skills. Bedel and Ramazan (2011) reported in their study that children and adolescents who developed problem-solving skills also experienced healthier changes in anger management. In their study examining the effects of cognitive behavioural therapy on problem-solving skills, Aksu, Yıgman, and Ozdel (2019) emphasised the positive relationship between change in beliefs and problem-solving skills. When the literature is examined, it can be said that the research questions studied in the present study overlap with the literature.

Recommendations

Considering the results of the research, other suggestions for practitioners and researchers are presented below.

- In the present study, individual therapy was reported by both students and parents to be effective in reducing depressive symptoms, self-perception and negative beliefs. For this reason, individual therapy applications can be given more place in psychological counselling departments in schools in addition to guidance and group studies.
- The present study is based on cognitive behavioural therapy. The effectiveness of individual therapy applications in children with different theoretical approaches can be studied.
- It is seen that there is a limited number of studies on individual therapy applications in the literature. In the present study, the problem area of depression is studied. Therefore, studies examining the effectiveness of individual therapy applications on different problem areas can be conducted.
- Individual therapy and group counselling applications can be compared in terms of effectiveness.

Limitations

There are some limitations of this study. The first of these is that the study was conducted with the participation of five clients. The other limitation is that the study was conducted with children of the same age group and living in similar socioeconomic conditions. Therefore, in future studies, the effectiveness of individual therapy can be investigated through qualitative data analysis by taking into account more people with different socioeconomic statuses and ages.

Acknowledgment

This article is derived under the supervision of Professor Doctor Zeynep Hamamci from Ayşe Nur Katmer's PhD dissertation entitled "Investigation of the Effect of Cognitive Behavioural Therapy on Children's Depression Levels". The present study was authorised by Gaziantep University Social and Human Sciences Ethics Committee based on the decision dated 28.01.2022 and numbered 143351. The said Authorisation Letter is presented in Annex-1. The authors of the present study declare that they do not have any conflict of interest regarding the study. All applicable international, national and/or institutional guidelines for clinical trials were respected.

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Appendix 1. Parent Interview Form for Cognitive Behavioral Therapy-Based Individual Therapy

Parent Interview Form for Cognitive Behavioral Therapy-Based Individual Therapy

Description: Hello dear parent. We had a 10-week psychological counseling process with your child. I would like to know your thoughts on this process. For this, I will ask you some questions. It is very important that you answer these questions honestly and honestly. I will record our meeting. Do you mind?

Thank you for your participation.

Interview Questions

Question 1. What did you benefit most during the 10-week counseling process with your child?

Question 2. Would you recommend the psychological counseling process to parents who have similar problems with your child? Can you talk about the reasons?

Question 3. How did the child's thoughts change when the counseling process was over?

Question 4. How did the child's feelings change when the counseling process was over?

Question 5. How did your child's behavior change when the counseling process was over?

Question 6. Is there anything you would like to add?

Journal for the Education of Gifted Young Scientists, 11(1), 75-89, March 2023
e-ISSN: 2149- 360X
jegys.org
dergipark.org.tr/jegys

Young Wise Publishing
youngwisepub.com
gencbilgeyayincilik.com

Research Article

Examining the views of trainers and trainees on the effectiveness of on-line Youtube guitar training[1]

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Article Info

Received: 18 December 2022
Accepted: 22 February 2023
Available online: 15 March 2023

Keywords
Distance Learning
Guitar Training
Music education
YouTube on-line guitar training

Abstract

YouTube, which enables individuals to access information by eliminating the concept of time and space, is becoming more and more involved in the education dimension every day. The purpose of this research is to examine the effects of guitar training videos published in Turkish on YouTube on guitar playing, in line with the views of trainers and trainees, and the effectiveness of YouTube on-line training in line with the views of educators and trainees. In this descriptive research, a scanning model was used. 30 trainers who regularly upload free training content to YouTube and 96 people who received training from these trainers participated in the research. As a data collection tool, the Opinions Questionnaire on Guitar Education on YouTube, which consists of five-grade likert type questions and open-ended questions, was used. As a result of the research; it is seen that most of the instructors broadcast to provide their information free of charge and to support the educational institution they are affiliated with, and the preferences of the students to follow these broadcasts are due to transportation, time and financial opportunities. In line with the statements of the participants, it was concluded that the students found the Turkish guitar training content published on YouTube useful, they were able to communicate with the trainers and the majority of them were able to learn guitar with this method.

To cite this article:

Gayret, S. (2023). Examining the views of trainers and trainees on the effectiveness of on-line Youtube guitar training. *Journal for the Education of Gifted Young Scientists*, *11*(1), 75-89. DOI: http://dx.doi.org/10.17478/jegys.1240518

Introduction

The education process, which started with the existence of human beings, gained a different direction by paving the way for the transfer of information to the next generations with the discovery of writing. The face-to-face education process that lasted for thousands of years, after Isaac Pitman used letters to teach shorthand to students in the 1800s, and then Skerry's College's use of a similar method for the civil service exam (Oliveira & Rumble, 2013, p.3) has gained a new dimension among the education methods. Eniac (Weik, 1961, p.572, Goldstine & Goldstine, 1946, p.97), which was invented in 1945 at the Moore electronic engineering school to calculate the firing tables of the Armed forces, went down in history as the world's first electronic machine. In today's digital world, the invention of the internet in 1994 (Pitkow & Recker, 1995, p.810) started a new era in communication. Yotube website (Keskin, 2018, p.1), where Jawed Karim shared the video he shot in front of elephants in the zoo in 2005, has become one of the biggest actors of social media as of 2022.

Distance education (Akdemir, 2011, p.69), which is defined as the education method in which the educator does not physically interact with the student, is constantly changing and developing thanks to technological developments.

[1] This study was presented at 2nd International Rast Music Congress on January 14-15, 2023 (Antalya, Turkiye).

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Globally increasing human population, political changes, wars and migrations make it difficult for societies, especially children, to reach quality education. However, the Covid 19 pandemic, which emerged in 2019 and affected the whole world, caused a long delay in education. During the pandemic period, radical changes took place in education (Daniel, 2020, p.91) with the preference of distance education instead of face-to-face education in many countries. By its nature, art education is an expensive process. Instrument education, which must be continued one-on-one, requires economic power. In this context, on-line instrument training platforms offer unlimited possibilities in terms of method and accessibility for individuals who want to learn instruments. According to Negash & Wilcox (2008), there are 6 types of distance education.

- Use of digital materials that support face-to-face education
- Training using only materials
- On-line learning (In this learning environment, the instructor shares rich technological content with students other than video. They can interact via mail or message)
- It is a face-to-face training method performed on-line. It is an education model defined as online education.
- In this learning environment where on-line and face-to-face education are carried out together, face-to-face meetings are rarely made, mainly on-line education is done.
- In this learning, the classroom environment will be used and there is face-to-face on-line interaction when necessary (p. 4).

Globally accessible YouTube is an important part of distance education thanks to its rich content and interaction opportunities.

In the 21st century, YouTube, which broadcasts on advertising, industry, social events, health, sports and many other subjects, has led to radical changes, especially in the field of education. YouTube, where professional or amateur trainers can easily upload content, has become one of the distance education channels especially preferred by the young population (Baek, 2015) because it is free and easily accessible. Music videos that ranked first in YouTube content (Ünal, 2019) made professional or amateur musicians make their voices heard globally (Gruzd & Hodson, 2021) and also influenced the world culturally. This radical change in the field of music has brought along new approaches in music education. Instrument training, which consists of systematic, disciplined and complex processes, is carried out within the framework of programs with intense interaction. With the communication and interaction of individuals becoming possible in the virtual environment, distance instrument education increases its importance day by day. The fact that the instrument training content published on YouTube is free has become an extremely important resource for people who want to learn the instrument. With thousands of instrument training resources on YouTube, it offers unlimited opportunities to individuals who want to learn instruments. It is very easy for individuals who want to learn globally popular instruments such as piano and guitar to access educational videos with rich content on YouTube. The guitar is one of the globally preferred instruments in terms of being a fretted instrument, being accessible, easy to carry and performing the traditional music of different cultures. Thanks to its technical features, the guitar is one of the instruments suitable for distance education. Among the YouTube videos within the scope of instrument education, the instrument with the longest duration after the piano is the guitar (Uygun, 2020, p. 17). Considering these advantages of the guitar, revealing the effectiveness of guitar training videos published on YouTube on amateur guitar training makes this research important.

The Problem of the Research

The aim of this research is to examine the Turkish guitar training videos published on YouTube in line with the views of educators and students. The main problem of this research is how the effectiveness of Turkish guitar training content published on YouTube platform is?

The sub-problems of this research are;

- What are the Turkish guitar training contents published on the YouTube platform?
- What are the participants' purposes for using the YouTube platform?

- What are the participants' thoughts on the Turkish guitar content on the YouTube platform?

Method

Research Model

The research is a descriptive research and was carried out in the scanning model. The survey model, which aims to describe a past or present situation as it is (Karasar, 2008, p. 77), enables the quantitative or numerical description of trends, attitudes or opinions in the universe through studies carried out on a sample selected within a universe (Creswell, 2017, p. 155).

Study Group

As a working group, the first 100 educators who give Turkish guitar training on the YouTube channel and have the highest number of followers were targeted and contact was established with them. As a result of the questionnaires answered, this research consists of 30 trainers and 96 people who received training from these trainers.

Table 1. Descriptive Information About Instructors

Variables		f	%
Gender	Male	24	80,0
	Female	6	20,0
Age	15-20	5	16.17
	21-25	5	16.7
	26-30	8	26.7
	Older than 30	12	40
Education	Music Education	5	16.17
	Faculty of fine arts	4	13.3
	Conservatory	4	13.3
	Social Studies	6	20.0
	Science	5	16.17
	High School	6	20.0
Main instrument	Guitar	6	20.0
	Piano	4	13.3
	Violin	1	3.3
	No instrument training	19	63.3
Occupation	I give private music lessons.	10	33.3
	I earn income through social media	1	3.3
	I play music professionally.	10	33.3
	I work in a private or public institution	5	16.7
	None of the above	4	13.3
Total		30	100

When Table 1 is examined, it is seen that the majority of the trainers are male (80%) and older than 26 (66.7%). However, it is understood that more than half of the trainers did not receive professional music (56.17%) and instrument training (63.3%). Another result of the research is that the majority of the trainers (66.6%) practice their music profession professionally.

Table 2. Descriptive Information about Education Participants

Variables		f	%
Gender	Male	80	84.2
	Female	15	15.8
Age	Younger than 15	2	2.1
	15-20	34	35.8
	21-25	24	25.3
	26-30	16	16.8
	Older than 30	19	20.0
Education	High School	29	30.5
	Undergraduate	55	57.9
	Post-graduate	11	11.6
Face-to-face education	I did not receive face-to-face training.	54	56.8
	I received face-to-face training before YouTube	16	16.8
	I received face-to-face training after YouTube	10	10.5
	I received face-to-face training along with YouTube	15	15.8
Total		95	100

When Table 2 is examined, it is seen that the majority of the trainees are male (84.2%) and between the ages of 15-25 (71.1%). In addition, it is understood that more than half (57.9%) of those who received education received education at the undergraduate level. Another result of the research is that the majority of the trainees (56.8%) did not receive face-to-face guitar training.

Data Collection Tool

Opinionnaire on Guitar Education on YouTube

In order to collect data, a literature review was conducted on the subject. In line with the information obtained, 2 similar questionnaires created by the researcher were used for the trainers and the trainees. There are 5 questions about personal information in the first part of the 17-question survey form, which consists of 3 parts. In the second part, there are 6 questions about the video contents. In the third part, there are 6 questions in order to determine the realization of the aims and objectives of the trainers and the trainees. Some questions of the questionnaire form were arranged as multiple choice and 5-point Likert type questionnaires due to the subject of the research. In the third part of the questionnaire, the option "other" was added to 2 questions, allowing individuals to comment.

According to Başkale (2016), the important factors in the validity and reliability of a qualitative research are sample size and proving its credibility (Başkale, 2016). Within the scope of the validity and reliability study of the questionnaire, on-line interviews were conducted with two publishers who shared Turkish guitar training content on the YouTube channel. In parallel with this, interviews were conducted with 5 people who received guitar training on YouTube. The questions prepared in line with the statements of the instructors and the trainees were evaluated by 3 instructors who are experts in the field of music education. The questionnaire form, which was reorganized in line with the evaluation, took its final form. An e-mail address is required for answering the online questionnaire. In this way, participants were prevented from giving more than one answer.

The research was carried out within the framework of publication ethics. Within the scope of the research, the necessary study permission was obtained from the Dicle University Non-Interventional Clinical Research Ethics Committee.

Data Analysis

The data collected through the questionnaire were analyzed using computer programs suitable for the scope of the research. Obtained data are presented as frequency (f) and percentage (%). Content analysis of the responses received from the "Other" option was performed. Suggestions were made in line with the results obtained.

Findings

In this part of the research, the data on the guitar training video contents of the trainers and the trainees are included.

Findings Regarding Turkish Guitar Education on YouTube Platform

Types of Guitar Performed in YouTube (On-line) Guitar Training

Table 3. Frequency and percentage distribution of instructors by type of instrument used in broadcasts

Instrument	f	%
Classic guitar	17	56.7
Acoustic guitar	6	20.0
Electro guitar	6	20.0
Bass guitar	1	3.3
Total	30	100.0

When Table 3 is examined, it is seen that more than half (56.7%) of the instructors who participated in the research gave training with the classical guitar. Another result of the research is that the number of educators who teach with acoustic guitar and electric guitar is equal (20%).

Types of Guitars Performed by the Participants of YouTube (On-line) Guitar Training

Table 4. Frequency and Percentage Distribution of Trainees by Guitar Type

Type of Guitar	f	%
Classic guitar	19	20.0
Acoustic guitar	7	7.4
Electro guitar	67	70.5
Bass guitar	2	2.1
Total	95	100.0

When Table 4 is examined, it is seen that the majority of the trainees (70.5%) follow YouTube training videos for the purpose of learning electro guitar. However, it is another result of the research that the trainees prefer the classical guitar more than the bass guitar and acoustic guitar.

YouTube (Online) Guitar Instructors' Experience (Publication) Periods

Table 5. Frequency and Percentage Distribution of Trainers by Broadcasting Time

Broadcast time	f	%
Less than 1 year	1	3.3
1-3 years	13	43.3
4-6 years	11	36.7
7-10 years	3	10.0
More than 10 years	2	6.7
Total	30	100.0

As can be seen from Table 5, it is seen that the majority of the trainers (43.3%) have been broadcasting for 1-3 years, and there is a high rate of trainers who have been broadcasting for between 4-6 years. Another result of the research is that the majority of the trainers (80%) who participated in the research have been broadcasting for between 1-6 years.

Watch Time of YouTube (On-line) Guitar Training Participants

Table 6. Frequency and percentage distribution of trainees according to watch time periods

Watch time	f	%
0-3 months	29	30.5
4-6 months	10	10.5
7 ay-1 year	10	10.5
1-3 years	25	26.3
More than 3 years	21	22.1
Total	95	100.0

As can be seen from Table 6, it is seen that most of the trainees (30.5%) followed guitar training videos within a period of 0-3 months. Another result of the research is that more than half of the trainees (51.5%) followed the guitar training videos in the last year.

YouTube (On-line) Guitar Instructors' Ways of Providing Educational Content

Table 7. Frequency and percentage distribution of instructors' status of priving sources

Source provided	f	%
I add digital source to videos	18	60.0
I do not use written or digital sources	11	36.7
I publish my own learning method	1	3.3
Total	30	100.0

As can be understood from Table 7, it is seen that the majority of the trainers (60%) add digital resources to the content they publish.

Access to Educational Content of YouTube (On-line) Guitar Training Participants

Table 8. Frequency and Percentage Distributions of Trainees' Access to Resources

Source Reached	f	%
I use the resources included in the videos	59	62.1
I don't have any sources I follow	20	21.1
Guitar methods	5	5.3
Paid online resources	11	11.6
Total	95	100.0

As can be seen from Table 8, it is seen that the majority of the trainees (62.1%) use the resources in the broadcasts they follow. Another result of the research is that the rate of those who prefer only visual education without using resources is high (21.1%).

Time that YouTube (On-line) Guitar Instructors Allot to Create Content

Table 9. Frequency and Percentage Distribution of the Time Instructors Allocated for Each Video

Allotted time	f	%
30 min- 1 hour	4	3.3
1-2 hours	6	20.0
2-3 hours	10	33.3
More than 3 hours	10	33.3
Total	30	100.0

When Table 9 is examined, it is seen that the majority of the trainers (66.6%) allocate at least 2 hours for each video content. In this context, it can be said that educators work for a long time to broadcast videos.

Time Allotted for Training by YouTube (On-line) Guitar Training Participants

Table 10. Frequency and Percentage Distributions Regarding the Time Allotted by Trainees for Each Video

Allotted time	f	%
Less than 30 min	26	27.4
30 min-1 hour	50	52.6
1-2 hours	13	13.7
2-3 hours	3	3.2
More than 3 hours	3	3.2
Total	95	100.0

When Table 10 is examined, it is seen that more than half of the trainees (52.6%) allocate at least 30 minutes to 1 hour for each video. It is a meaningful result that this period is close to an average lesson hour.

Findings on the Use of the YouTube Platform by the participants

Purpose of YouTube (Online) Guitar Instructors

Table 11. Frequency and Percentage Distribution of Trainers by Purpose of Broadcasting

Purpose of Broadcasting	f	%
Providing my information for free	22	40.0
Supporting my organization	14	25.5
Earning income from YouTube channel	16	29.1
Supporting face-to-face education	3	5.5
Total	55*	100.0

* Since the questionnaire contains multiple responses, the f number exceeds the sample size

When Table 11 is examined, it is seen that the majority of the trainers (40%) broadcast their information free of charge. In addition, it is revealed that the vast majority (69.9%) of the trainers participating in the research do not broadcast on YouTube for the purpose of earning income.

YouTube Platform Preferences of Those Who Attend YouTube (On-line) Guitar Training

Table 12. Frequency and Percentage Distribution of Trainees by YouTube Preferences

Reason for preference	f	%
It's free	68	31.1
Easy accessibility	67	30.6
Ability to control the learning process	34	15.5
Ability to choose different trainers	50	22.8
Total	219*	100.0

* Since the questionnaire contains multiple responses, the F number exceeds the sample size.

When Table 12 is examined, it is seen that the majority of the trainees prefer YouTube channels because it is free (F: 68) and easily accessible (F: 67). In addition, it is revealed that more than half of the trainees (f.50) take guitar lessons from YouTube channels because they can choose different trainers.

Behaviors That YouTube (Online) Guitar Instructors Want Trainees to Gain

Table 13. Frequency and Percentage Distributions of the Behaviors that Educators Want Trainees to Gain

Targeted behavior	f	%
Tuning, stance, grip	18	22.0
Right and left hand compatibility	18	22.0
Ability to play chords in 1st position	18	22.0
Domination of the keyboard	6	7.3
Playing the chord they see	13	15.9
Playing the piece they listen to	4	4.9
Ability to play written notes/tabs	5	6.1
Total	82*	100.0

*Since the questionnaire contains multiple responses, the F number exceeds the sample size

When Table 13 is examined, it is seen that the majority of the educators aim to make trainees gain the basic and intermediate level of tuning, right-left hand harmony and playing the chords in the 1st position. In addition, it is understood that instructors prefer popular guitar training more than classical guitar training.

Behaviors Acquired by Participants in YouTube (On-line) Guitar Training

Table 14. Frequency and Percentage Distributions of Trainees' Behaviors Acquired

Acquired behavior	f	%
Tuning, stance, grip	65	18.4
Right and left hand compatibility	62	17.5
Ability to play chords in 1st position	63	17.8
Domination of the keyboard	43	12.1
Playing the chord they see	55	15.5
Playing the piece they listen to	34	9.6
Ability to play written notes/tabs	32	9.0
Total	354*	100.0

*Since the questionnaire contains multiple responses, the F number exceeds the sample size.

When Table 14 is examined, it is seen that the majority of the trainees have acquired the basic and intermediate level of tuning, right-left hand harmony and playing the chords in the 1st position. In addition, it is understood that some of the trainees can play the piece they listen to and read the written notes/tabs.

Opinions of the participants on the Turkish guitar content on the YouTube platform

Contents Likes of YouTube (On-line) Guitar Training Participants

Table 15. Frequency and percentage distributions of educational areas regarding the content likes

Options	f	%
Never	0	0
Rarely	4	13.3
Occasionally	1	3.3
Often	13	43.3
Always	12	40.0
Total	30	100.0

According to the data in Table 15, the trainers stated that the trainees liked their video content to a large extent (83.3%). In this context, it can be said that the trainees often and always respond positively to the broadcasted videos.

Status of the Participants' Learning the Content of YouTube (On-line) Guitar Training

Table 16. The Frequency and Percentage Distribution of the Educational Subjects of the Learning Situations Thanks to the Content

Options	f	%
I've learned nothing	2	6.7
I've learned a little	7	23.3
I've learned enough	7	23.3
I've learned a lot	7	23.3
I've learned quite a lot	7	23.3
Total	30	100.0

When Table 16 is examined, the instructors stated that the students learned the guitar very well (69.9%) thanks to the videos. In addition, it is seen that there is a high rate of students (23.3%) who learn a little thanks to videos.

YouTube (Online) Guitar Trainers' Status of Sharing Guitar Performances

Table 17. Frequency and percentage distribution of the presentation of trainees' guitar performances

Options	f	%
Never	0	0
Rarely	19	63.3
Occasionally	6	20.0
Often	4	13.3
Always	1	3.3
Total	30	100.0

According to Table 17, trainers stated that trainees rarely (63.3%) share videos in line with what they have learned. In this context, it is seen that the students do not engage in enough video interaction.

Technical Problems YouTube (On-line) Guitar Training Participants Experienced

Table 18. Frequency and Percentage distribution of trainees on the technical problems they experience

Options	f	%
I don't experience any problems	28	29.5
I have a tuning problem	3	3.2
I'm having trouble with bare positions	22	23.2
I'm having trouble with right and left hand compatibility	23	24.2
I'm having trouble getting clear sound	19	20.0
Total	95	100.0

According to Table 18, it is seen that most of the trainees (70.5%) experience some technical problems. It turns out that the trainees generally have problems with right-left hand harmony and bare positions.

Musical Problems Experienced by Those Who Attend YouTube (On-line) Guitar Training

Table 19. Frequency and percentage distributions of the trainees on the musical problems they experience

Options	f	%
I do not have any problems	19	20.0
I'm having trouble with chord transitions	25	26.3
I'm having trouble finding tons	16	16.8
I have a rhythm problem	19	20.0
I'm having trouble staying in tone	16	16.8
Total	95	100.0

According to Table 19, it is seen that the majority (80%) of those who receive education experience musical problems. According to the data, it is revealed that they have the most (26%) problems with chord transitions.

Guitar Performances of YouTube (On-line) Guitar Training Participants

Table 20. Frequency and percentage distribution of trainees on guitar performances

Options	f	%
Very bad	6	6.3
Bad	25	26.3
Medium	44	46.3
Good	16	16.8
Very good	4	4.2
Total	95	100.0

When Table 20 is examined, it is seen that those who received education mostly play the guitar at an intermediate level (46%). However, it turns out that very few (4.2%) play the guitar very well.

Opinions of YouTube (On-line) Guitar Training Participants on the Benefit of On-line Training

Table 21. Frequency and percentage distribution of trainees on the benefits of guitar training on YouTube

Options	f	%
I don't find it helpful at all	1	1.1
I do not find it useful	7	7.4
I find it useful	17	17.9
I find it quite useful	40	42.1
I find it very useful	30	31.6
Total	95	100.0

When Table 21 is examined, it is seen that the majority of the trainees (91.5%) find the guitar training content published on YouTube useful. However, it turns out that the majority (42.1%) find the contents very useful.

Discussion

In this research, it is aimed to reveal whether the content of Turkish guitar training on YouTube is useful in line with the opinions of the trainers and the trainees, and if it is useful, to what extent it is useful. In this direction, the views of trainers and trainees were evaluated.

In the direction of the data obtained, it is seen that the instructors and the trainees who create the guitar training content are mostly men. Men are more willing than women to upload videos to YouTube to achieve a specific goal (Yang, Hsu, & Tan, 2010, p. 148). It is seen that the majority of the trainers participating in the research are older than 26 years old. The age group called the Y generation (1990-1999) is also called the semi-digital generation (Dolot, 2018, p. 44). The biggest feature of this generation is that they were born before technology and grew up with technology. The fact that the individuals who create the guitar training content are from the semi-digital generation shows that they use technology not only for entertainment but for certain purposes. It is seen that the majority of the trainees are between the ages of 15-25. This generation, called the Z generation or native digital, represents the age group that was born and raised with technology. The most important feature of this age group is that they use technological tools such as computers, video games, digital music and mobile phones intensively throughout their lives (Prensky, 2001). In his research, Ünal (2019) found that music videos are among the content liked by Z generation on YouTube. It is seen that the majority of the instructors participating in the research did not receive music education at the undergraduate level and the instructors who received music education received different instrument training. YouTube offers equal opportunities to amateur musicians as well as professional musicians (Sayımer& Turhan, 2017). The global popularity of the guitar and its physical advantages make it preferred on digital platforms. In this respect, guitar training videos are one of the tools that can enable amateur musicians to be recognized and earn money on YouTube. In the research, it is seen that the majority of those who receive education have graduated at the undergraduate level. (Lim at al., 2017) In his research on university students, he stated that the students use the YouTube channel for learning purposes, and they benefit from it at a high rate because of the publications suitable for their learning levels. In the data on the professional status of the trainers, it is seen that the majority of them give private music lessons and perform music professionally. In the 21st century, when digital advertising is used the most, concepts such as leaflets, business cards or posters are losing their meaning day by day. As with social media platforms, the YouTube channel uses different algorithms to offer different options in line with people's interests and preferences (Beuscart, Coavoux, &Garrocq, 2022, p. 11) and allows amateur musicians to be recognized. It is seen that more than half of the individuals who receive guitar training on YouTube do not receive face-to-face guitar training. Thanks to many educational videos uploaded every day, the educational content on YouTube is constantly increasing (Amos, 2021). In this respect, individuals do not have any problems in finding the appropriate trainer for their learning methods. Yungul & Can (2018), in their research with guitar students, did not find a significant difference between the success of the students who take lessons with the distance education method and the students who take lessons with the traditional teaching method. The ability to watch the broadcasts on YouTube again, as well as to change the playback speed and listen to the movements and sounds more slowly, makes instrument training broadcasts very attractive.

In the research, it is seen that the majority of educators prefer classical guitar during their broadcasts. Bass guitar and electric guitar need some electronic device support during performance. In this respect, it is meaningful that the instructors prefer the classical guitar during their broadcasts. It is seen that the instrument preferences of the individuals trained in the research are mostly electric guitar. One of the most important representatives of popular music culture is Pop/Rock groups. Thanks to technological developments, radical changes have occurred in the instruments used by these groups. At the beginning of these changes is the guitar. The electric guitar, which can provide rich sound content by using electronic plug-ins, is one of the instruments with a wide range of usage. The electric guitar, which is the basic instrument of metal music (Herbst, 2017, p. 23), is one of the most popular instruments. In this context, it is meaningful that most of the trainees prefer electric guitar education. According to the results of the research, it is seen that the majority of the trainers have given training in the last 3 years. The increase in camera and sound recording quality of smartphones has enabled quality recordings without the need for a studio environment. It is seen that more than half of

the students who answered a similar question preferred to learn guitar on YouTube in the last year. Distance education, which is mandatory with the Covid 19 pandemic process, has shown students and instructors that online education is possible. Considering the age range and educational status of the trainees, the fact that individuals have received guitar training on the YouTube channel in the last year shows that they have adopted distance education. In the research, it is seen that most of the trainers upload content to YouTube to provide their information free of charge and to support the institution they are affiliated with. YouTube channel can be seen as one of the easiest ways for individuals to share their knowledge and skills. It is only possible for amateur or professional musicians to display their knowledge and skills through concerts or audition. Although this process requires serious preparation, a limited number of people can benefit from the event. The contents uploaded to the YouTube channel can be watched beyond geographical borders in terms of being independent of global location and time. YouTube is one of the shortest paths to international fame for many amateur artists (Gruzd & Hodson, 2021). One of the best examples of this is the piece "Gangnam Style" uploaded to the YouTube channel of the group PSY. This work, which has 4.6 billion views in 2022, is globally recognized. With the widespread use of the Internet, the availability of smart phones has made it easier for individuals who want to receive education to act independently of the place. In the research, it is seen that the majority of the trainees prefer YouTube guitar training videos for free and easy access. YouTube offers extensive opportunities for instrument training, which is not included in the non-formal education system and requires a certain economic competence (Pires et al., 2022). It is seen that the instructors participating in the research provide digital resources to support their guitar training and the trainees benefit from these resources. Video editing programs, which provide simultaneous presentation of image and written sources, provide convenience to individuals who want to learn the instrument. For example, applications that visually display notes, chords or tablature simultaneously provide great advantages over face-to-face education. Using a similar application (Ayhan & Ertekin, 2017), it was concluded that students benefited greatly from solfege studies. Creating videos for YouTube is quite a challenging process. The decor, light, necessary hardware and software required in this process are quite costly. However, it takes time to use video editing programs correctly. It is seen that most of the educators participating in the research spend more than 2 hours to create each video content. Considering that an average video content is between 10-20 minutes, it is understood that instructors spend a significant amount of time creating content. In the research, it is seen that most of the trainees spend between 30 minutes and 1 hour for each video content. As can be understood from the result, it can be said that the trainees watch the videos again or use the slow playback option in line with their preferences. It is seen that the majority of the instructors participating in the research produce content with the aim of basic guitar training. When the publications of the trainers are examined, it is seen that almost all of them have started broadcasting at the beginner level. Field experts stated that grip, playing position, chord knowledge, musical notation, simple solfege and right techniques should be in amateur music education (Ceviz & Albuz, 2020, p. 123). In line with the data of the research, it is seen that the trainees have achieved these gains. As in Özengen educational institutions, it is understood that the guitar training contents on YouTube are carried out with a certain system.

The majority of the trainees in the study stated that they liked the Turkish guitar training contents and that they learned guitar thanks to these contents. However, it is seen that the trainees are not willing to exhibit what they have learned. According to the data, it is understood that the trainees experience technical and musical problems in guitar performance. Due to the nature of instrument teaching, physical contact between the instructor and the student from time to time is required. Incorrect posture, holding or rhythm errors can cause irreparable problems in the future if technical and musical problems are not intervened on site. In their research, Sakarya & Zahal (2020) concluded that the lessons were not efficient due to the inability of instrument students and instructors to interact and interfere with each other. The fact that most of the trainees do not like their own guitar performances in the data obtained supports the above situation. In the research, the majority of the trainees stated that they found the Turkish guitar training content on YouTube useful. The trainees who answered the “Other” option stated that the tablature system should be more widespread and more content should be created on harmony. In the 21st century, it is possible to obtain tablature prints of the works thanks to computer programs. It is quite easy to read tablature, especially for amateur artists who do not

want to learn musical notes (Yazawa et al. 2014). However, the trainees stated that metal music content is not sufficiently included in Turkish guitar training videos.

Conclusion

The digital world, which started with the development of technology, has initiated radical changes in the field of education, as in many other fields. While the impact of traditional education systems on new generations is decreasing day by day, digital learning is increasing. YouTube facilitates access to instrument training that requires a certain economic power. In this context, it offers individuals equal education opportunities. The variety of guitar training videos on YouTube enables individuals to create their own learning strategies. In line with the statements of the participants, it is seen that the YouTube environment is a suitable environment for learning guitar. However, Turkish guitar training content published on YouTube is not considered sufficient for individuals who want to play guitar above a certain level. However, it is understood that Turkish guitar training content published on YouTube is insufficient for individuals who want to learn classical guitar.

Recommendations

Although the Turkish guitar training content published on YouTube is systematic, there are hardly any publications on the subject in the institutional sense. In this context, it is important for the institutions providing music education and suggested to;

- Create content on YouTube, add necessary written sources to the created content
- Creating resources for individuals who want to learn guitar professionally
- Create content for classical music and other music genres
- Create certificate programs in line with the trainings given. Conducting similar research on different instruments is important in terms of reaching more data on online instrument training in Turkey.

Limitations of the Study

There are certain limitations in the research. This research is limited to instructors who teach Turkish guitar and those who receive training from them. In this context, it is very difficult to express the research results in general. The effect of the demographic characteristics of the participants on their thoughts on YouTube content was not analyzed.

Acknowledgment

I declare that I have not taken any of the actions stated under the title of "Actions Contrary to Scientific Research and Publication Ethics" in this study. This research was approved with the consent of the Social and Human Sciences Ethics Committee, dated 21.10.2022 and numbered 376917. No project or funding support was received in the research.

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Appendix 1. Opinionnaire on Guitar Education on YouTube

Opinionnaire Form for Guitar Trainer

Your participation in this study will take about 2 minutes of your time and you will be asked to choose the options that are suitable for you. Participation is completely voluntary and no identifying information will be requested from you. Your answers will be kept confidential and evaluated only by researchers. The information obtained will be used in scientific publications.
Although the study does not contain elements that may cause personal discomfort, if you feel dissatisfied with questions or for any reason, you can leave the application. At the end of the study, you can contact serif.gayretli@dicle.edu.tr for more information and questions about the subject. Thank you for your participation.

Gender	Female ( ) Male ( )
Age	15-20 years ( ) 21-25 years ( ) 26-30 years ( ) Older than 30 years ( )
Education Status	Music education ( ) Faculty of fine arts ( ) Conservatory ( ) Social Sciences ( ) Science ( ) High school ( )
The instrument you studied	Guitar ( ) Piano ( ) Violin ( ) I have no instrument training ( )
Occupation	I give private music lessons ( ) I earn income through social media ( ) I play music professionally ( ) I work in a private or public institution ( ) None of the above ( )
Type of Instrument you use in broadcasts	Classic guitar ( ) Acoustic guitar ( ) Electro guitar ( ) Bass guitar ( )
How long have you been broadcasting	Less than 1 year ( ) 1-3 years ( ) 4-6 years ( ) 7-10 years ( ) More than 10 years ( )
What kind of resource support do you provide?	I add digital source to videos ( ) I do not use written or digital sources ( ) I publish my own learning method ( )
The time you spend on each video	30 min- 1 hour ( ) 1-2 hours ( ) 2-3 hours ( ) More than 3 hours ( )
Purpose of Broadcasting	Providing my information for free ( ) Supporting my organization ( ) Earning income from YouTube channel ( ) Supporting face-to-face education ( )
Targeted behavior	Tuning, stance, grip ( ) Right and left hand compatibility ( ) Ability to play chords in 1st position ( ) Domination of the keyboard ( ) Playing the chord they see ( ) Playing the piece they listen to ( ) Ability to play written notes/tabs ( )
Status of Trainees to Like Your Publications	Never ( ) Rarely ( ) Occasionally ( ) Often ( ) Always ( )
Status of exhibiting Guitar performances of Trainees	Never ( ) Rarely ( ) Occasionally ( ) Often ( ) Always ( )

Opinionnaire Form for Guitar Trainee

Your participation in this study will take about 2 minutes of your time and you will be asked to choose the options that are suitable for you. Participation is completely voluntary and no identifying information will be requested from you. Your answers will be kept confidential and evaluated only by researchers. The information obtained will be used in scientific publications.
Although the study does not contain elements that may cause personal discomfort, if you feel dissatisfied with questions or for any reason, you can leave the application. At the end of the study, you can contact serif.gayretli@dicle.edu.tr for more information and questions about the subject. Thank you for your participation.

Gender	Female ( ) Male ( )
Age	15-20 years ( ) 21-25 years ( ) 26-30 years ( ) Older than 30 years ( )
Education	High School ( ) Undergraduate ( ) Post-graduate ( )
Face-to-face education	I did not receive face-to-face training ( ) I received face-to-face training before YouTube ( ) I received face-to-face training after YouTube ( ) I received face-to-face training along with YouTube ( )
Type of Instrument you follow	Classic guitar ( ) Acoustic guitar ( ) Electro guitar ( ) Bass guitar ( )
How long have you been following the broadcasts	0-3 months ( ) 4-6 months ( ) 7 months - 1 year ( ) 1-3 years ( ) More than 3 years ( )
What resources do you use	I use the resources included in the videos ( ) I don't have any sources I follow ( ) Guitar methods ( ) Paid online resources ( )
The time you spend on each video	Less than 30 min ( ) 30 min - 1 hour ( ) 1-2 hours ( ) 2-3 hours ( ) More than 3 hours ( )
Why you prefer YouTube training	It's free ( ) Easy accessibility ( ) Ability to control the learning process ( ) Ability to choose different trainers ( )
What behaviors have you learned	Tuning, stance, grip ( ) Right and left hand compatibility ( ) Ability to play chords in 1st position ( ) Domination of the keyboard ( ) Playing the chord they see ( ) Playing the piece they listen to ( ) Ability to play written notes/tabs ( )
How much did you learn to play guitar	I've learned nothing ( ) I've learned a little ( ) I've learned enough ( ) I've learned a lot ( ) I've learned quite a lot ( )
What technical problems are you experiencing	I don't experience any problems ( ) I have a tuning problem ( ) I'm having trouble with bare positions ( ) I'm having trouble with right and left hand compatibility ( ) I'm having trouble getting clear sound ( )
What musical problems are you experiencing	I don't experience any problems ( ) I'm having trouble with chord transitions ( ) I'm having trouble finding tons ( ) I have a rhythm problem ( ) I'm having trouble staying in tone ( )
At what level do you think you play the guitar	Very bad ( ) Bad ( ) Medium ( ) Good ( ) Very good ( )
How useful do you find the publications	I don't find it helpful at all ( ) I do not find it useful ( ) I find it useful ( ) I find it quite useful ( ) I find it very useful ( )

Journal for the Education of Gifted Young Scientists, 11(1), 91-105, March 2023
e-ISSN: 2149- 360X
jegys.org
dergipark.org.tr/jegys

Young Wise Publishing
youngwisepub.com
gencbilgeyayincilik.com

Research Article

Investigation of body posture problems experienced in baglama teaching process

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Article Info

Received: 1 December 2022
Accepted: 27 February 2023
Available online: 15 March 2023

Keywords
Baglama teaching
Bodily setting
Instrument training
Music education
Posture-holding
Sitting

Abstract

This research was conducted to determine the bodily setting problems experienced during the bağlama teaching process and to reveal the search for solutions to these problems. The research was conducted in accordance with the case study design, which is one of the qualitative research designs. The participants of the study consisted of 42 bağlama instrument teachers, 88.1% of whom were male (n=37) and 11.9% of whom were female (n=5). In the study, "open and closed-ended questionnaire form" prepared by the researcher was used as a data collection tool. The data obtained were analyzed according to thematic analysis technique. The research data were analyzed under five themes. These themes are; "Sitting mistakes and solution suggestions", "Instrument Positioning Mistakes and Solution Suggestions", "Right Hand Positioning Mistakes and Solution Suggestions", "Left Hand Positioning Mistakes and Solution Suggestions" and "Use of Apparatus for bodily setting". As a result of the research, it was determined that students experienced bodily setting problems during the baglama vocalization process and that teachers made various practices to overcome these problems.

To cite this article:

Inanici, M.K. (2023). Investigation of body posture problems experienced in baglama teaching process. *Journal for the Education of Gifted Young Scientists*, *11*(1), 91-105. DOI: http://dx.doi.org/10.17478/jegys.1246237

Introduction

The theoretical and practical functioning, which is a common feature in all branches of science and art, is similarly seen in the discipline of music. Instrumental and vocal vocalizations are at the forefront of actions for applications in the musical field. It is among the main goals of the field of music education to ensure that these actions for the field of practice are carried out correctly. In this context, in the instrument teaching process, which is one of the main areas of music education, various rules and disciplines are applied to gain the skills necessary for instrument vocalization. The instrument learning process can be defined as the learning process in which the behavior of the performer is exhibited in the period from the initial stage in which basic behaviors towards the instrument are acquired to the advanced stages when certain competencies are achieved. These behaviors are motivation in the affective domain, knowledge of effective working methods in the cognitive domain, and actions taken by the music performer to develop strength and speed for the instrument in the kinesthetic domain. Onder (2021) defines playing an instrument as a physical and mental act and that motivation and intense work are necessary for this process; Canbakan and Taninmis (2022) state that instrument training is a difficult and long process that requires great care. In this regard, Seyhan (2019) emphasizes that there are various skills that need to be acquired by the learner in the process of learning an instrument and that these skills can be

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listed as providing the right bodily posture suitable for the instrument, mastering the instrument, and producing a correct and clean sound from the instrument.

When the literature on instrument teaching is examined, it is seen that the most critical stage in the instrument learning process is the sitting, posture-holding behaviors that should be acquired at the beginning level. Various researchers on this subject state that posture and holding have an important place among the behaviors aimed to be acquired by the student at the beginning of instrument education (Dikici, 2014; Uslu, 2012; Yinal, 2019). Similar to these approaches, Fenmen (1991) states that the most important issue to be considered in the initial stage of instrument vocalization is to gain the learner the correct body posture and playing position.

It can be said that the main reason for misbehavior in sitting, posture-holding, arm, hand, and finger positioning, which can be summarized as bodily setup, is the inability to perform the harmony process between the physical characteristics of the instrument and the natural structure of the body. On this subject, Sogukcam (2007) states that physical tension in the performer due to the contradiction between the anatomical structure of the instrument and the natural posture of the body; Yildiz (2018), on the other hand, states that the individual's previous learning experiences and stress may have an effect. It is important to identify the problems that may arise in the bodily setting of the students from the beginning of the instrument education and to prevent the settling of the wrong habits learned by intervening (Saylam et al. 2021).

In the instrument vocalization process, each instrument is performed within certain and measurable physical frameworks, although the forms of body postur differ according to various vocalization and teaching approaches (Yagisan and Aydos 2004). When the literature on the baglama teaching process is examined, no research has been found to determine the bodily setting problems and what the bodily setting standards are in the baglama teaching process. Examination of body postur problems in the baglama teaching process can contribute to the planning and implementation of the individual instrument baglama teaching program. The problem of this study is that the body postur problems have not been examined in the baglama teaching process until now. Based on the stated problem situation, this study was carried out to determine the body postur problems experienced by the students during the baglama teaching process based on the opinions of the individual instrument baglama teachers of Fine Arts High School (GSL). Based on the problem situation, the problem question of the research was formed as follows: "What are the teachers' determinations about the wrong learning behaviors of the students in the body postur stage in the baglama teaching process and what are the practices to prevent learning mistakes?" The research questions addressed in relation to this identified problem question are as follows:

- In the baglama teaching process, what are the students' wrong learning behaviors in positioning the instrument on the knee? What kind of applications are made to solve this problem?
- What are the wrong learning behaviors of the students regarding the correct positioning of the hand holding the tezene? What kind of applications are made to solve this problem?
- What are the students' incorrect learning behaviors regarding the correct positioning of the hand on the instrument's fingerboard? What kind of practices are done to eliminate this problem?
- Are any auxiliary apparatus used to overcome the problems of body postur?

The Importance of Body Posture in the Instrument Vocalization Process

Bodily posture is bringing a part of the body, arm, hand, fingers or all of them into the desired shape for a certain behavior to take place. When this posture is not correct, in addition to the problems that may arise in the display of the desired behavior, there may also be problems in the bodily region that will reveal the behavior. Yildiz (2018) states that performing for a long time with incorrect bodily posture will cause permanent physical problems in the body. These problems are referred to as "musculoskeletal" problems in the literature. The fact that the neck and shoulders of the employees remain in a fixed position and perform movements with a large number of repetitions is a situation that is effective in the formation of problems based on musculoskeletal system disorders (Esen & Figlali, 2013). In addition to athletes, instrument performers, who are called athletes in the field of music (Elbaum, 1986; Wilson 1986), are among the groups that experience musculoskeletal problems the most. A large proportion of professional or beginner musicians

experience musculoskeletal problems during the instrument vocalization process and these problems can seriously damage their professional future (Steinmetz et al. 2008). Musculoskeletal disorders caused by incorrect body posture cause physical and mental problems for instrumental performers throughout their professional careers. Therefore, bodily posture exercises are of great importance in order to avoid musculoskeletal problems and to improve instrument performance. When the literature is examined, it is seen that various researchers state that physical posture has an important place among the behaviors aimed to be gained by the student at the beginning of instrument training (Dikici, 2014; Seyhan, 2019; Uslu, 2012; Yinal, 2019). Seyhan (2019) states that physical posture is important in terms of technical and aesthetic appearance in the instrument vocalization process and emphasizes that the correct physical posture will contribute to minimizing the physical discomfort that may arise from playing the instrument.

An individual who plays an instrument needs to make a lot of effort until he/she brings his/her instrument playing skills to the intended level. As the individual practices his/her instrument regularly and hard, he/she learns new techniques and his/her field of expression becomes richer and wider (Canbakan & Taninmis, 2022). The general opinion in instrument training is that increasing technical capacity will bring success in the instrument. Yildiz (2018) states that energy is used inefficiently while performing the instrument in posture positions based on incorrect bodily posture and as a result, the body is strained; and emphasizes that bodily posture directly affects the performance by affecting the efficiency and musculoskeletal system of the instrument performer. Therefore, in order to avoid these problems and to increase the technical capacity in instrument performance, one of the most important activities to be carried out is the realization of the correct bodily posture in accordance with the anatomical structure of the instrument to be played.
Failure to create the appropriate bodily posture for the task to be fulfilled related to the psychomotor domain may cause various physical discomforts in the individual. Considering that the muscles and skeletal structure are the main effective elements in the display of a psychomotor behavior, the muscles and skeleton are the elements that will be most negatively affected as a result of incorrect physical posture. Elbaum (1986) states that occupational musculoskeletal disorders in the musical field are caused by the interaction between the individual's bodily posture, the instruments he uses -the instruments of musicians are the instruments they use- and his environment. For this reason, the wrong bodily setup can cause various physical and mental problems in musicians. Yildiz (2018) states that performing an instrument for a long time with the wrong bodily posture will create permanent physical problems in the body. Canbakan and Taninmis (2022) state that musicians who aim to improve their vocalization skills experience certain physical discomforts or disabilities during the playing process, which causes them to move away from their instruments, decrease their working efficiency, become distracted, and experience psychological and mental problems. Yagisan (2002) states that the individual needs muscle power in order to provide a bodily posture suitable for the anatomical structure of the instrument. Therefore, the correct bodily posture and the development of the muscles are necessary for the vocalization of the instrument; it is possible to say that the muscles developed in this direction also contribute to the maintenance of the correct bodily posture and that there is an interactive relationship. Yagmur (2002) on this subject, muscle strength; He states that it is an important element because it helps the joints to work in a balanced way, to move efficiently and to reduce the risk of injury in the musculoskeletal system. Yildiz (2018) states that it is not enough to do only technical studies to increase the quality of musical interpretation; states that besides these studies, body postur studies are also necessary and they affect the quality of interpretation positively. Hopa (2004) states that the reason for the physical and mental problems that occur during the performance is due to not being aware of or not taking into account the mistakes of bodily posture. According to Fenmen (1991), the instrument study process is a process that involves making psychomotor behaviors spontaneous and performing these behaviors in a way that does not tire the body. Yıldız (2018) states that the body postur works carried out in the instrument vocalization process ensure the formation of cognitive and psychomotor coordination, and as a result, the problems that may be experienced in this area can be overcome while the instrument is playing. For this reason, one of the most important elements of the instrument study process is the efforts to ensure the correct bodily posture.

Causes of Bodily Disorientation

The body postur problems experienced in the instrument performance process are similar to the problems experienced in other professions in terms of the quality of the emergence conditions. The main causes of bodily posture disorders associated with musical practices are pain and specific muscle disorders following constant repetition, as well as features specific to the anatomical structure of the instrument (Steinmetz et al. 2008). Elbaum (1986) states that a certain part of individuals who perform in a profession are predisposed to experience potential physical problems while performing repetitive movements based on professional practices. Esen and Figlali (2013) stated that the repetitive movements of employees pose a great risk for musculoskeletal disorders; They state that tasks involving excessive repetitive movements of the shoulder, elbow and wrist joints cause discomfort in these areas. In this context, it can be said that instrument performers operating in the field of music requiring psychomotor behaviors, where musculoskeletal movements are used intensively, may also experience certain physical problems. Regarding the reasons that cause these problems, it is emphasized that the instrument may have to enter a position contrary to its natural posture in order to adapt to the anatomical structure of the instrument, and this causes physical tension, and that the problem is physically based (Onder, 2021; Sogukcam, 2007). Yildiz (2018), on the other hand, emphasizes the psychological aspect of bodily posture errors by stating that people's previous learning experiences, anxiety and tensions are related. Moraes and Antunes (2012) state that there are opinions in the literature that musculoskeletal problems in musicians are generally biomechanically based, but other factors are also decisive in the emergence of these problems. Moraes and Antunes (2012), among these elements; They state that there are technical problems such as sudden increase in vocalization intervals, insufficient exercise program, wrong working habits without warming up and stretching the muscles, grasping the instrument with excessive force or tension. Lee et al. (2013) state that instrument vocalization includes movements that are required for prolonged and unsuitable postures, and in this process, musicians become prone to musculoskeletal disorders.

Sitting-posture Holding in Instrument Vocalization

It is possible to list the body postur stages for the instrument as sitting or stance in the first stage, and holding in the second stage, depending on the vocal style and anatomical structure of the instrument. In the vocalization of some instruments, such as the violin or viola, the choice of sitting or posture behavior changes depending on the situation of playing the instrument sitting or standing. Although they can sing the instrument standing up, most of those who play the violin or viola perform the instrument seated in the orchestra (Linden et al., 2009). However, in the performance of some instruments such as cello, piano or baglama, only sitting behavior occurs as the first stage of bodily installation, regardless of preference. What Esen and Figlali (2013) have done about posture behavior; It is also possible to adapt the definition of “positions of the body, head, trunk, arm and leg parts during movement” for sitting behavior. In this case, the sitting or posture at the stage of body postur for the instrument; It can be defined as the position of the head, shoulders, torso, arms, legs, hands and fingers to sing the instrument. On the importance of correct posture, Mattila et al. (1993) state that the appropriateness of working postures for performing any task allows effective control of working performance. Correct posture is also referred to as a set of movements that are technically named in instrument vocalization and include appropriate behaviors towards the instrument. Johansson (2015) defines technique on the instrument as the complex coordination behaviors related to the motor skills necessary for the proper use of the instrument, especially correct posture, correct positioning and use of the fingers, and the correct grip of sound generators such as the bow or "tezene" used in instrument voicing. In this definition, the bodily posture behaviors for the instrument, both posture-sitting and holding behaviors are considered as a whole. However, even if the posture or sitting behavior to sing an instrument can be performed correctly, mistakes can be observed in the behavior of holding the instrument. In this context, correct holding behavior should be evaluated and defined separately from posture-sitting behavior. Grip for the instrument; It can be defined as the whole of actions, including touching the instrument, to vocalize the instrument in the stage immediately after the posture-sitting behaviors.

Sitting-stance, Posture, Grip in Bağlama Vocalization

The first of the two basic practices in "bağlama" vocalization is the "tezene" strokes applied to the string to both produce sound and to determine the temporal length of the sound; the second is the finger pressures made with the fingertips (distal phalanx) to determine the frequency of the sound by bringing the string into contact with the frets on the

fingerboard. Depending on whether the individual is left-handed or right-handed in baglama vocalization, the hands involved in performing these actions differ. In this study, explanations for bodily posture in Baglama will be explained on the basis of the active use of the right hand.

Correct sitting-posture and holding actions for the baglama instrument include various and sequential bodily posture compatible with the physical structure of the instrument. The act of sitting, which is the first step of the integrity of the body postur for baglama vocalization; It is possible to define it as the position taken by the head, shoulders, trunk, arms and legs to play the instrument. The instruments in the baglama family are similar to each other in terms of an anatomical structure. The main parts that make up this structure are the hull (hull), the cover (chest), the handle and the screw. In the baglama teaching process, it is aimed that the learner performs sitting-oriented behaviors as the first action of the preparation behaviors for vocalization. Positioning the boat of the Baglama on the knee is the dominant element of the sitting action in Baglama vocalization. Although baglama is performed standing up in the minstrel tradition of the Kars region (Bektas, 2022), when the literature on baglama education is examined (Ekici, 2012; Kalender and Keskin, 2010; Karahan, 2010), it is seen that the general acceptance is for the baglama to be performed sitting down. The correct positioning of the boat on the knee is the prerequisite behavior for the correct realization of the holding action, which is included in the successive actions of the bodily installation.

The holding action, which is the second step of the integrity of the body postur in baglama, can be explained as a two-part action that comes after the sitting stage and requires contact with the instrument. In the first part, putting the instrument on the right knee; grip between the right abdomen, right knee and right arm to keep the boat stable on the knee; In the second part, the actions of placing the instrument's handle on the oval area between the thumb and index finger of the left hand (the area where the thenar muscles are located between the 2nd metacarpal bone on the palmar surface and the 1st proximal phalanx bone) are performed. This posture, which consists of two parts, also forms the basis for the right and left hands to be operated separately, which are applications for vocalizing Baglama and based on the principle of teaching from simple to complex. In order to ensure that the left hand and fingers, which will press on the frets of the baglama, can move freely, the part of the right hand between the wrist and the elbow when holding the instrument is positioned in the middle of the chest between the lower threshold and the last fret, in order to provide balance and to perform the "tezene" strokes. It is held by bringing the handle of the instrument to the oval area between the thumb and index finger of the left hand. This grip is a prerequisite for performing the pressure on the curtains as well as the balance function, albeit a little. Considering that students who are new to baglama vocalization may have problems with using both hands at the same time and providing coordination between hands, it can be said that two-part bodily posture work is important because it can contribute to the solution of this problem.

The use of the "tezene", which is an auxiliary element in the vocalization of "Bağlama", can also be evaluated within a holding action. It is possible to explain the "tezene" grip as the act of holding between the tips of the thumb and index fingers (1st distal phalanx and 2nd distal phalanx).

Method

In this part of the research, the research model, study group, data collection tools, data collection process, data analysis and ethical procedures are included.

Research model

In this study, the case study design, which is a common form of qualitative research, was used. Yildirim and Simsek (2011) define qualitative research as the studies in which qualitative data collection tools based on document review, observation and interview are used and the process of explaining events and perceptions in their conditions with a holistic and realistic approach is followed. According to Merriam (2013), a case study is an in-depth description and examination of a limited system.

Study group

The study group of the research was determined by using the criterion sampling method, which is one of the purposive sampling methods used in qualitative research. Criterion sampling is the creation of a sample based on people, events,

objects or situations that have the qualifications to determine the problem (Buyukozturk et al., 2009). The main criterion for determining the study group by the researcher is that they are teachers who continue individual instrument baglama lessons in Fine Arts High Schools. The study group of the research consisted of 42 teachers working in Fine Arts High Schools affiliated to the Ministry of National Education in Turkey and continuing baglama lessons in the 2022-2023 academic year. The demographic characteristics of the teachers who make up the study group are as follows: The gender distribution was male (n=37) and female (n=5); The age ranges of the teachers are "21-25 years (n=1)", "26-30 years (n=3)", "31-35 years (n=4)", "36-40 years (n=15)" and "Above 41 years (n=19)"; The undergraduate program they graduated from is "Faculty of Education/Music Teaching (n=23)", "Conservatory (n=16)" and "Faculty of Fine Arts (n=3)"; The main instruments of their undergraduate program are "bağlama (n=34)", "violin (n=3)", "ud (n=1)", "piano (n=1)", "clarinet (n=1)". ", "pipe (n=1)" and "cello (n=1)"; The duration of baglama training was found to be "1-5 years (n=5)", "6-10 years (n=6)", "11-15 years (n=6)", "16-20 years (n=8) " and "21 years and over (n=17)".

Data Collection Tools

In this study, "open and closed-ended questionnaire form" was used as a data collection tool. The questionnaire was prepared by the researcher in order to determine the opinions of the teachers about the body postur problems experienced by the students during the baglama teaching process and the practices to overcome these problems. The "questionnaire form", which is briefly defined as a pool of questions, is frequently used to obtain data in social science research (Buyukozturk, 2005). While preparing the questionnaire, the literature related to the main purpose of the research was examined in order to ensure internal validity and a question pool was created within the scope of this purpose. During the preparation of the questions, care was taken to ensure that the questions were clear, comprehensible, impartial, containing data that could reflect the opinions of the respondents, optional and explanatory (Karasar, 2009; Yildirim & Simsek, 2011). The suitability of the prepared questions for the purpose of the research and the qualitative research method was presented to the opinion of three academicians who are experts in the field of baglama education and was redefined based on these opinions. The questions in the interview form, which took its final form in line with the suggestions made by the experts, were asked to three baglama teachers, who were not in the study group but were similar to the study group, before the application. As a result of the interviews made before the application, the order of some questions was changed according to their priorities, and some similar questions were removed from the questionnaire. In the questionnaire form prepared to determine the opinions of the Bağlama teachers who constitute the study group; "In the Bağlama teaching process, what are the wrong learning behaviors of the students regarding the positioning of the instrument on the knee? What kind of practices do you do to eliminate this problem?", "Can you specify what are the wrong learning behaviors of the students regarding the correct positioning of the hand holding the tezene? What kind of practices do you do to eliminate this problem?", "Could you indicate what kind of incorrect learning behaviors the students reveal about the correct positioning of the hand on the instrument's fingerboard? What kind of practices do you do to overcome this problem?", "Do you use any auxiliary apparatus besides lecturing and demonstration technique to overcome the problems you mentioned? If yes, what kind of auxiliary apparatus do you use?".

Data Analysis

The obtained data were analyzed according to thematic analysis technique. Thematic analysis focuses on meaning across the dataset, allowing the researcher to see and make sense of common meanings and experiences (Braun & Clarke, 2012). In the data analysis process of the research, the answers given by the participants to the questions in the questionnaire were coded to reflect the content, and themes were created and listed. A scope was determined by arranging the emerging themes, and the answers given by the baglama teachers were evaluated according to this context and organized in a logical and meaningful integrity. At the reporting stage of the research, the teachers in the study group were defined with codes such as T.1., T.2., ...T.42. In order to ensure the internal reliability (consistency) of the research, the data were analyzed by the researcher, and a mutual decision was reached by taking the opinions of two field expert academicians who were not involved in the research for the accuracy of the findings.

Data Collection Process

Research data were collected by online method. During the data collection phase, the interview questions prepared through Google Forms were sent to the teachers through online data collection. (interview questions are available at https://forms.gle/SKyXfiAQXn68BvvL8). The data of the research were obtained from 42 teachers who continued their baglama lessons in Fine Arts High Schools affiliated to the Ministry of National Education in Turkey and were determined on a voluntary basis. The teachers were informed that participation in the research was optional and the results would be kept confidential.

Findings

The wrong learning behaviors of the students at the bodily posture stage in the baglama teaching process and the teachers' practices to prevent these learning mistakes were examined under five themes. These themes are: "Sitting Mistakes and Solution Suggestions", "Instrument Positioning Mistakes and Solution Suggestions", "Right Hand Positioning Mistakes and Solution Suggestions", "Left Hand Positioning Mistakes and Solution Suggestions" and "Using Apparatus for Bodily Posture".

Theme 1. Sitting Mistakes and Solution Suggestions

Under the theme of "Sitting Mistakes and Solution Suggestions", information about the participant teachers' determinations regarding the students' incorrect learning behaviors at the sitting stage during the bağlama teaching process and their practices to prevent these incorrect learning behaviors are given.

Table 1. Teachers' determinations about students' wrong learning behaviors in the sitting phase

Wrong learning behaviors	f
Inability to sit with the back straight	33
Inability to adjust the span of the legs	23
Inability to properly place feet on the ground	22
Sitting bent over while playing the baglama	2
Inability to correctly position the binding on the knee	2

Table 1 shows that teacher's determinations regarding the wrong learning behaviors of the students in the sitting stage in the Baglama teaching process are as follows; "Inability to sit with the back straight (f=33)", "Inability to adjust the span of the legs (f=23)", "Inability to properly place feet on the ground (f=22)", "Sitting bent over while playing the baglama (f=2)" and "Inability to correctly position the binding on the knee".

Table 2. Teacher practices to prevent students' mislearning behaviors at the sitting stage

Sub Themes	Categories	f
Use of auxiliary tools	Using a mirror while playing an instrument	16
	Use of a footrest	2
	Use of non-slip soles	2
	Watching visuals and videos	1
Bodily posture exercises	Exercises to keep the back straight	26
	Exercises for sitting correctly in the chair	11
	Exercises for shoulders, legs and feet	6
	Exercises for balance position	2
	Drawing a line on the ground and determining where the feet should land	1
Guidance by the teacher	Teacher's demonstration of action as a model	11
	Verbal warning	10
	Making the student self-regulate through self-observation	3

Table 2 shows that the categories under the sub-theme heading "*Using auxiliary tools*" are as follows: "Using a mirror while playing an instrument (f=16)", "Use of a footrest (f=2)", "Use of non-slip soles (f=2)" ve "Watching visuals and videos (f=1)". It is seen that the categories under the sub-theme heading *"Having physical installation"* are as follows: "Exercises to keep the back straight (f=26)", "Exercises for sitting correctly in the chair (f=11)", "Exercises for shoulders, legs and feet (f=6)", "Exercises for balance position (f=2)" and "Drawing a line on the ground and determining where

the feet should land (f=1)". It is seen that the categories under the sub-theme heading "Guidance by the teacher" are as follows: "Teacher's demonstration of action as a model (f=11)", "Verbal warning (f=10)" and "Making the student self-regulate through self-observation (f=3)". Some teachers explain their practices to prevent students' mis-learning behaviors in the sitting stage in the baglama teaching process as follows:

I put a non-slip sole to help the student hold the instrument in their lap. I always advise him to stand upright (T1)

The correct way of holding the bağlama also affects the sitting position of the student. In that sense, I care about the right grip. The use of footrests also positively affects the sitting position of short students (T4).

I am trying to express it mathematically in terms of angles. I want the student to check himself in front of the mirror (T17).

Theme 2. Instrument positioning mistakes and solution suggestions

Under the theme of "Instrument Positioning Mistakes and Solution Suggestions", information about the participant teachers' determinations regarding the students' mislearning behaviors in the stages of positioning the instrument on the knee during the bağlama teaching process and their practices to prevent these mislearning behaviors are given.

Table 3. Teachers' determinations on students' mislearning behaviors at the instrument positioning stage

Wrong learning behaviors	**f**
Turn the baglama upwards to see the strings	34
Slide the lacing outwards over the knee	32
Playing the baglama between two knees	14
Playing the bağlama by tilting it downwards	2
Playing the baglama leaning on the left hand	1
Inability to hold the bağlama fully between the abdomen and the knee	1

As can be seen in Table 3 the teacher's determinations regarding the students' incorrect learning behaviors at the stage of positioning the instrument on the knee in the "Bağlama" teaching process are as follows: "Turn the baglama upwards to see the strings (f=34)", "Slide the lacing outwards over the knee (f=32)", "Playing the baglama between two knees (f=14)", "Playing the bağlama by tilting it downwards (f=2)", "Playing the baglama leaning on the left hand (f=1)" and "Inability to hold the bağlama fully between the abdomen and the knee".

Table 4. Teacher practices to prevent students' incorrect learning behaviors at the stage of positioning the instrument on the knee

Sub Themes	**Categories**	**f**
Use of auxiliary tools	Use of non-slip soles	4
	Watching visuals and videos	1
	Using a mirror while playing an instrument	1
Bodily posture exercises	Right arm balance exercises	6
	Grasping the boat between the right arm and the abdomen	6
	Aligning the middle of the right arm based on the lower threshold	5
	Aligning the right arm, based on the top of the boat of the bağlama	3
	Doing right arm balance exercises using tezene	2
	Making balance exercises by placing the instrument on the knee	1
	Sitting and posture exercises	1
Guidance by the teacher	Verbal warning	4
	Teacher's demonstration of action as a model	4
	Make corrections with physical touches	2
	Have the student self-control through self-observation	1

As can be seen in Table 4, the categories under the sub-theme heading "Use of auxiliary tools" are as follows: "Use of non-slip soles (f=4)", "Watching visuals and videos (f=1)" and "Using a mirror while playing an instrument (f=1)".

It can be seen that the categories under the sub-theme title "*Bodily posture exercises"*are as follows: "Right arm balance exercises (f=6)", "Grasping the boat between the right arm and the abdomen (f=6)", "Aligning the middle of the right

arm based on the lower threshold (f=5)", "Aligning the right arm, based on the top of the boat of the bağlama (f=3)", "Doing right arm balance exercises using tezene (f=2)", "Making balance exercises by placing the instrument on the knee (f=1)" and "Sitting and posture exercises (f=1)". It is seen that the categories under the sub-theme title of "Guidance by the teacher" *are as follows:* "Verbal warning (f=4)", "Teacher's demonstration of action as a model (f=4)", "Make corrections with physical touches (f=2)" and "Have the student self-control through self-observation (f=1)". Some teachers explain the practices of students to prevent wrong learning behaviors during the stage of positioning the instrument on the knee in the baglama teaching process as follows:

> *I want the student to do "gravity and balance" consciousness-reinforcing sitting and posture exercises in order to develop the consciousness that will provide the sitting balance of the body (T3).*
>
> *I tell the student to adjust the point where he puts his arm at the level of the lower threshold. In this way, I observe that the bağlama can reach the correct position on the knee as well (T18).*
>
> *I emphasize that the hand should be able to move freely without bearing the burden of the Bağlama handle in works that require agility (T32)*

Theme 3: Right Hand Positioning Mistakes and Suggestions for Solutions

Under the theme of "Right Hand Positioning Mistakes and Suggestions for Solutions", information about the participant teachers' determinations of the students' incorrect learning behaviors during the baglama teaching process and their practices to prevent these wrong learning behaviors are given.

Table 5. Teachers' determinations on students' incorrect learning behaviors during the positioning of the hand holding the tezene

Wrong learning behaviors	**f**
Positioning the hand holding the "tezene" close to the lower threshold	31
The mistake of moving the hand holding the tezene at the elbow instead of the wrist	31
Inability to position the hand holding the tezene at the appropriate angle to the strings	27
Positioning the hand holding the tezene close to the handle of the instrument	17
Inability to adjust the tezene holding length	2
Inability to hold the tezene correctly between index and thumb	1
Playing with support from the cover of the baglama	1
Excessive contraction	1

Table 5 shows that the teacher's determinations regarding the incorrect learning behaviors of the students in the stage of positioning the hand holding the tezene in the baglama teaching process are as follows: "Positioning the hand holding the tezene close to the lower threshold (f=31)", "The mistake of moving the hand holding the "tezene" at the elbow instead of the wrist (f=31)", "Inability to position the hand holding the tezene at the appropriate angle to the strings (f=27)", "Positioning the hand holding the tezene close to the handle of the instrument (f=17)", "Inability to adjust the tezene holding length (f=2)", "Inability to hold the tezene correctly between index and thumb (f=1)", "Playing with support from the cover of the baglama (f=1)" and "Excessive contraction (f=1)".

Table 6. Teacher practices to prevent students' incorrect learning behaviors at the stage of positioning the hand holding the tezene

Sub-themes	**Categories**	**f**
Use of auxiliary tools	Using a mirror while playing an instrument	2
	Watching visuals and videos	1
	Operating by placing an apparatus on the student's palm	1
Bodily posture exercises	Positioning the hand by alignment	14
	Studies for the student's wrist	6
	Practicing holding the tezene between the thumb and index finger	3
	Practicing with and without tezene	2
Guidance by the teacher	Teacher's demonstration of action as a model	7
	Verbal warning	3

Table 6 shows that the categories under the sub-theme of "Use of auxiliary tools" are as follows: "Using a mirror while playing an instrument (f=2)", "Watching visuals and videos (f=1)" and "Operating by placing an apparatus on the student's palm (f=1)". It is seen that the categories under the sub-theme title of *"Bodily posture exercises"* are as follows: "Positioning the hand by alignment (f=14)", "Studies for the student's wrist (f=6)", "Practicing holding the tezene between the thumb and index finger (f=3)" and "Practicing with and without tezene (f=2)". It is seen that the categories under the sub-theme title of "Guidance by the teacher" are as follows: "Teacher's demonstration of action as a model (f=7)" and "Verbal warning (f=3)". Some teachers explain the practices of students to prevent wrong learning behaviors in the stage of positioning the hand holding the tezene in the baglama teaching process as follows:

> *I make A, B, and C positions on the coverage area of the instrument. C is the point near the lower threshold, B is the middle position, and A is the position close to the combination of the instrument with the neck. I'm getting used to it being in position B at the beginner level (T16).*
>
> *I show the student how to move the wrist, and I constantly follow the movement of the wrist in practice. If there is no improvement, I will do it make the warnings and follow up until it is fixed (T29).*
>
> *TI want the student to straighten the thumb by placing any object in the palm (T31).*

Theme 4. Left Hand Positioning Mistakes and Suggestions for Solutions

Under the theme of "Left Hand Positioning Mistakes and Suggestions for Solutions", information about the participant teachers' determinations of the wrong learning behaviors of the students during the baglama teaching process and their practices to prevent these wrong learning behaviors are given.

Table 7. Teachers' determinations regarding students' incorrect learning behaviors in the stage of positioning the hand on the instrument's fingerboard

Wrong learning behaviors	**f**
Inability to position the palm correctly	34
Inability to position the fingers vertically on the touch	33
Inability to put the finger on the right spot	32
Moving the fingers too far away from the fingerboard	31
Inability to position the wrist and elbow correctly	3
Keeping the thumb parallel to the handle of the instrument	1
Distorting the body shape by raising the arm from the shoulder	1
Grasping the handle of the instrument completely with the palm of the hand	1
Incorrect positioning of fingers due to nail extension habits in female students	1

As can be seen in Table 7, the teacher's determinations regarding the students' incorrect learning behaviors at the stage of positioning the hand on the fingerboard are as follows: "Inability to position the palm correctly (f=34)", "Inability to position the fingers vertically on the touch (f=33)", "Inability to put the finger on the right spot (f=32)", "Moving the fingers too far away from the fingerboard (f=31)", "Inability to position the wrist and elbow correctly (f=3)", "Keeping the thumb parallel to the handle of the instrument (f=1)", "Distorting the body shape by raising the arm from the shoulder (f=1)", "Grasping the handle of the instrument completely with the palm of the hand (f=1)" and "Incorrect positioning of fingers due to nail extension habits in female students (f=1)".

Table 8. Teacher's practices to prevent students' incorrect learning behaviors at the stage of positioning the hand on the fingerboard

Sub-themes	**Categories**	**f**
Use of auxiliary tools	Watching visuals and videos	1
	Making the student work by attaching rubber wires to fingers	1
Bodily posture exercises	Practicing exercises to teach natural grip	13
	Positioning the hand by alignment	13
	Teaching and practicing elbow angle	1
Guidance by the teacher	Verbal warning	11
	Teacher's demonstration of action as a model	8

	Giving examples of positions in other instruments	1
	Creating a study for the fingers to press vertically on the touch	1

As can be seen in Table 8, the categories under the sub-theme heading *"Use of auxiliary tools"* are as follows: "Watching images and videos (f=1)" and "Making the student work by attaching rubber wires to fingers (f=1)". It is seen that the categories under the sub-theme title of "*Bodily posture exercises*" are as follows: "Practicing exercises to teach natural grip (f=13)", "Positioning the hand by alignment (f=13)" and "Teaching and practicing elbow angle (f=1)". It is seen that the categories under the sub-theme title of "*Guidance by the teacher*" are as follows: "Verbal warning (f=11)", "Teacher's demonstration of action as a model (f=8)", "Giving examples of positions in other instruments (f=1)" and "Creating an etude for the student to press fingers vertically on the fingerboard (f=1)".

Some teachers explain the practices of students to prevent wrong learning behaviors during the stage of positioning the hand on the touch in the baglama teaching process as follows:

I get the fingers to stand upright on the touch and to press with the tips of the fingers (T13).

I am trying to correct the student's technique by giving an example through the free posture of the hand. I tell students to keep their fingers close to the fret and press straight (T27).

I give examples from the positions on the violin or viola instruments and explain the logic of the position. I let the students release the hand downwards and hold the handle of the instrument without breaking it, and repeat it (T36).

Theme 5. Use of apparatus for bodily posture

Under the theme of "Use of apparatus for bodily posture", information on whether the participant teachers used apparatus to help students gain bodily posture skills in the Bağlama teaching process and what kind of apparatus they used was given.

Table 9. Teachers' use of any auxiliary apparatus to eliminate the problems they identified in students' bodily postures during the Bağlama teaching process

Apparatus usage status	Type and function of apparatus used	f
Using apparatus	Use of anti-slip carpet between the knee and the body to prevent the body of the instrument from slipping	6
	Use of footrests to ensure correct sitting	4
	Use of rubber wires to prevent fingers from moving away from fingerboard	1
No apparatus use	Apparatus not in use	36

Table 9 shows that some of the teachers (f=11) used auxiliary apparatus to eliminate the problems they identified in the bodli postures of the students during the "Bağlama" teaching process, while some of them (f=36) did not use any auxiliary apparatus. The auxiliary apparatus used by the teachers were as follows: "Use of carpet anti-slip between the knee and the boat to prevent the boat from slipping (f=6)", "Use of footrest to ensure correct sitting (f=4)" and "The use of rubber strings to prevent the fingers from moving away from the fingerboard (f=1)". Some teachers explained their use of auxiliary apparatus to overcome the problems they identified in students' bodily postures during the Bağlama teaching process as follows:

For some students, I put the piece called "carpet non-slip" on the knee so that the Bağlama does not slip off the knee (T13).

Yes, from time to time I tie the 3rd and 4th finger together with a rubber band (no longer than 15 minutes) (T22).

I use a footrest (T29).

Conclusion and Discussion

According to the research data obtained based on the opinions of the participant teachers, it was concluded that students had various problems at the bodily posture stage during the Bağlama teaching process. These problems are as follows: sitting, positioning the instrument on the knee, not being able to position the hand holding the tezene and not being

able to position the hand on the key. It was concluded that the teacher's practices to overcome these problems were "Use of auxiliary tools", "Bodily posture exercises" and "Guidance by the teacher".

Among the categories analyzed under the sub-theme of "Using auxiliary tools" within the teacher practices, it was determined that visuals and videos were used in addition to the use of mirrors. van der Linden et al. (2009) state that a mirror is used for students who are new to violin performance to monitor their own movements and postures during the bodily posture stage. This situation is consistent with teacher practices. Ozbek and Tunca (2022) examined the effect of photographs in cello methods used in the beginning stage on the learning process. In their research, they concluded that the students in the experimental group observed their bodies through the photographs and realized permanent learning by experiencing the correct playing positions by applying the posture-gesture positioning in the photographs. This result is consistent with the teachers' practices of "Showing visuals and videos". The categories analyzed under the sub-theme of "Guidance by the teacher" within the practices include "Teacher demonstrating the action as a model", "Verbal warning" and "Making corrections with physical touches". van der Linden et al. (2009) state that the way for violin students to achieve correct bodily posture is by observing their teachers and trying to imitate their movements, as well as receiving verbal feedback from their teachers. These practices are consistent with the practices of the teachers in this study, namely "Verbal warnings" and "Tthe teacher demonstrating the action as a model". van der Linden et al. (2009) note that sometimes a teacher can touch students to make them feel how to move their arms or hold their instruments, but this method can be uncomfortable for students and is therefore not highly recommended. In this context, a solution to the problem can be sought with concrete explanations instead of "making corrections with physical touches" which is among the teacher practices.

Akcay and Duzak (2021) state that instrument performers may be vulnerable to injury that may result from incorrect physical posture while developing new skills for the instrument or repeating a previously learned skill, and may experience various injuries due to this situation. In their study, Satici et al. (2019) concluded that students and lecturers in the field of music education experience bodily discomfort in the back, waist and neck, and that they do not have information about the possible discomforts that may occur due to instrument vocalization. These injuries, which are described as musculoskeletal problems, are caused by anatomical and postural effects, the suitability of the instrument for use, the dimensions of the instrument's technique and the anxiety of the musicians (Steinmetz et al. 2008). Musicians need to demonstrate various behaviors before and after bodily posture exercises in order to avoid possible musculoskeletal problems that may arise based on bodily posture. Before practicing bodily posture, musicians should pay attention to their nutrition and sleep patterns as well as doing exercises that will keep them physically fit. In the bodily posture stage, they need to demonstrate behaviors that include exercises that ensure bodily adaptation to the physical characteristics of the instrument. Onder (2021) states that various studies are recommended in the literature to prepare certain parts of the body for instrument vocalization before bodily posture, and that these studies should be organized without and with the instrument. It is stated that warm-up movements without an instrument include walking, jogging at a slow pace, climbing stairs, turning the wrists around and dancing. These studies are similar to the studies of an athlete in this respect. Regarding this issue, Cox (2009) states that musicians, like athletes, should exercise regularly, strengthen their bodies, gain agility, eat and sleep regularly; Elbaum (1986) states that musicians' motor skills should be at the level of an athlete while practicing. In the stage of warming up with the instrument, Onder (2021) states that in addition to providing blood flow to the necessary areas and warming up the muscles, it is necessary to make soft movements using long sounds at a slow tempo.

In the twentieth century different methods of correct bodily posture have emerged. According to Uyar (2017), the most widely used of these methods by musicians is the Alexander technique. Alexander realized that he had various problems while practicing the instrument and thought that the problems he was experiencing might be due to his inability to perform the bodily posture correctly. To detect these problems, Alexander worked in front of mirrors and observed that he tilted his head and neck forward or backward and tightened his neck muscles (Craze, 2011). Chien (2007) states that the guidance in the Alexander technique is related to the relationship between the head, neck and back, and that the commands to be given during the guidance create a good bodily posture. Yildiz (2018) states that according

to the Alexander technique, the instructions in the bodily posture phase should be perceived mentally and it is important to perform these instructions later. According to Yildiz (2018), the directions made without being perceived mentally cause a tension, and in order to prevent this tension, the directions should be thought before they are made and performed slowly. Learning the correct posture positions, strengthening the muscle groups that will be used the most according to the instrument, increasing endurance, providing sufficient flexibility in the necessary muscles, tendons and ligaments are the most important steps in preventing these problems (Onder, 2021). Sogukcam (2007), on the other hand, states that in the physical posture stage of the instrument vocalization process, physical posture mistakes can be prevented by doing the sitting-posture and grip positioning in front of the mirror, by making a video recording and allowing the person to see self or by constantly checking with the help of peer criticism. Yagisan (2004), on the other hand, states that physiotherapy is one of the most frequently used methods that gives positive results in problems related to instrument performance based on bodily posture at the beginning stage, and emphasizes that many physiotherapists in the world have branched out by developing methods for diagnosis and treatment according to instruments.

Oguz et al. (2021) stated in their study that all of the teachers who participated in the research emphasized that bow grip and posture training has a very important place in instrument teaching. Dikici (2014) concluded in his study that all of the students in the participant group had the opinion that correct posture in instrument vocalization solved the intonation problem. Gercek (2010) states that in the oud methods that he analyzed by comparing them in terms of teaching content, there are findings that incorrect posture, posture and sitting are physically uncomfortable and have an inhibiting effect on achieving the necessary performance in instrument vocalization. Cakirer and Kinik (2014) state that Bağlama instructors attach great importance to the behaviors related to posture and sitting, that these behaviors directly affect the future stages of the Bağlama vocalization process, and that the problems in this regard should be solved within the scope of initial training. In order to avoid problems based on bodily posture in the instrument vocalization process, it is important to perform correct bodily posture studies both at the beginning and at later stages.

Limitations of the Study and Suggestions for Future Studies

The results of this study should be evaluated within the scope of some limitations. The first limitation is that the bodily posture problems of beginning high school students were examined in the study. It may be recommended to examine the problems of bodily posture at the beginning level not only for high school students but also for students who have just started to perform Bağlama at primary, secondary and undergraduate levels. Since the research data are evaluated descriptively, the "cause-effect" relationship cannot be explained. It may be recommended to conduct studies that can reveal what the causes of bodily posture mistakes are. The second limitation is that the data in this study were collected based on the opinions of high school teachers. The determinations regarding the bodily posture mistakes can be further generalized based on the opinions of teachers who teach Bağlama at primary, secondary and undergraduate levels. In addition, studies can be conducted to determine the views of students, who are the most important stakeholders of teaching.

Statements of Publication Ethics

The permission of the research was obtained from Atatürk University Scientific Research and Publication Ethics Committee (Document dated 30.12.2022 and numbered E-29202147-101.02.02-2200438345).

Acknowledgment

I would like to thank the teachers of individual instrument music in the study group who supported this research with their experiences and opinions.

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ISSN: 2149-360X