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Examination of the researches on the use of technology by fine arts teachers

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Abstract

The aim of this study was to determine the examination of the researches about the use of technology by fine arts teachers. The study was conducted according to the content and citation analysis model. In this context, Web of Science (WOS) Core Collection indexes were included. In the document scanning in the WOS environment, the keywords 'Fine arts', 'Teachers' and 'Technology' were searched. In total, 169 documents were examined and analysed one by one. They were analysed according to year, document type, WOS content category, country, source title, organisation and citation, authors, publication language and categories. As a result of this research, the first study was conducted in 2004, while the most studies were conducted in 2016. It was concluded that the published studies had the most Proceedings papers as the document type. The area where the studies of fine arts teachers on the use of technology are mostly carried out is Education Educational Research, according to the Web of Science content category. The most researched title in the distribution according to the Source Title field is 'International Multidisciplinary Scientific Conferences on Social Sciences and Arts.' The university with the most studies is Kazan Federal University. The 19 authors who conducted the studies have a large number of studies in this field. It was concluded that other authors had only one study in the field. Again, when we look at the distribution of the countries and documents according to the language of writing, the country with the most studies is China and the language of the documents is English. The area continues to evolve.

Keywords: Fine arts, technology, analysis, teachers, education, communication.

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1. Introduction

We are in the 21st century technology age. With the rapid development of technology, it has been used in all areas of our lives. Technology has been among the methods used in the education and training fields. With the development of technology in all areas of daily life, it has been changing in art, which is fed by individual and social perceptions. Technological development has also taken place in art. In the field of digital culture and digital art, not only materials, tools or techniques, but also the change in perception is emphasised (Calikoglu, 2005; Bagila, Kok, Zhumabaeva, Suleimenova, Riskulbekova & Uaidullakyzy, 2019; Mendez, Mendez & Anguita, 2020). Among the advantages of technology, all kinds of information can be accessed with a single click and in a very short time. In the 21st century, which is dominated by the knowledge and technologies, developments in computer and communication technology have affected education positively and in many different ways. The structuring of the information age we live in has also led to the development of new professions and interdisciplinary interactive areas of different expertise. In parallel with these developments, the education curriculum has also changed and this dizzying development, which continues at full speed, has led to the emergence of many new professions and expertise areas. Of course, naturally, educational technologies have started to change continuously (Avci, 2015; Bakhmat, Liubarets, Bilynska, Ridei & Anhelina, 2020; Dolunay, 2016; Dagyar, Kasalak & Sezgin, 2020).

When looking at art education, students who study in the qualified arts programme expand their perceptual, interpretive and analytical abilities. They learn to find meaning with visual images and learn to determine the aesthetic quality of works of art. Because they use the language of the visual arts correctly, they express their ideas completely and develop their abilities to reach and defend aesthetic judgements. In the qualified arts programme, students understand the broad cultural structure that their own culture constitutes and become more sensitive to this structure (Boydas, 2004; Ozkaplan, 2009). Today, art and technology are combined. Today's visual communication designs not only serve the emerging new sectors and professions, but have also become an important part of education. With the inclusion of technology in education, they have taken their place with technological learning tools. Students have started to carry their tablet computers in their bags, as well as textbooks. A very important project campaign supported by TUBITAK has been initiated to restructure education in our country with electronic means. However, this great project, launched as the FATIH project, especially for the re-preparation of course materials with the support of three-dimensional animated narration, has not been completed in the expected time and the targeted result has not been achieved.

The old method is still used in the field of art today. The artist makes the order and gets it back. This patronage system is still valid in painting, music, literature and other branches of art. But the differences arising from the unique characteristics of the arts are also reflected in their markets. This situation has created complex schemes. There are also negative benefits brought about by technology in the field of art. Thanks to technology, sharing and reproducing information has increased considerably, such as accessing any information. This created a problem regarding the ownership of the works of the artists, namely copyrights. In other words, in an environment that can be reproduced with technology, the artwork can be reproduced without permission from the producer. For example, a literary work can be published by publishers other than the artist's publisher. For such reasons, the concept of copyright has been developed. Creativity comes to mind when the artist is mentioned. However, after a point, our artists produce according to the increasing demand. Capitalism has been developing for centuries and the dominance of the market is increasing. This increasing domination affects cultural production. According to Williams (1993), 'It would not be wrong to say that the source of the difficulties in the place of cultural production in modern societies is in fact the market economy, and it would not be wrong to say that the general market order transforms all cultural production into a market-commodity type of production, referring to the testimony of the efforts to discriminate'. However, cultural production relationships have adapted to the developing market conditions and have been absorbed in market conditions. But there are exceptions. In other words,

there are those who are not absorbed in these conditions. And the condition for these to be defended is that they are 'within and for themselves'. What makes the work of art privileged from production is the specialisation in 'creative activities' (Dolunay, 2016).

With the development of technologies, people have gained the behaviour of using their senses while using different techniques. The digital technology revolution is exposing higher education to an increasing array of opportunities, the skills and knowledge of both students and instructors (Sandu, Gide & Karim, 2020). At the same time, both students and educators to solve many problems in teaching and research, this affects a number of scholarships and in turn functions are affected by the level of technology adoption, adoption behaviour and teachers' commuting (Maldonado, Khan, Moon & Rho, 2011; Weller & Anderson, 2013). The same developments are valid for the emergence of the concept of art. With the Renaissance and later, as the industrial revolution began to affect communities, the framework of the art–technology relationship began to change. From the perspective of art history, the relationship between technology and art has remained in the dimension of an artist–vehicle relationship for a period. In other words, the artist sees technology as the use of all kinds of tools necessary to create his product. Technology reproduces human bodily production relationships by transforming them into mechanical production forms. Besides the aesthetic relationships that include technical features, it also develops various possibilities that will be useful in artistic applications. Although art and technology are influenced formally, they also interact in the contextual area as different modes of production. In the human context, these interactions are an event that develops organic relationships in a dynamic environment, and neither can any event or phenomenon be abstracted from these organic relationships nor can technology be abstracted from art. Both are dynamic production phenomena that develop by mutual interaction within organic relationships.

When we look at the history of art, churches have lost their former power. The change in society has not been much different in artistic life. While there was a god-centred understanding in the art understanding of the Middle Ages, a human-centred understanding was introduced with the Renaissance. Thus, the concern to reflect human values in art has become dominant. Due to all these developments, the old techniques in art, in other words, the techniques used until today, have not been sufficient. Science and art are intertwined. The best example of this is that artists such as Leonardo Da Vinci, Michelangelo and Brunelleschi were also dealing with science. Developments in the Renaissance period caused the emergence of new expansions in the relationship between technology and art. Before the Industrial Revolution, artists used scientific developments, in other words, new technologies emerging as a result of scientific developments as a tool for the formation of his art. Although art is seen as an individual activity, the artist cannot produce art only with psychological sensations without being affected by the society in which he lives. In every period, there have been factors influencing the artist's creation process. As a result of the god-centred understanding in medieval art, the artist produced products within the framework of this understanding. The artist has always been in front of the society in which he lives. In other words, the god-centred way of thinking that prevailed in medieval art emerged by destroying the artistic ideas that existed before. As a matter of fact, the values that existed in the medieval art were destroyed by the artists living in the same society, and the human-centred thought movement dominated the art (Ugurlu, 2008).

With the industrial revolution, the values that exist in society have changed once again. In short, the god-centred thought system of the Middle Ages was replaced by the human-centred thought system and with the Industrial Revolution; this thinking system was replaced by a new era in which economic production was centred, values became commodified and a process continued until the individual became alienated. In conclusion, in this context, the effect of technology on the creative process in art is obvious. While questioning the values of the society in which the artist lives, it is the most natural way to use these values. Questioning the effect of technology on the artist's creation process parallels the questioning of the medieval artist's creation process of what god-centred thinking is. The society we live in has been accepted as the age of technology after the Industrial

Revolution. Therefore, it is not necessary to discuss the effect of technology on the creation process of the artist of this age (Turkmenoglu, 2014).

A new literacy created by digital culture has become a priority in human life and learning continues through art. It is thought that digital art can integrate the concept of information technology, which is at the top of the child's development, with art education based on the dynamics of digital culture and art (Liu, 2007, p. 97). Digital technology plays numerous roles in the arts. These are how learners see themselves as a unique person, how they learn about the world they are in and how their work affects the wider sociopolitical landscape (Agranovich, Amirova, Ageyeva, Lebedeva, Aldibekova & Uaidullakyzy, 2019; Sabirli & Coklar, 2020). Art students have these self-worth skills and are right. Perceiving the great potential of this digital technology will pay off with the use of digital technology in all areas and their working time. However, it should not be forgotten that the correct perception of digital technology is essential. It should be noted that we are in an age where social networks and online students' perspectives are widely presented to any region (Jenkins, Purushotma, Clinton, Weigel & Robison, 2009; Pop, 2020; Yehya, 2020).

The change and development in the visual arts with the technological developments and the possibilities offered by computers have also affected the concepts of art education and how to teach in education programmes (Terviel & Atabey, 2020). With the use of computers in educational programmes in schools, students can make practical and different arrangements on art works, make three-dimensional shaping studies, easily access all kinds of information about art on the internet and visit art museums (Akgulgil Mutlu, 2020; Tepecik & Tuna, 2001). While computer-aided works in the screen printing technique are gaining weight in the Graphics Main Art Workshop and the Original Printing Main Art ateliers, we can say that Painting Main Art workshops prefer to take a step back against this situation. The execution of the Painting Main Art Workshop lessons varies according to the artistic understanding of the lecturer. While some of our professors who conduct these courses prefer to adhere to the traditional understanding of art with strict rules, some of them are interested in contemporary art and can direct their students in this direction. It is thought that visual arts teacher candidates should have knowledge about traditional and contemporary art concepts in order to become well-equipped art educators (Bulut, 2014).

Looking at the literature review, when the studies on the use of digital technologies in the field of Fine Arts Education are examined, learning environments are created at different levels of art education; digital technologies are used as a tool during the preparation of course contents, transfer of the topics and evaluation. In the second case, which includes the practice in which artistic works are carried out directly in the digital environment, it is seen that technical education using various design programmes is concentrated. At this point, although technical education is emphasised in the training of art teachers, pedagogical understanding may be insufficient. In the process of integrating digital technologies in the context of digital art, as Aronson (2004) stated, artistic insights should be developed as well as technical skills. At this point, the understanding of digital art gains importance. Cuhaci (2007) and Unsal (2010) define digital art with the expression 'the form of art realised by the production of non-physical objects in which the computer plays a role in its production in general'. Digital art can be expanded according to Paul (2008) and can be defined as, 'artistic understanding in which digital technologies are used as a tool and / or medium in its production or exhibition'. Digital technologies have created a new language for today's children, just as art creates a new language through digital art understanding. Trying to transmit information to students who speak a brand new language through a dead language is more difficult than learning a new language (Altundag, & Seda Yucel, 2019; Prensky, 2001). He introduced the developments in collaboration technologies such as digital technology, and information creation that enabled the emergence of a new cooperation paradigm. This enables people from different fields to make a connection and connect to influence and positively generate active learning by introducing different kinds of characteristics to the learning experience in art (Behrend, Wiebe, London & Johnson, 2011; Olanrewaju, Adeshina & Kareem, 2016). For technology integration, art teachers and teacher candidates should be able to plan well and train themselves in the use and internalisation of new technologies (Black & Browning, 2010). In addition to

technological developments in daily life, it is necessary to follow theoretical, practical and technological developments in the field of art education. Especially at the higher education level, the aim of art education should be to educate the needed art educators by developing the knowledge transfer that will ensure the development of art education in a planned and purposeful manner, as well as directing creativity. Higher education institutions and universities in particular have become a scene for digital device use and various purposes (Salter & Lam, 2010). Studies have confirmed learning through digital art in informal settings and show that academic content is positive (Erbay, 1997; Lam & Tong, 2012; Orak, Cilek & Yilmaz, 2020; Olanrewaju & Odewumi, 2018).

1.1. Purpose and importance of research

The change and development in the visual arts with the technological developments and the possibilities offered by the computers also affect the concepts of art education and how to teach in education programmes. It is important to determine to what extent fine arts teachers use technology-supported training. In line with this importance, the purpose of this study is to examine the researches on the use of technology by fine arts teachers. It is to systematically analyse studies and discuss them with other key concepts. All documents published in the Web of Science database were included in the study.

1.2. Limitations

- This research is limited to the documents selected and analysed in the Web of Science database.
- Content analysis of documents is limited to eight themes (years, document type, Web of Science category, country, source title, organisation, authors and language).

2. Method

There are three types of data collection methods most commonly used in qualitative research: interview (including focus group meeting), observation and examination of written documents (Mguwata, 2020). The basic process in content analysis is to compile research-like data within the framework of determined concepts and themes and to interpret institutions in a way that the reader can understand (Yildirim & Simsek, 2006). Document analysis is one of the most important social research methods and is widely used in many areas in the history of social sciences (Kiral, 2020). In this study, content and citation analysis study model, which is a qualitative research methodology, was used.

2.1. Data collection and analysis

The entire universe was reached within the scope of this research, which was conducted to examine the researches on the use of technology by fine arts teachers, and a research was carried out using the keywords ‘Fine arts’, ‘Technology’ and ‘Teachers’ in the Web of Science database between 2004 and 2020. 169 studies were reached, as shown in Figure 1. The documents accessed from the Web of Science database were analysed, correlated and adapted, and the data were analysed with content analysis.

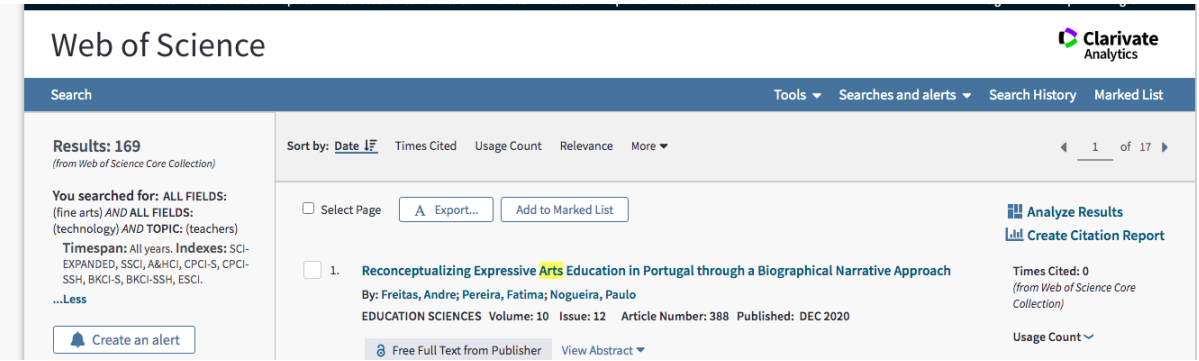

Figure 1. Documents accessed with the keywords 'Fine arts', 'Technology' and 'Teachers' in the Web of Science database

3. Result and discussion

3.1. Findings of the documents by years

In the research, 169 studies were accessed by browsing the Web of Science database to find relevant studies by searching with the keywords 'Fine arts', 'Technology' and 'Teachers'. The distribution of the data of 169 studies by years is given in Table 1.

Table 1. Distribution of the documents by the years

Years	Frequency
2020	10
2019	9
2018	14
2017	14
2016	35
2015	28
2014	30
2013	4
2012	4
2011	6
2010	7
2009	1
2007	4
2008	3
2006	1
2005	2
2004	1

In order to examine the research studies on the use of technology by fine arts teachers, all the studies scanned in the Web of Science database were reached. When the studies were examined, it was found that the most studies were conducted in 2016. In 2014, 30 studies were conducted. It can be seen that the least amount of work was conducted between 2004 and 2006. Before 2004, it was found that there were no studies regarding the use of technology by fine arts teachers. Considering the history of art, concrete examples of the importance of technology in the use of technology by fine arts teachers can be seen. Since its existence, art has been intertwined with technology and continues its existence in parallel with technology. In the cave period, people who drew bison or mammoth

pictures on the rocks used the technology of that period, even if they were unaware of a concept called technology at that time (Ayaydın, 2010; Bozlak, 2020).

3.2. Findings of the documents by document types

Table 2. Distribution of the documents by document types

Document type	*f*
Proceedings paper	138
Article	30
Editorial material	2
Book chapter	1

All researches on the use of technology by fine arts teachers were reached. It can be seen that almost all of the studies were published as Proceedings paper (138). It can be seen that one study was published as a book chapter.

4. Findings of the documents by web of science categories

Table 3. Distribution of the documents by web of science categories

Categories	*f*
Education educational research	119
Social sciences interdısciplinary	43
Art	19
Education scientific disciplines	13
Humanities multidisciplinary	13
Computer science interdisciplinary applications	9
Psychology multidisciplinary	8
Geosciences multidisciplinary	7
Environmental studies	6
Economics (5)	5
Computer science information systems	4
Computer science theory methods	4
Communicatıon	3
Architecture	2
Engineering electrical electronic	2
Engineering multidisciplinary	2
Language linguistics	2
Management	2
Public environmental occupational health	2
Sociology	2
Computer science artificial intelligence	1

When we look at the distribution of studies in the Web of Science index on the use of technology by fine arts teachers according to Web of Science Categories, we see that the most study field is 'Education Educational Research' (119). It has been found that the majority of studies are in the fields of Social Sciences Interdisciplinary (43) and Art (19). The least areas of study are Computer Science Artificial Intelligence (1), Computer Science Software Engineering (1), Construction Building Technology (1), Cultural Studies (1), Engineering Civil (1), Engineering Industrial (1), Engineering Manufacturing (1), Engineering Mechanical (1), Environmental Sciences (1), Ergonomics (1), Green Sustainable Science Technology (1), History of Social Sciences (1), History Philosophy of Science (1),

Linguistics (1), Music (1), Operations Research Management Science (1), Physics Multidisciplinary (1), Psychology Educational (1), Regional Urban Planning (1), Remote Sensing (1), Telecommunications (1) and Theatre (1). Since the studies in the literature are about teachers, it is not surprising that this result is in the field of education, namely 'Education Educational Research'. Ayaydin (2010) in his article 'Necessity and Future of Computer Technology in Basic Design Education' emphasises the necessity of reflecting developments in the art world depending on the computer technology to the contents of the basic design courses in the fine arts education departments and made suggestions and included examples on this subject.

5. Findings of the documents by countries

Table 4. Documents by countries

Countries/Regions	*f*
Peoples R China	36
Russia	31
Spain	22
USA	10
Romania	9
Slovakia	9
Turkey	9
Czech Republic	6
Portugal	5
Ukraine	5
Canada	4
Italy	3
Kosovo	3
Poland	3
Australia	2
Brazil	2
Croatia	2
Greece	2
India	2
Thailand	2
Bosnia Herceg	1
Finland	1
Germany	1
Hungary	1
Indonesia	1
Ireland	1
Jamaica	1
Lithuania	1
Macedonia	1
Malaysia	1
North Macedonia	1
Philippines	1
Serbia	1
South Africa	1
South Korea	1

Among the studies in the Web of Science index, when the distribution of the studies on technology use of fine arts teachers by country is examined, it was found that the most researched country was

the People's Republic of China (36). Russia (31) is among the countries in second place. The number of countries not studied is very low. When we look at the technology and development rankings of the countries, it is not surprising that the countries with the most studies are China and Russia. When the findings obtained from this study are examined, it is directly proportional to the developed levels of the countries. However, it is noteworthy that among these findings, the number of studies conducted in a developed country like USA is low.

6. Findings of the documents by source title

Table 5. Distribution of the documents by source title

Categories	*f*
International Multidisciplinary Scientific Conferences on Social Sciences and Arts	49
Advances in Social Science Education and Humanities Research	26
Psychology and Psychiatry Sociology and Healthcare Education Vol III	17
INTED Proceedings	12
International Multidisciplinary Scientific Geoconference SGEM	12
SGEM 2016 BK 1 Psychology and Psychiatry Sociology and Healthcare Education Conference Proceedings Vol I	8
SGEM 2016 BK 1 Psychology and Psychiatry Sociology and Healthcare Education Conference Proceedings Vol III	8
Proceedings of the 4th International Conference on Arts Design and Contemporary Education ICADCE 2018	7
Proceedings of the 2015 International Conference on Arts Design and Contemporary Education ICADCE 2015	6
Psychology and Psychiatry Sociology and Healthcare Education Vol I	6
Ecology Economics Education and Legislation Conference Proceedings SGEM 2016 Vol III	5
Procedia Social and Behavioural Sciences	5
Proceedings of the 3rd International Conference on Arts Design and Contemporary Education ICADCE 2017	5
Psychology and Psychiatry Sociology and Healthcare Education Vol II	5
4th International Technology Education and Development Conference INTED 2010	4
Ecology Economics Education and Legislation Vol III	4
Edulearn Proceedings	4
INTED2016 10th International Technology Education and Development Conference	4
Science and Education	3
14th International Technology Education and Development Conference INTED2020	2
2011 4th International Conference of Education Research and Innovation ICERI	2
2nd International Conference on Humanities Science Management and Education Technology HSMET 2017	2
Arte individuo y sociedad	2
British Journal of Educational Technology	2
Destech Transactions on Social Science Education and Human Science	2
EDULEARN10 International Conference on Education and New Learning Technologies	2
Elearning and Software for Education	2
Geoconference on Ecology Economics Education and Legislation SGEM 2014 Vol III	2

When we look at the distribution of researches on the use of technology by fine arts teachers according to the field of 'Source Title', it can be seen that the most researched field is 'International Multidisciplinary Scientific Conferences on Social Sciences and Arts' (49). The second area with the most studies was conducted in the Social Science category. 26 studies were conducted in the field of 'Advances in Social Science Education and Humanities Research'. When the search titles related to the

use of technology by the fine arts teachers in this study are examined, it can be seen that the study title is most similar to the field of research. The importance of introducing innovative technologies in the education process related to the field in determining research topics is undisputed in the literature (Garavaglia, 2016; Ilomaki & Lakkala, 2018).

7. Findings of the documents by organisations

Table 6. Distribution of the documents by organisations

Categories	*f*
Kazan Federal University (7)	7
Ministry of Education Science Of Ukraine (5)	5
University of Murcıa (4)	4
South Ukrainian National Pedagogical University Named After K D Ushynsky (3)	3
Technıcal University Kosice (3)	3
Tomsk Polytechnic University (3)	3
Unıversıdade De Lisboa (3)	3
Anadolu University (2)	2
Charles University Prague (2)	2
Chulalongkorn University (2)	2
Huanghe Scı Technol Coll (2)	2
Jiang Xi Sci Technol Normal Univ (2)	2
Krasnoyarsk State Pedagogıcal University (2)	2
Linyi University (2)	2
Marmara University (2)	2
Mendeleev University of Chemical Technology of Russia (2)	2
Palacky University Olomouc (2)	2
Ryazan State University (2)	2
Stepan Demianchuk International University of Economics Humanities (2)	2
Technical University of Civil Engıneering of Bucharest Utcb (2)	2

In Table 6, 20 institutions that worked the most in the category of ‘organisation and citation’ are given. The institution with the most studies is Kazan Federal University. It has been found that many universities from different regions of the world are working. When we look at the work conducted in Kazakhstan, the emphasis has been placed on science and art being intertwined with technology by introducing innovative technologies in the educational process related to scientific work (Garavaglia, 2016; Ilomaki & Lakkala, 2018); scientific research to examine age characteristics of preschool children from the prism of psychological science (Ansari & Pianta, 2019); studies that reveal the foundations of the organisation of classes visually and theatrically, play-based and constructive activities (Tarman & Tarman, 2011; Yan, 2019) are observed in kindergarten.

8. Findings of the documents by authors

Table 7. Documents by authors

Name	*f*
Cabanero J.S.	2
Coban S.	2
Gerova N.	2
Jiang J.	2
Krasovska O.	2
Liu B.	2
Matos J.F.	2

Mulet T.S.	2
Nuere S.	2
Patrocinio P.	2
Pedro A.	2
Piedade J.	2
Rambousek V.	2
Shatri K.	2
Urazmetov I.A.	2
Wildova R.	2
Xiong Z.	2
Zhi L.	2
Zhou H.T.	2
Abdulkın V.V.	1

Table 7 includes the list of 20 authors who made the most research. When the authors of the studies on the use of technology by fine arts teachers are examined, it can be seen that there are 19 authors working in the same field at most (2). It can be seen that other authors have works also.

9. Findings of the documents by languages

Table 8. Documents by languages

Languages	*f*
ENGLISH	162
SPANISH	4
RUSSIAN	3

When the written languages of the studies scanned in the Web of Science database were checked, it was found that almost all of the studies were in English (162). It was found that four studies were in Spanish and three studies were in Russian. It is not surprising that the English language, which is considered the universal language, has the most studies. The findings obtained from the countries with the most studies on the writing languages of the published studies are directly proportional. It is noteworthy that there are no studies published in Chinese in the developed country such as China and in the country with the most studies.

10. Conclusion

When we look at the distribution of fine arts teachers' research on technology usage in the Web of Science database, it can be seen that 2016 had the most number of studies. Before 2004, it was found that there were no studies with technology in beautiful arts about teachers. In recent years, it can be concluded that the studies should be increased by participating in the training of technological equipment. It is an undeniable fact that the technology, which constitutes the infrastructure of many works of art produced in the century we live in fine arts, prompts us to reinterpret visual arts from other angles, causing individuals who receive art education in this field to question the art education models.

When the document types of the studies on technology use of fine arts teachers are examined, it can be seen that almost all of them have been published as Proceedings paper (138). It was seen that one study was published as a book chapter. This result can be said to be due to the large number of technology-related conferences. It is thought that increasing the number of other types of studies examining fine art, technology and teacher relations will be beneficial in terms of contributing to the literature and reaching more target audiences.

When we look at the distribution of the studies according to Web of Science categories, it can be seen that the most study field is 'Education Educational Research (119)'. Social Sciences Interdisciplinary (43) and Art (19) appear to be the majority of studies in their fields. When the working areas are examined, it was seen that studies were carried out in different fields. This is a pleasant situation. Among the studies included in the Web of Science index, when the distribution of the studies on the use of technology by fine arts teachers by countries is examined, it was found that the most researched country was People's Republic of China (36). Russia (31) is among the countries in the second place. The number of countries not studied is very low. The countries of the studies in the fields of technology with the developed countries are directly proportional. Studies in these areas can be encouraged in countries where there is no work.

Kazan Federal University is the institution with the highest number of studies, and it was concluded that 19 authors, who did the most studies, conducted two studies each. When the written languages of the studies on technology use of fine arts teachers were checked, it was found that almost all of the studies were in English (162). It was found that four studies were in Spanish and three studies were in Russian. The result obtained from this finding and the result obtained from Table 4 (distribution by country) is consistent. It is not surprising that English as the universal language ranks first. Making and publishing studies in different languages is important in terms of contribution to the literature and reaching more target audiences.

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