Formation of singing skills of future music teachers through digital resources

Shynybaev Serikbol*, Faculty of Pedagogy and Psychology, Zhetysu University named after I. Zhansugirova. 040009, Taldykorgan 187a Zhansugurov str., Kazakhstan https://orcid.org/0000-0001-8688-5206

Kazhimova Karylgash, Pedagogical Faculty, Department of Pedagogy and Psychology educational program: «Pedagogy and Psychology », West Kazakhstan University named after M. Utemisov, 090000, N. Nazarbayev Avenue 137, Uralsk, Kazakhstan. https://orcid.org/0000-0001-6486-421X

Akparova Zhanna , Department of Education and Science quality assurance committee and department of Preschool and School education at "Bolashaq" academy. Qaraghandy, Kazakhstan, https://orcid.org/0000-0001-7301-2756

Urazaliyeva Moldir, Kazakh National Women's Pedagogical University, Department of the Music, Kazakhstan https://orcid.org/0000-0003-1729-0051

Taubaldieva Zhumatay, Candidate of pedagogical sciences, Zhetysu University named after I. Zhansugurov, 040009, 040009, Taldykorgan 187a Zhansugurov str., Kazakhstan https://orcid.org/0000-0003-4587-8282

Abstract

The purpose of this study is to investigate the determination of the formation of singing skills of future music teachers through digital resources. The quantitative research method was used in the study, and the research was conducted in the fall semester of 2021–2022. 376 volunteer music teachers who continue their studies in Kazakhstan participated in the study. In the study, 4 weeks of online training was provided to music teachers. In the study, the 'digital music platform' measurement tool developed by the researchers and compiled by experts in the field was used. The measurement tool was delivered and collected by the online method of music teachers. The analysis of the data was carried out using the SPSS programme; frequency analysis was carried out using the *t*-test; and the results obtained were added to the study accompanied by tables. According to the survey results, in live lessons, music teachers use the songs with the formation and this takes place where digital content is also very low. In the event of very frequent use, it was seen that by projecting courses in distance education systems the music rates are quite high.

Keywords: Music Teachers, Digital Content, Live Lesson, Teachers of the Future;

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* Address of correspondence: **Shynybaev Serikbol*** , Faculty of Pedagogy and Psychology, Zhetysu University named after I. Zhansugirova. 040009, Taldykorgan 187a Zhansugurov str., Kazakhstan
Email address: Serikbol_shynybaev@mail.ru

1. Introduction

Today's societies live their lives at a time when life is experiencing a rapid pace under the influence of development and change. This change and development makes it necessary to have various competencies with it. It is expected that individuals will develop some technical, cognitive and social abilities in order to perform tasks in digital environments (Varol, 2021, p. 21). Among the abilities that we ask decenturists to develop are the expected characteristics. Among the characteristics that are required to be literate, technology-following individuals who are lifelong learners, research, analyse and reach results by making evaluations in accordance with these analyses are (Mohadesi, 2021) analysis of information and understanding of the given message, which is important in media tools. Media and digital technologies are major factors in shaping societies. We encounter a lot of positive and negative media messages through devices or television that we are connected to via the Internet (Monica Cristina Garbin et al., 2021). In this direction, it is possible to make maximum use of the positive sides of the media by minimising the negative effects of the media by acquiring media literacy skills. Family and school play a crucial role in the acquisition of these competencies. Teachers should be able to integrate the building blocks of media literacy education into the course content; district-level organisations should be planned; and support should be obtained from media and technology organisations, if necessary (Campina et al., 2021). Having individuals who can access information, produce new information, use it and analyse it are some of the qualifications required for information literacy. It is possible for all this to happen with digitally literate individuals. Digital literacy is a continuous learning through technology in today's information age and it is one of the competencies that individuals who are in a state of discovery should have in order to make their learning more effective (Alexandru et al., 2021).

Music Education

Music education is the process of ensuring the development of musical behaviour in an individual by imparting a certain musical behaviour, changing a certain musical behaviour and/or creating a certain change in musical behaviour (Kratus, 2021). In addition, music education should be able to diversify the musical perception abilities of students by differentiating them, freeing the student from some conditions and directing them to make and listen to multi-sided music platforms. When the mentioned definitions are examined, it can be noticed that behaviour change is also brought along with cognitive development in music education (Savage, 2021). For this reason, music education can be considered as one of the disciplines that has application in its content. The fact that music education is an applied discipline brings with it a master–apprentice-related work order (Bresler, 2021). At this point, it is extremely important for the instructor to closely monitor the behaviour change in the learner for the healthy functioning of the music education (instrument teaching) process.

Digital content

It is not possible for the printed materials used today in learning and teaching activities to adequately meet the learning needs of our age in school, classroom and out-of-class environments that are a physical environment. These materials should be prepared by evolving, using digital content and technologies, and used in classroom activities (Grosseck et al., 2016). Teachers who are field practitioners of education should translate their educational activities into environments based on design thinking, inquiry and conceptual learning, which are acceptable ways for group work or individual work in a formal manner. The digital materials used in the training will acquire the appearance of a tool to be used in these environments. It is assumed that equipping the learning

environment with technological tools and activities and projects appropriate for the technical literacy levels of the students will contribute to the success and motivation of the students (Mathew et al., 2021).

1.1. Related Studies

Nurgayanova et al. (2019) in the year of the work they have carried out in the music of the future examined the use of technology in national vocal traditions in the process of learning, since Moodle tutoring environments are created and in the live environment. As a result, the seamless communication through vocal teachers of the art through the interaction of different people in Moodle learned they have concluded that, in this context, the future position with the help of digital resources for music teachers is important because it can be argued based on research that it is of benefit.

Shi's (2021) study in the year of the work carried out to modernise and improve vocal music education aims to develop mastery in basic skills intended for the exploration of technological solutions. As a result, the introduction of mobile applications in accordance with the educational needs of the digital generation and vocal training support model, vocal music education masters in education opportunities for the development of technological and pedagogical methods have found that by combining digital. From the above, it is seen that positive interviews are experienced when the studies in the field of music are supported by technology. In this context, it can be said that it is better with technology in the field of music.

Wen's (2021) study aimed to investigate creative thinking in future music teachers, develop educational training aimed at developing creative thinking in music students with technology and examine the indicators of creative thinking before and after education. Among the results of the research, it was concluded that the musical effectiveness of the developed teaching methodology increased in 55 participants' creative thinking level. In this context, it is considered the most important factor that research increases creative thinking with the help of technology. The creation of songs for creative thinking by music teachers is also constantly updated and renewed with the help of technology. In this context, it can be said in the related research section.

It seems that music teachers provide education to a better point with technology, and so it can be said that it is better with the help of technology. While it is seen that such research benefits the field paper, it can be said based on the relevant research that the problem situation of the research should be given more to the field.

1.2. Purpose of the Study

The aim of this study is to investigate the determination of the formation of singing skills of future music teachers through digital resources. The answers to the following questions were sought for the general purpose of the study:
1. What is the usage time of digital resources applications of music teachers?
2. What is the time of music teachers to study singing with technology like?
3. What is the purpose of using technology for singing skills of music teachers?
4. Is there a difference between digital and music views of music teachers according to the gender variable?
5. Is there a difference between digital and music views according to the gender variable of music teachers?
6. What are the opinions of music teachers about digital and music environment?

2. Method

In this section, information about which method was used in the study, which groups of students participated in the study, the type and source of the data in the study, the data collection tool and the statistics used in the study are included and organised.

2.1. Research Model

In the study, one of the research methods, quantitative research method was used. The type of research that objectifies events and phenomena that exceed them makes them observable and which are measured and expressed numerically is called a quantitative research method (Chowdhury, 2021). In this research, through the quantitative research method and by determining the formation of the singing skills of future music teachers through digital resources, gender, age and duration of education are described.

2.2. Working Group/Participants

The participating group included in the study consisted of 376 volunteer music teachers who are continuing their studies in various schools in Kazakhstan. In the research, the measurement tool was applied to the students with the help of an online questionnaire and was sent to music teachers via the Internet and accepted.

Gender
In this section, the differences of music teachers according to their gender are given in Table 1.
Table 1. Distribution of Music teachers according to the Gender Variable

Gender	Boy		Girl	
	F	%	F	%
Variable	192	51.06	184	48.94

When Table 1 is considered, the distributions of the music teachers participating in the study are determined according to the gender variable and the information is examined and presented. In this context, it is seen that 51.06% (192 people) were male music teachers, while 48.94% (184 people) were female music teachers. In the gender section, the findings reflect the actual gender distribution.

Music Teachers' Digital Resources Applications Usage Times
In this section, the usage times of digital resources for music teachers to create songs in digital resources are discussed and examined, and the studied values are digitised and presented in Table 2.
Table 2. The Distribution of Music Teachers' Digital Resources Regarding the Application Usage Times

Digital Resources Applications	1-3 Time		4-6 Time		7 or more hours	
	F	%	F	%	F	%
Variable	69	18.35	120	31.91	187	49.74

In this context, when Table 2 is examined, 18.35% (69 people) said that they used applications for 1–3 hours, 31.91% (120 people) said that they used applications in the range of 4–6 hours and finally 49.74% (187 people) said that they used technology for 7 hours and above. In this context, it is

seen that music teachers prefer digital applications in the range of 7 hours and above in order to help in song creation within the research.

Music teachers' song study time with technology

In this section, the working time of music teachers with technology and their situations on a daily basis are investigated and examined. Detailed information is given in Table 3.

Table 3. Music teachers' song study time with technology

Song working times with technology	1-3 Time		4-6 Time		7 or more hours	
	F	%	F	%	F	%
Variable	57	15.15	101	26.86	218	57.99

Table 3 shows the study of singing with the music teacher technology and the cases. Detailed information is given in Table 3. In this context, 15.15% (57 people) expressed the song with technology as 1–3 hours, 26.86% (101 people) stated that technology is in the range of 3–4 hours and finally 57.99% (218 persons) stated 7 hours and above of trying to sing with the technology. In this context, it is seen that they study songs with technology within the research and that music teachers prefer to work for 7 hours or more.

Age Status

In this section, the age information of the music teachers of the study group is examined and detailed information is given in Table 4.

Table 4. Distribution of Music Teachers According to their Age Status

Age	24-28		29-33		34 and above	
	F	%	F	%	F	%
Variable	146	38.83	170	45.12	60	15.96

When Table 4 is examined, the distribution of the music teachers of the study group according to their age status is considered and the relevant information according to the age scale is added to the table. In this context, 38.83% (146 people) appeared in the age range of 24–28, 45.12% (170 people) were in the age range of 29–33 and 15.96% (60 people) were aged 34 and above. In the age distributions section, the findings reflect the actual distribution.

2.3. Data Collection Tools

In this section, it is seen that there is a measurement tool developed by the creators of the problem sentence in the research within the research. As for the data collection tool, this area of music and digital resources has also been examined by experts and items that may not be suitable have been removed from the study and corrected. A personal information form called the 'Digital Music Platform' measurement tool was used, which was applied to music teachers and developed by researchers. The validity of the scope of the measurement tool developed was examined by four professors and two associate professors, who were working on song creation and digital platforms,

and resources, and unnecessary items have been removed from the measurement tool and rearrangements have been made.

1.	Personal information form (demographic data): In the personal information form, information such as gender, digital resource usage times, time periods spent in song formation and age is provided.

2.	Digital music platform: A 5-point Likert-type questionnaire has been prepared to obtain information about the creation of song creation skills of music teachers with the help of technology. A total of 18 items of the measurement tool consisting of 20 items were used and 2 items were removed from the measurement tool, thanks to expert opinion. The opinions of music teachers from two factorial dimensions, such as 'digital resources' and 'song creation' of music teachers, were applied. Cronbach's alpha reliability coefficient of the measurement tool as a whole was calculated as 0.94. The measuring tool was rated as 'I strongly disagree' (1), 'I disagree' (2), 'I am undecided' (3), 'I agree' (4) and 'I definitely agree' (5). The measurement tool was also collected online from music teachers with the help of families.

2.4. Application

The application part of the study by the researchers in ongoing volunteer work in schools designated 376 music teachers from the Kazakhstan region with the help of Zoom. The programme was conducted with planlatilm live events, live lessons on song creation with the help of technology tools, applications, programmes, information such as the conditions of use of the programme and this training was prepared with the focus and the zoom event is organised by people who are experts in the field of the environment showing, when the activity part of the research is over, it was planned to show videos, application movements, sheet music and content for education about technology integration and song creation applications to music teachers. Song creation and digital resources were sent to music teachers and they were expected to be used regularly. The 3 weeks merged the concepts of digital resources for music teachers and song creation in education conditions. The terms of use and various techniques of learning were memory techniques and applications in determining how often and of course the use the live lessons 'digital resources', song 'creating' etc.' such information was provided to music teachers in the form of live lesson training, and music teachers were expected to participate in the event held every week on this topic. After 4 weeks of training, the measurement tool and the information form were applied to the music teachers with the help of an online questionnaire, and the data are given in the form of tables in the findings section. Parents of the students were asked to help with the online survey. In Section 4, the application programme used by most universities and designated education distributed through zoom each section is set to be distributed to the music teachers to be limited to a maximum of 65 weeks, 45 minutes each training programme training and 15 minutes of questions and answers, with a total time of 60 minute in the time frame that has been processed in the form of online education. Smartphone, tablet and laptop image by using devices such as computers were expected to attend training with microphone, the measurement tool applied to music teachers was collected through an online questionnaire and was transferred to the SPSS programme by coding them in the environment of calculation programmes.

2.5. Analysis of the Data

In this section, statistical data obtained from university students are analysed in the statistics programme using frequency (f), percentage (%), mean (M), standard deviation (SS) and *t*-test, with

IRAI. The data obtained from the programme are given in tables accompanied by numerical values, findings and comments.

3. Findings

In this section, findings about the formation of singing skills of music teachers through digital resources are given, and each data of the research is given in the form of tables accompanied by comments.

3.1 Purpose of using technology for singing skills of music teachers

In order to develop the song creation skills of music teachers, the purposes of using technology have been investigated and detailed information has been given in Table 5.

Table 5. The purpose of using technology for singing skills of music teachers

Department	Digital Resources		Song creation programmes		Other	
	F	%	F	%	F	%
Variable	138	36.70	221	58.78	17	4.52

When Table 5 is examined, the purposes of using technology for music teachers' singing skills are investigated according to the problem of the study and it is seen that the relevant information is added in the table. In this context, 36.70% (138 people) chose digital resources, 58.78% (221 people) chose song creation programmes and finally 4.52% (17 people) chose the other field. It can be said based on Table 5 that according to the problem situation of the research, most of the segments turned to problem situation song creation programmes and created songs using these applications with the help of technology based on the problem situation.

3.2 Digital resources and music opinions of music teachers according to the gender variable

In this section, the data obtained from the study and the digital and music opinions of music teachers according to the gender variable are made according to the gender variable and detailed information is given in Table 6.

Table 6. Digital resources and music opinions of music teachers according to gender variable

Digital Source and Music Insights	Gender	N	*M*	SD	Df	t	p
	Male	192	4.39	0.41	376	-5.321	.000
	Female	184	3.63	0.74			

When Table 6 is examined, it shows that there was a significant difference between the opinions of music teachers on digital resources and song creation according to the gender variable and it was found that there was a significant difference according to the research [t376]= 0.000 p<.05]. When the music opinions of music teachers about creating digital resources and songs were examined, it was seen that male teachers had an average score (M=4.39) in this field, while female teachers had an average score (M=3.63) in terms of digital resources and music opinions. In this context, it can be said that there is a significant difference between the views of male music teachers on digital resources and music compared to female students in this study, as well as the findings of the study, it can be said that their scores on the problem situation are high.

3.3 Opinions of music teachers about the digital and music environment

In this section, the opinions of music teachers about their views on digital and music environment are included. As a result of the findings, the values were digitised and added to Table 7 in detail.

Table 7. Opinions of music teachers about the digital and music environment

No	Opinions of music teachers about the digital and music environment	M	S
1	As a music teacher, I consider every instrument as a technology instrument	4.48	0.55
2	Creating music gives me pleasure thanks to technology	4.46	0.63
3	I can use digital resources anywhere and at any time	4.43	0.59
4	I find it fun and easy to create songs from digital sources	4.41	0.63
5	I don't understand how time passes when creating songs with digital resources	4.34	0.61
6	When I create songs with digital resources, I know how to solve them when I have problems	4.46	0.63
7	The moment I create a song with digital resources, the sound that comes out of the programme always makes me happy	4.41	0.63
8	I can adjust the music volume using technology when creating a song	4.36	0.69
9	I consider digital resources to be an advantage for the music environment and use them	4.41	0.60
10	Giving music lessons to my students with a digital resource makes me always ahead in the field	4.39	0.73
11	As a music teacher, my participation in such events makes me a better music teacher	4.29	0.74
12	The fact that I showed my students in my music class how to create songs with digital resources shows that I will make better quality music.	4.41	0.66
13	I want music teachers to always use digital resources and I act accordingly	4.41	0.59
14	I would like to think that music teachers should be given ijital resources in their education at the very beginning	4.60	0.54
15	I believe that digital resources provide services for every field, not for music teachers	4.43	0.63
16	As a music teacher, I am not worried about the future with digital resources	4.53	0.55
17	I always believe that music teachers can create high-quality, powerful and beloved songs with digital resources.	4.41	0.59
18	I would like music teachers to create songs using digital resources when creating	4.56	0.50
	Overall Average	4.43	0.61

Table 7 shows their views in relation to the digital environment of a music teacher. It is seen that the training of music teachers after each answer carries a different meaning, and when combined with the views of the environment concerning the creation of digital music the song is high and the gains of the students creating a song can be said to occur with the digital sources mentioned in Table 7. The most obvious expression of the research is 'digital resources for music teachers in the education to be given in the beginning of I think that' (M=4.60). In addition, it was found that one of the most obvious expressions of the research was 'I have no future anxiety with digital resources as a music teacher' (M=4.53). Digital resources for music teachers and song building are other findings that are quite high. When relating to their views on 'digital resources for music teachers who want to benefit at all times from and I'll act accordingly' and 'always with quality resources digital music teachers, I believe you can create a powerful and popular song' (M=4.41) were reached. Other findings of the study were 'When I create songs with digital resources, I know how to solve them when I have problems' (M=4.46) and 'I can adjust the sound of music using technology when creating songs' (M=4.36). In addition, another value of the research was 'I would like music teachers to create digital resources when creating songs' (M = 4.56). Finally, when considering the overall average, it seems that the finding was M = 4.43.

Table 7 shows that with the digital resources for music teachers and song creation from any application they enjoyed the technology they learn with every other word they know, they learned a song and easily you can create what you said with the practices, technology, coupled with the song from the sound that they can easily use these applications with the applications that they can easily provide education future students and they want to take full advantage of other sources, which are

positive and powerful results. In this context, it can be said based on the findings that the opinions of music teachers about digital resource and song creation values are positive because all the values in Table 7 have a positive meaning.

4. Discussion

Karkin et al. (2020) in the year of the work they carried out for music education pedagogy in higher education intended to introduce the possibilities of Moodle-based online learning, and as a result, it is made with Moodle after enabling the creative potential of music education for self-managing the learning process acquired. As a result, it has been seen as insane, in this context, when the results of the research are considered. It is seen that the song creation of music teachers increases with digital resources and a new order is formed for the students of the future. In addition, it is believed that the fact that music teachers teach and provide such education with digital resources always has the same meaning as it can get a better education for students in the next generation.

Chen (2020) studied the service ability and teaching management ability of teachers. Acceleration of the development of information technology is intended to accelerate the pace of the teaching of music, and as a result, business education and computer multimedia, computer multimedia and in the optimisation of the values of a music teacher and the students in the class reached a conclusion that gives a more healthy development of education. In this context, this value when combined with the results of the research, the education of the students in the class is better with the resources of digital music. Also, it can be said that the use of digital resources in research will always lead to quality education.

Savchenko-Shlapak et al. (2021) in the work carried out by the students of the higher education institutions in the year of the musical and pedagogical technology as a means of developing their performance skills with a profile of the organisation and functioning of a vocal community has attempted to address the problem, and as a result the vocal community organisation, the needs of the community in the realisation of creative technology with a vocal that lead to functioning as a team they achieved. When this value is combined with the results of the research, it has been concluded that the benefits of technology and the music teachers of the future transfer musical education to their students using digital resources. In this context, it can be said that song formation benefits future teachers and their students.

In this context, when the research is considered, it is seen that the creation of digital resources, information technologies, communication resources and technological infrastructure benefits music teachers and students. While it is seen that the research contributes to the field writing, it is expected that this research will benefit the future research. It is thought that the teachers of the future will provide education based on the technology base, which will make sense with the students of the future.

5. Conclusion

Partial results of the research are discussed. It is seen that when the number of the first person, according to the status of the research problem and problem and provide benefits to both increasing the number of persons is a type of advantage. In this context, it is concluded that 376 research participants participated in the study and volunteered as music teachers who continue to work in various schools in Kazakhstan. Another value of the research that has been examined is the time of use of digital applications of music teachers, in light of detailed information. It has been

concluded that music teachers use for 7 hours and above and prefer it. It is thought that music teachers' use of digital applications at such a time in their song formation will always take them one step forward. Another value in the research is that music teachers studied the working and singing situations with technology, and as a result, the results were reached that they worked with technology for a maximum of 7 hours and above. This result combines with another result and connects music teachers with each other music using digital resources is essential in this context where they create songs. Another result of the research is that the distribution of music teachers according to their age status was examined and the age scale was investigated. In this context, it is shown in Table 4 that 146 persons were in the age range 24–28, 170 people were in the age range of 29–33 and 60 people were aged 34 and above. In this context, it has also been concluded that future teachers in the research are young.

It is both known and seen that music teachers always receive help and encouragement from technological elements in creating songs. In this context, the aim of using technology for the singing skills of music teachers was investigated according to the problem of the study, and as a result, it was concluded that they use song creation programmes. In this context, it can also be said that according to the problem situation of the research, most of the segments turned to problem situation with song creation programmes and it was concluded that they created songs using these applications with the help of technology. Another result of the research was examined and it showed that there is a significant difference between the views of music teachers on digital resources and song creation according to the gender variable, and as a result, it was concluded that there is a significant difference when creating digital resources for music teachers and song music. When examining the results, an average of points relating to this area of the male teachers and female teachers regarding their opinions of the load by an average of points and a digital music source that also has male teachers than female students and a digital music source that there was also a significant difference between the views of a state in relation to the problem of high scores in the results section of the study it can be argued. The research concerning the final result of which is a music teacher and music are the opinions of the digital environment were examined and as a result, although it carries a different meaning, after each answer concerning the training of teachers of music and digital music combined with the creation of the environment concluded that the song is higher when the views are also given in the beginning of digital resources in education as a music teacher that they think we can live without fear of the future with digital sources as a music teacher, a music teacher they want to benefit from digital sources at all times, with digital resources for music teachers always quality, when I created a song with powerful and popular digital resources that they can create songs, what they will do when they have a problem, they can easily create a song they have learned and what they said with the applications, technology, coupled with the song from the sound that they can easily use these applications with the applications that they can easily provide education future students, music teachers as they want to take full advantage of other sources, it is seen that positive and powerful results. In this context, it can be said that the final result of the research is based on the results that the opinions of music teachers about technology and song creation are positive because all values have a positive meaning.

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