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Evolving visual arts' faculty pedagogical skills through technology integration in higher education

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Abstract

This study is about the current status of technology's usage by visual arts' faculty members to enhance their pedagogical skills. It explores the impact of using technology in visual arts and the constraints in its integration. Researchers used qualitative research design to conduct this study. Data was collected, through semi-structured interviews, from faculty working in painting department of four institutions of Lahore, Pakistan. The findings of the study showed that faculty members were using technology for different purposes such as for art making, research and communications. However, at the same time, the use of technology was limited due to various factors, such as, insufficient funding, lack of training, teachers' un-willing attitude and deficiency in curriculum regarding technology integration.

Keywords*: Technology Integration, pedagogical skills, visual art, barriers*

Introduction

Technology has squeezed the world into a global village (Carr, 2017). People are connected and any kind of information can be accessed at just one click. The idea of globalization helped the technology to transcend and integrate across borders, but ultimately, it is the technology that helped globalization flourish (Golovine, 2014). The presence of technology in all spheres of life is an undeniable fact. Irrespective of the field, be it, information technology, communication, education, travelling, economy, politics, society or culture, technology has been instrumental in making things easier. Likewise, its catalytic role in education cannot be denied as it has changed the concept of how the learning process takes place and what is teacher's role in class (Bernard,2017).

Novic (2007) argues that rise of globalization has influenced every sector of society including education. However, it is imperative to uniform the education system at national

and provincial levels. The success of an educational system lies in revisiting the existing policies and restructuring these in accordance with changing environment.

Realizing the importance and ever-increasing role of technology in education, International Society for Technology (IST) highlighted three key areas in which teachers should be trained well. Firstly, teachers need to have basic knowledge of computer literacy Secondly, there must be a record of utilization of technology in their personal and professional lives. Thirdly, their current knowledge should be upgraded continuously (Gianakos, 2007).

Education is one of the fields which is evolving rapidly due to advancement in technology. Digital gadgets such as iPad, tablets and access to information using internet has transformed the traditional structure of classroom into an ever-evolving place. According to Jackson (2013), technology empowers you and provides massive information in the form of books, videos, audio and images. It has widened the horizon of learning as well as teaching. It helps to stay updated about educational advancement in other parts of the world. It gives avenues for collaboration which help students to learn, share and reflect.

Alawad (2012) also argued that technology has blurred the boundaries of arts all over the world, which was limited to specific areas before. Keeping this in view, the researcher, who is a student of art and design education program, believes that students of visual arts need to be better equipped in terms of technology and teachers must provide technology-supported learning. Today, it is important for an art teacher to equip students with sufficient knowledge of technology related tools, so that they can keep pace with the changing times and can tackle challenges of the world outside their educational institutes.

Baek (2006) while quoting Bransford, Brown, and Cocking (2000), identified five ways to illustrate the role of technology with the emphasis on learning: being able to bring the real-world experiences into the classroom, providing scaffolding that allows learners to

participate in complex cognitive tasks, increasing opportunities to receive sophisticated and individualized feedback, building communities of interaction between teachers, students, parents, and other interested groups, and expanding opportunities for teacher development.

It would be helpful if teachers recognize the importance of technology and make it a part of their teaching practices. If for some reasons, they fail to do so, that gap will create a split between class experiences and student's personal experiences (Black, Browning, 2011).

As suggested by Black and Browning, 2011, art educators need to stay updated about digital technologies. Otherwise, this lack of knowledge will create a divide between art educators and art world which will be difficult to bridge later.

The data for this study was collected from four different institutions of Lahore. Eight participants were taken from these four institutions. Two participants were picked from each participating organization for interview, using snow ball sampling technique. These institutions were- Lahore College for women, Step Institute of Art & Design, Pakistan Institute of Fashion and Design, and National College of Arts (NCA).

Purpose Statement

Adopting educational technology can not only bed used as a medium but also as an opportunity to enhance cognitive and problem-solving skills, visual reasoning that leads students towards exploration (Flood & Bamford, 2007). Similarly, according to Gianakos (2007), technology integration in a class fosters positive effects. It brings new resources to the classroom which offers prospects for personal and professional growth. Meanwhile, teachers can fulfill various needs of students who come from diverse backgrounds. Teachers of visual arts can stay up to date and can provide multiple mediums, depending upon the learning modes (e.g., auditory, visual, and Kinesthetic) for each individual.

The purpose of this study is to find out how visual arts faculty members from Lahore College for Women University, Step Institute of Art & Design, Pakistan Institute of Fashion

and Design, and National College of Arts are using technology to enhance their pedagogical skills. The study also intends to know about art faculty views regarding technology integrations in arts. Moreover, what efforts they are making to integrate technology in class and what hindrances they face during the process of integration. Based on the findings, the researcher also provided a framework for better integration of technology. The framework is presented in the form of diagram at the end of findings and analysis.

It is important to mention that visual arts are practiced in the areas like ceramics, drawing, painting, sculpture, craft etc. Art is a broader area and visual arts is composed of multiple disciplines such as sculpture, music, painting, photography etc. (Antliff, 2011). The current research is limited to painting only.

Technology comprises various tools that are designed to enhance living styles, solve problems and perform different tasks. For this study, the term technology is used to know how it is used to create new art forms (Agyeman, 2015).

Research questions

Following are the main and subsidiary questions of the study.

- How visual arts faculty members are using technology to enhance their pedagogical skills?
- What efforts are being made by faculty members to integrate technology in a class?
- What are the barriers to technology integration in the class?

Literature Review

This part of the research comprises literature review on the topic. Common aspects were highlighted by reviewing previous research papers. Researcher divided the topic into following themes.

- Pedagogical beliefs in fine arts regarding technology
- An overview of technology integration in class

- Factors affecting teachers use of technology (barriers, constrains)

Pedagogical beliefs in Fine Arts regarding technology

Art educator may use computer in classroom in three ways. Most of the teachers and students are using technology as an art making tool. They create different forms of art through its use .. Secondly, they use computer for research with an ultimate objective to look for other artists work around the world for inspiration. Students also research topics according to their interest. Moreover, computer is also used as a Communication tool. Students collaborate with teachers online to share, discuss, reflect and collaborate (Wang, 2000).

Koehler et al. (2013) used the term 'Technological Pedagogical Content Knowledge'. The study found a huge gap between theory and the application of framework in practical form. Moreover, it was argued that teaching requires large set of knowledge that is applied in diverse settings and contexts. A teacher needs to evolve constantly. The knowledge should not be limited to subject matter only but also expanded to the whole learning process.

Technology integration is possible when an instructor introduces relevant technological tools in art class and encourages students to analyze and explore through different possibilities of these instrument (Alawad, 2012). According to Wang (2000), Students should not stick to any one aspect of technology. Rather, they must be encouraged to explore different dimensions of it, from accessing information to transforming their thinking i.e. from analysis to reflection.

Technology integration in class fosters positive effects. It brings new resources to the classroom which offers prospects for personal and professional growth. Meanwhile, teachers can fulfill diverse needs of students who come from diverse backgrounds. Teachers of visual arts can stay up to date and can provide multiple mediums, depending upon the learning styles (e.g., auditory, visual, and Kinesthetic) of each individual. Technology creates a strong

bond between teachers and students as it helps teachers to understand the learning needs of different students (Gianakos, 2007; Sanchez and Nichols, 2003).

Grabbing Students attention is a matter of great significance for teachers. Technology offers different options for visual art teachers to maintain attention span of students, while, raising their interest in art class. Students participate actively in class and make connection with different forms of art through sharing their experiences of outside world. Students' creative abilities boost as they experience different artistic expressions around the world and share their art works. Moreover, it helps to boost student's confidence by providing different modes of communications (online groups, email etc. (Alawad, 2012).

According to R. Robin (2009), digital storytelling is a useful and emerging tool in art education. It engages students and gives them various artistic ways to express their ideas. Dede (1998) argues that digital technologies can be used to link schools, homes, workplace, libraries, museums and social services to reintegrate education into the fabric of community (as cited by Wang, 2000). Rise of digital technology has changed the way artists used to work. New technologies have entered the classrooms. Art educators should embrace it to expand the horizon of students' imagination (Thompson, 2020).

Technological world has gone beyond one's expectation. It has become imperative for teachers to update themselves with the changing time to create an engaging environment in the class. Absence of technology in class can create a divide between students' activities in the class and their experience outside the class (outer world). Its unavailability in class not only will leave a gap among students but also for educators as artists from all over the world shares their work through internet. Different forms of arts are evolving which makes it imperative for educators to be a part of this change (Black & Browning, 2011; Bentley, 2017).

Overview of Technology integration in class

Technology is a powerful tool to materialize multiple roles. While performing different tasks, it saves time and brings ease. It has the potential to perform as a tutor to teach students and at the same time as a tutee that students can teach to program instructions through a computer (Bhalla, 2013).

Technology has diversified the traditional definition of fine arts. It is no more limited to painting, sculpture and drawing. Students are making smart use of skill and technology. Technology is not only evolving in schools; but it has transformed the structure of commercial market too. Demands of commercial markets have changed. While keeping that shift in mind, institutions are making efforts to introduce new mediums in class also. The growth of students is not only limited to classroom. They are also learning through collaboration with peers outside the class. Social media is another platform which can engage students in ever evolving learning process. They can share work online on different forums and get feedback from audience all around the world (Bentley, 2017).

Blackmon (2020) argues that if schools do not evolve with time, they will become obsolete. Moreover, to apply technology, they need to have a proper plan. According to Anthony (2012), digital media cannot be utilized properly if teachers do not show willingness and interest to do so (as cited by Blackmon, 2020).

However, in most of the cases, teachers use technology not because of its effectiveness, but to meet the policy demands of administrative department and to fulfill the parents' expectations. Convenience is another aspect due to which they prefer to use technology. It is visually attractive and creates interest among viewers (Baek et al., 2006). Freedman (1997) argued that only sharing of learning resources is not enough. Teachers should engage students in a constructive dialogue. It is an important aspect of technology which will help make them independent critical thinkers (as cited by Wang, 2000).Learning

is a two- way process in which teacher plays a role of facilitator, not of an instructor. Technology provides opportunity to teachers to shift their traditional roles in class as it encourages student-centered approach. On one side, where a teacher acts as a mentor or lecturer, while on the other hand, the same teacher performs the role of facilitator to cater the needs of every student in class. The role of teacher keeps on changing (Dunn, 1996; Galbraith, 1997; Wang,2000;).

Technology leads students and teachers alike into the world of possibilities. A teacher can deliver lecture in multiple ways, making effective use of it and students can utilize it to execute ideas. To communicate effectively in class, educators' use images, video, slides, references from books and plan different activities (Baek et al., 2006; Gianakos, 2007).

Tele-collaboration is an effective tool as this helps teachers and students alike to stay in contact, even enabling them work together out of class. Teachers can stay in contact with students all the time, encouraging them to stay updated about the global happenings. Students can take part in discussions, debates and collaborate while sitting at home. Participation on online forums can give them a chance to meet diverse audience (Wang, 2012).

Technology helps art educators to share ideas and address issues surrounding art education. To incorporate technology, pre-service teachers' views should be considered as a valuable asset. Their personal experiences and diversity can be fruitful for students. At the same time, administration should provide them ample opportunities to experience technology (Galbraith, 1997).

Factors affecting teachers use of technology (barriers, constraints)

Key factors contributing to art teachers' reluctance to apply technology to their teaching include software difficulties, time constraints, shortage of hardware and software, and lack of support and training. Administrators and policy makers can address such difficulties through formulating and implementing supportive art education policies,

providing better teacher training and support, decreasing their stress, granting more time to learn about technology usage, Technology, however, should not be the most important part of the learning process as art making process is the key. To this end, students can be encouraged to manipulate and play with digital objects and ideas (Black & Browning, 2011).

Teachers discourage technology because of the fear that traditional values / materials of art will be lost. They apprehend that form of emerging art may burry traditional genre. They think use of computer should be limited to academic subjects like science and mathematics but not for the study of arts (Alawad, 2012). Similarly, Teachers will be able to integrate technology in class if they are provided sufficient resources, updated software, hardware and continued training. Training is a very important component of the whole process of technology integration. Moreover, peers, administrator and parents support make the whole process more meaningful (Gianakos, 2007).

According to Koehler et al. (2013), most of the teachers of contemporary times completed education at a time when educational technology was not prevalent as it is now. That is the reason that teachers lack knowledge about how to integrate technology and most of the time, they do not support the idea of integrating technology.

Assey (1999), Mize and Gibbons (2000), Ostler et al. (1996), and Rogers (2000) have identified the barriers and disadvantages to the integration of technology into the classroom as: teachers' exposure to new technologies including lack of teacher education program, willingness to change and lack of resources (as cited by Gianakos, 2007).

Low socio-economic communities are not performing well to integrate technology because of low budget and focus on academic studies. On the other hand, schools having enough resources are updating class environment according to the demands of technological world. Use of tablets, apps and software has changed the way traditional art was produced (Bentley, 2017).

Tallvid et al. (2015) argues that students' excessive interest in technology needs to be managed by designing relevant curriculum. Their abilities and interests need to be channelized. One of the hurdles to integrate technology is insufficient funding because small colleges and universities do not have enough resources whereas, corporate sector invests in bulk to improve the technology in art classrooms (Benett, 2018).

Thomas (2019), argues that in art and design, there is not a specific teaching method. However, teaching methods need to be refined as technology has become relevant in art and design classroom. Similarly, Andrei (2013), in her study showed that teachers did not use the technology due to lack of planning, training and time constraints. She suggested that all available resources needed to be utilized properly. On the other hand, some art educators do not support the idea of using technology. They are of the view that art cannot be in digital form because it lacks innovation and creativity (Agyeman, 2015).

This part of the research comprises literature review on the topic. Common aspects were highlighted by reviewing previous research papers and researcher divided them in three main themes. The themes for the literature review included, an overview of technology integration in class, pedagogical beliefs in fine Arts regarding technology and factors affecting teachers use of technology (barriers, constrains).

Methodology

Qualitative research design was adopted to conduct the study. The key characteristics of qualitative study are various. From the beginning till the end, researcher remains part of it while exploring multidimensional approach for data collection. During the process of data analysis, researcher goes back and forth to understand the experiences of the participants and to interpret things in a better way (Cresswell, 2009).

Semi-structured interviews of eight visual arts faculty members of four different institutions of Lahore, namely, Lahore College for Women University, Steps institute of art &

design, Pakistan institute of fashion and design, and National College of arts were conducted. Semi-structured interviews empower respondents to share their viewpoints freely. Researcher can have variety of experiences through this method of research (Cohen, D. & Crabtree, B. 2006). Two participants from each participating organization were selected for interview, using snow ball sampling technique. All participants were from painting department. Snow ball sampling is a method through which participants are approached through reference. In this technique, researcher asked the participants to refer other potential participants (Frey et al, 2000).

Researcher divided the guide in five different parts to acquire rich data on the topic. The areas of focus included the background of the participants, their basic understanding and use of technology in their personal and professional lives, use of technology in art class and what barriers they encounter to integrate technology. Researcher followed proper protocol to conduct interviews. Considering research ethics, researcher named respondents as participant 1, 2, 3, 4, 5, 6, 7 and 8 to keep their information undisclosed. Convenient date, time and place was decided as per the convenience of the participants. Data was audio recorded with the approval of the participants.

Interviews were later analyzed based on interviews, observation and memo writing. Nvivo software was used to extract themes from data. The technique mentioned in Miles and Huberman (1994) was also applied here. According to that technique, in step one of the data analysis, the names of the participants were replaced with new names to hide their identity. The transcripts of the interviews were formed. The responses were categorized into two themes, major and minor. Those themes which were emerged through consolidated ideas expressed by almost all respondents from the interviews were the major ones.

Findings and Analysis

This part of the research comprises findings and analysis. Themes emerged out of data collected through interviews are mentioned on the next page.

- Relevance to technology
- Efforts to integrate technology
- External and internal Barriers
- Art Educator's Concerns
- Training
- Learning through collaboration

Relevance to technology

The first and foremost consideration was to know the participants' access to technology. To learn about teacher's attitudes, the researcher asked participants about the use of technology in their daily lives. Majority of the participants used technology on daily basis. They used internet, computer, and smartphones on daily basis. Participant 1 said that computer is used for data storage and for making presentations. It's also used for online browsing and to access data online.

I use computer for multiple purposes such as for study and to share data with my students. In professional terms I use it to get in touch with my other fellow artists and to increase my knowledge regarding my subject. I visit different online libraries to get updated information. (P1)

Participant 2 shared that use of technology is for communication purpose. Research was another important factor for participant 2. Participants 1, 2, 4 and 5 shared the same dimension on the use of technology that they use it for sharing of data, for communication, research, for data storage and to make presentations. However, participant 3 uses internet to know current trends and new materials and techniques in painting.

I use computer to stay in touch with students and college, to do research and to make planners. Actually, our field is a bit traditional and I prefer to show the work of artists live in

galleries to my students so that they can better get the gist of materials and technique instead of referring online. (P2)

Moreover, Participant 1 told that she uses different apps to access artist's online and online galleries to sell paintings.

I do publish my work and I encourage my students to use it because internet is a source which can be accessed anytime and from anywhere. I also have contact with different galleries who sell my work online (P1)

When asked about any technology related course, some of the participants shared that the institutions held seminars periodically to update teachers about new trends, whereas, some of the participants did short courses on their own. Participant 2 and 5 did Photoshop course to update himself and to follow current trends. Participant 1, 3 and 4 did not attend any course related to use of technology. However, participant 5 and 6 shared that they watch different tutorials on internet to learn new techniques.

Sometimes ago, digital trends were booming. People were learning different software and I thought it's new I should also learn it. With this thought in mind, I did Photoshop course just to learn something new (P2).

None of the participants has technical knowledge or they cannot solve software or hard ware related problem. They can identify hardware problem if there are visible changes but technically, they did not have any know how. Participant 2, 4, 5 and 6 shared that they use different apps like WhatsApp, Google classroom to keep in touch with their students to help them in their tasks while sitting at home and track their learning.

We try to facilitate students through WhatsApp group. They keep updating the process of assignment and any query faced by them. Email is another way but WhatsApp is more accessible because it can accommodate many in one group (P4).

Technology is a two- way process. Being visual artists, we stress on to have strong command on concept first. Everything comes later whether students want to do it manually or digitally it is up to them (P6).

Teachers were also asked to share their experiences of technology use in personal and professional lives. All the teachers gave positive response about the use of technology in their personal lives. However, not all of them are active users of technology, such as internet and apps. When asked about the use of technology as a creative practitioner, participant 1 told that she accesses internet to know advancement in visual arts. It helps to stay aware about new techniques and current trends. Participant 1 also told that she is in contact with different online galleries and through these galleries, she accesses buyers globally. Technology is useful for her as she can contact other artists all over the world.

I have contacts with local art galleries. These galleries have a network of galleries all over the world. I also visit online gallery as it helps to interact with another artist's community (P1)

Participant 3 does not use it as a creative practitioner. Rather her use of technology is limited in class for teaching purpose only to make presentations and sharing useful resources in class. Likewise, participant 2 also uses internet for research purpose.

I make regular use of multimedia in my class to project lessons. Except that I show they videos and tutorials so they can better understand the topic. However, I prefer books from library first because you can check the authenticity of the source while online it becomes difficult to trace the authentic source (P3)

All participants are using technology for teaching purpose. However, participant 1, 4 and 6 are utilizing technology as a creative practitioner also, to stay updated, to know about current trends in visual arts and to sell their artwork all over the world. According to

participant 5, technology does matter for artists but before that it is concept formation on which artist should have grip. Concept or ideas comes first and technology comes later.

Due to advancement in the field of art there is a visible shift. Being an educator, I think it's important to update yourself because you will be able to teach something new to your students also. This thought encouraged me to attend the Photoshop class. (P5)

Some of them had a desire to integrate and use technology but unable to do so. According to participant 4 technological advancements are happening every single minute so it's not possible to stay updated. Though participant 2 did a short course in Photoshop to follow current trends and to learn a new medium.

All of the participants have access to technology at work place and at home. They make use of computers to store data, to make presentations and to give lectures to students. They use internet to keep in touch with artist community, to increase their knowledge regarding the subject, to stay in touch with students and to do research. However, none of the participant had technical knowledge if they encounter any issue with their devices. Similarly, being visual artists, their key concern remains the authenticity of the source and to avoid that they prefer consulting library instead of online browsing. They try to make good use of app like WhatsApp to review students' progress and to guide them.

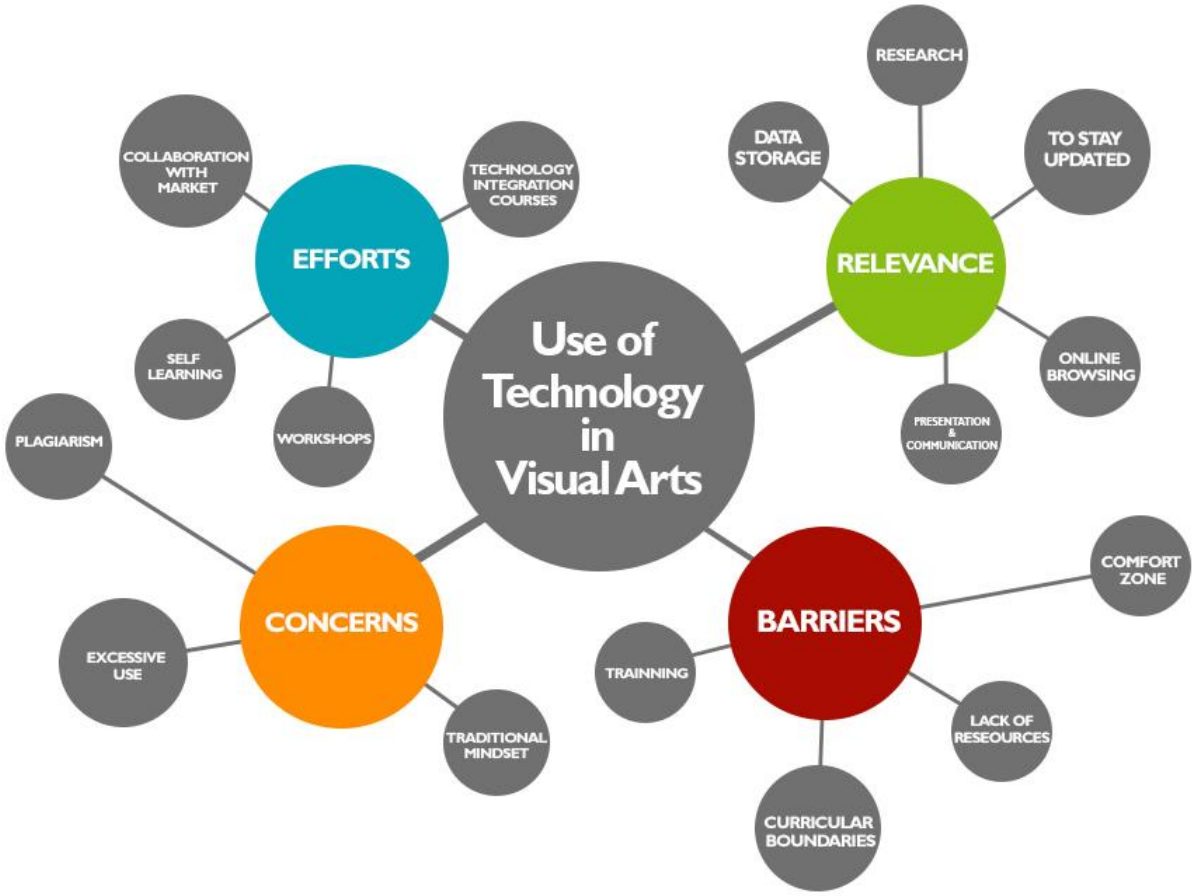

Figure 1. Evolvement of visual arts' faculty pedagogical skills through Technology integration in higher education

Efforts to integrate technology

In this section, teachers were asked to share what efforts are made from administration and faculty side to integrate technology. Looking at Students growing interest in technology, teachers and institutions are making efforts at different levels to integrate technology better.

Participant 3 told that due to rapid advancement in technology demands of commercial markets have changed. It has changed the overall structure of commercial market and to keep pace with that change they are collaborating with industrial professionals. They have meetings with professionals who belong to visual arts field, with better knowledge about advancements in field. Those professionals shared their understanding and upcoming trends in the field and according to that changes are made in curriculum.

Technology is spreading rapidly in commercial market. To keep our students aware and to amend curriculum according to that we held meetings and arrange sessions to stay updated. It helps to stay updated (P3)

Participant 4 told that "we have submitted proposal to administration to give students options and to add new techniques, mediums and software during 2nd year. It will help them to better utilize their potentials and they will be able to explore new mediums according to their interests.

We at the college with the consent of all teachers have submitted a proposal to add courses related to technological advancement in painting in foundation year also. It will help them to have grip on this from early years of their education (P4).

Participant 1 shared that due to the efforts of faculty and administration they introduced a new course, New Media Arts, to introduce new techniques to visual arts students. It is helping them to learn more about art world and new forms of arts.

Faculty and administration alike are making effort to better incorporate technology related courses. Professionals from commercial market are also taken on board for this purpose. However, the action plan is slow but there is a realization that things need to be changed.

Internal and external barriers

In this part, faculty members were asked to talk about the constraint they are facing while trying to integrate technology. Faculty members face multiple obstacles and challenges to incorporate technology. Participant 1 shared that students comfort zone is a barrier. They prefer to stay in their comfort zones despite different challenges and encouragement. Participant 1, 2 and 4 told that some of the students who don't have enough resources to work on their skills. They avoid use of technology with a fear that it will cost more and their traditional mindset that painting is about manual work.

All of the students have not access to new technological devices. Plus, the mindset that painting is a traditional field and the work will stand out if they will work manually becomes barrier to incorporate technology (P2).

Participant 1 told that different fine arts department of other institutions are affiliated with their institutions, whenever, they try to bring change they have to seek consent from other institution. They straight forward say that we do not have enough resources to cater to these up gradations in curriculum. Non-availability of teachers, proper equipment's, and training facilities are major obstacles in the way of technology integration.

The problem is that one institution had to take a lead here and other department at different colleges are attached to that department. One curriculum is being circulated in other departments as well. Whenever, an issue arises about the inclusion of additional course or task, most of the institutions do not support due to lack of resources (P1).

Participant 4 pointed out that there is lack of awareness among students and teachers about technological advancement in visual arts. Participant 2 suggested that there should be a balance in traditional and modern techniques but when students are given choice, they make excessive use of technology which is harmful to them. To teach them how to maintain a balance is teacher's responsibility and that's why teacher should be properly trained in this regard.

Funding is not the main concern for participants the problem is proper utilization of that funding. All of the participants support traditional medium because they think that technology cannot give the traditional feeling in an artwork. Participant 5 shared that use of technology in traditional subjects like painting will give the work an artificial look. The essence of this subject is in its traditional values, medium and techniques.

The barriers to incorporate technology in painting are many. The mindset that painting is a traditional field and the essence of it lies in its traditionalist attributes. This is the

reason that some teachers and students follow traditional methods. Secondly, lack of resources is another reason because in the absence of proper training and equipment's it becomes hard for the faculty to incorporate technology.

Art Educator's Concerns

In this section, participants were asked to share their concern about the use of technology. All of the educators want to use technology and some of them are integrating it in class. However, at the same time they had concerns about the use of technology in visual arts. In this regard, participant 4 told that male students show more interest to do assignment on computer because most of them work during study. This is the reason that they prefer digital over manual. This way technology can also divide class on gender base because female students prefer to do manual work.

Some students work while they study and this gives them an edge over others. They have knowledge of different softwares. They try to incorporate that understanding in their class. Being a teacher, I do not limit them rather i stress on their choice and interest (P4).

Participant 4 also added that male students adopt t technology from very young age and they keep exploring it. Whereas, as females grow up, they get indulged in towards domestic chores which is the reason that females avoid technology and prefer manual work.

Male students opt for technology software as they have interacted technological devices from early age. On the other hand, female prefer to do things manually. Keeping this in mind I have to keep the balance in class also (P4)

Participant 1 also showed concern about the use of technology in visual arts. According to her, painting is a manual field. It's a traditional medium and it should be kept separate from graphic side. Participant 3 shows concern about the excessive use of technology as she says that she prefers manual work and at the end of the day we have to

show results to administration. Painting is a traditional medium and the institution prefers to keep it traditional.

It does not matter what we want. At the end, it is institution and the outline they provide us. We have to follow them and according to that painting is traditional subject and it should be dealt in that manner (P3).

Participant 2 and 6 showed concern about the student's excessive use of technology. They said if we allow students to work freely, they get dependent on technology upto 99%. They don't try to work on their own then. This way, their cognitive process is affected and their own capabilities die down. They do not work in collaboration as collaboration of traditional and new media is necessary. Students go for easy work, whereas, their priority is to encourage students to mix traditional and modern mediums.

I want that students should have known how of technology and what is coming up in their field. However, the problem is that if I don't restrict them, they start depending on it 99% which I really discourage (P2)

In today's time understanding of technology in our field is very important. It gives you alternative ways to do one task. But it also raises chances of plagiarism. Whenever, students are given any task, they do not brainstorm rather they jump on internet and just copy paste (P6).

Participants have different concerns regarding the use of technology. They believe that understanding of technology is important because it equips students and practitioners alike to do one task in different ways. However, it also raises some doubts because students start depending on it usual than what is required. Moreover, some teachers believe that painting is a traditional field. Its beauty lies in its traditionalistic attributes and it should be treated the same way. Curricular boundaries from institution side are another concern shared by the participants.

Training

In this part, participants were asked about the role of training to integrate technology and how institutions are providing them opportunities to learn new technologies in the field of painting.

Participant 1 and 3 and 6 told that different training programs are introduced by administration side which is related to pedagogical aspects. These trainings are planned generally not for a specific department. All faculty members attend the same training whether it relates to them or not. There should be separate training programs for visual arts department. Participant 1 stressed upon the need to provide teachers software related and digital tools training so they can better guide students.

We have a separate department of training but it focuses on pedagogical aspect only. It has little to do with integrating technology in class because different departments participate in it at one time (P1).

I have attended a training session in which the stress was that how we can engage students if we are not present in the class or somehow cannot take the class. I learnt to use different tools to engage with my students so they kept learning something in the absence of teacher (P6).

Participant 4 told that they make a list of all teachers who are proficient in different programs and software and then their colleagues share their understanding about new mediums in the workshops. So, they learn through collaboration of all which is in the benefit of all. However, almost all participants shared that there is lack of training in their respective departments.

A list is prepared based on the proficiency of different teachers. According to their skill we design a session in which all interested teachers can participate and can learn something new about the field or any new software (P4).

All participants stressed the importance of training to get awareness about new technologies. The institutions arrange training sessions but those trainings are not subject specific rather general in nature. The training sessions focus on pedagogical aspects and teachers from various discipline participate in it. at some place's teachers work in collaborations and design little workshop based on the proficiency of teachers.

Learning through collaboration

In visual arts different department work under one roof. The role of every department is different and so are the techniques and method of doing work. In this section, participants shared how peers and fellows from other department can influence learning of the students. Participants told, though support from administration side is weak, they do try to integrate technology through different mediums. Students also show interest. It was important for researcher to know how they learn new techniques if they have little support form administration side. Participant 4 shared that though she has no training but she learns by watching different tutorials.

In my free time, I prefer to watch tutorial and different techniques that are emerging in the field. In this way I try to keep my self-upgraded (P4).

Likewise, participant 2 shared that he learned different techniques through peer learning and collaboration. Participant 4 also told that they make a list of all the teachers who are proficient in different programs and softwares and then their colleagues share their understanding about new mediums in the workshops. This way, they learn through collaboration of all which is in the benefit of all.

A list is prepared based on the proficiency of different teachers. According to their skill we design a session in which all interested teachers can participate and can learn something new about the field or any new software (P4).

When asked about students' behavior that if institution don't provide training to students then how they are able to do work in different mediums. Participant 2, 4, 5 and 6 shared almost same reasons. Students learn most of the software's, techniques and medium through peer learning and collaborations. They have friends in other departments who share their knowledge with them. This way, they learn about new medium and techniques. Some of the Students do short courses on their own. This trend is high especially in male students.

Most of the students have contact with fellow students and have friends in other departments. For example, we have graphic design department. Most of their work is software based and students who have friends they learn different softwares on their own (P8).

Learning through collaboration, peer learning and self-learning are very rare among visual artists. They prefer to learn about emerging technologies and software's on their own.

Framework for technology integration

Based on the findings, framework is designed for technology integration. The following diagram shows key elements to integrate technology which include willingness, access, teacher education program, investment in education technology and technology integrated curriculum. All parts are interconnected with each other.

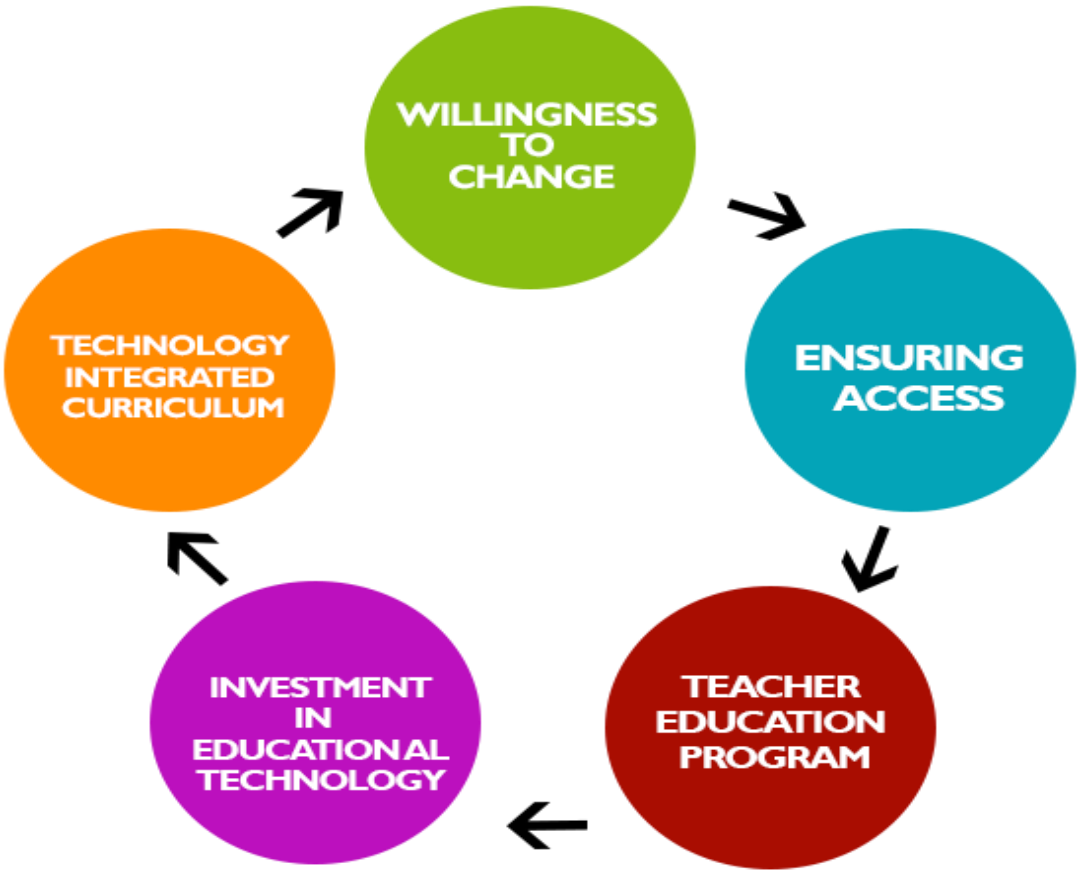

Figure 2 Framework to integrate technology

Willingness to change is first essential aspect to integrate technology in visual arts. The findings showed that teachers become sometimes unable to create a technology friendly environment due to resistance to change. Similarly, access to technology is equally important. If teachers and students are unable to access technology, they would be unable to explore it.

Education programs are needed to be designed in which visual arts teachers would be able to learn new skills. Findings showed that some of the institutions arrange trainings but these are not subject specified. Those trainings remain general in nature. For that purpose, investment in educational technology is very important. When teachers will be aware of using technology as a tool to diversify the learning process, they will be able to make the curriculum technology integrated.

Discussion

This section of the study comprises the discussion on the findings obtained from the data analysis. It has been observed that there were similarities between findings of this study and the earlier research conducted on technology integration in visual arts. The purpose of the study was to investigate the current status of the use of technology by Visual Arts Faculty and what barriers do they face to incorporate technology.

All participants have access to technology at workplace and at home. They make use of computers to store data, to make presentations and to deliver lectures to students. They use internet to keep in touch with artist community, to increase their knowledge regarding the subject, to stay in touch with students and to do research.

Art educator uses computer in three ways. Most of the teachers and students are using technology as an art making tool. They create different form of art through the use of it. Secondly, they use computer for research purpose as they look for other artists work around the world for inspiration and students also research topics according to their interest. Moreover, it is used as a Communication tool. Students collaborate with teachers online to share discuss, reflect and collaborate (Wang, 2000).

Participants shared that they try to make good use of apps like whatsapp, email and Google classroom to review students' progress and to guide them. Tele-collaboration is an effective tool as it helps teachers and students alike to stay in contact and they can work together out of class. Teachers can stay in contact with students all the time, encouraging them to stay aware about the global happenings. Students can take part in discussions, debate and collaborate while sitting at home. Participation on online forums can give them a chance to meet diverse audience (Wang, 2012). However, Thomas (2019), argues that in art and design, there is not a specific teaching method. However, teaching methods need to be refined as technology has become relevant in art and design classrooms.

All of the educators wanted to use and integrate technology in class as it gives new avenues to explore. However, at the same time they had concerns about the use of technology in visual arts. Teachers believe that students start depending on it more than what is required. They believe that painting is a traditional field. Its beauty lies in its traditionalistic attributes. According to Alawad (2012), teachers discourage the use of technology out of the fear that traditional values / materials of art will be lost. They fear that form of emerging art may burry traditional art. They think use of computer should be limited to academic subjects like science and math's but not for the study of arts. Similarly, Agyeman (2015) argues that some art educators do not support the idea of using technology. They are of the view that art cannot be in digital form because it lacks innovation and creativity.

Bentley (2017) in this regard said that digital instruments have altered the traditional definition of fine arts. It is boosting the creative, technical and cognitive skills of students and teachers alike. Students are taking more interest than ever because of its multidimensionality. At the same time, importation aspects of curriculum should not be overlooked. The ideal situation would be to mix traditional and non-traditional forms of art. All participants stressed the importance of training to get awareness about new technologies. The institutions arrange training sessions but those trainings are not subject specific rather general in nature. Gianakos (2007), emphasized that training is a very important component of the whole process of technology integration. Teachers will be able to integrate technology in class if they are provided sufficient resources. Assey (1999), Mize and Gibbons (2000), Ostler et al. (1996), and Rogers (2000) have identified the barriers and disadvantages to the integration of technology into the classroom as: teachers' exposure to new technologies, lack of teacher education program, willingness to change and lack of resources (as cited by Gianakos, 2007).

Similarly, in this regard Koehler et al. (2013) highlighted that most of the teachers of contemporary times completed education at a time when educational technology was not prevalent as it is now. That is the reason that teachers lack knowledge about how to integrate technology and most of the time they do not support the idea of integrating technology.

Another obstacle highlighted by Faculty members was the students' unwilling attitude. Sometimes students do not want to leave their comfort zone. The key reason behind this is lack of resources. Low socio-economic communities are not performing well to integrate technology because of low budget and focus on academic studies. On the other hand, schools having enough resources are updating class environment according to the demands of technological world. Use of tablets, apps, adobe software has changed the way traditional art was produced (Bentley, 2017).

Weak technical support from administration side, lack of training and insufficient infrastructure development is another hurdle. Teachers find it hard to incorporate technology into their teaching due to software difficulties, increasing stress, heavier teaching loads, time constraints, shortage of hardware and software, and lack of teacher support and training (Baek et al., 2006; Black & Browning, 2011). Another barrier highlighted by Anthony (2012) was willingness of teachers. According to him, digital media cannot be utilized properly if teachers will not show willingness and interest to do so (as cited by Blackmon, 2020).

Conclusion

The result of the study concluded that technology is fast taking roots in in visual arts. Visual arts, which is considered to be a traditional form of art for decades, is evolving due to technological advancement. One of the reasons of this change is the evolving structure and needs of commercial market. Bentley (2017) agrees with this conclusion by saying that technology has diversified the traditional definition of fine arts. it is no more limited to painting, sculpture and drawing. Students are making smart use of skill and technology.

Technology is not evolving in schools only; rather it has transformed the structure of commercial market also. Demands of commercial markets have changed. While keeping that shift in mind, institutions are making efforts to introduce new mediums in class also. The growth of students is not limited to classroom as they are learning through collaboration with peers outside the class. Social media is another platform which can engage students in ever evolving learning process. They can share work online on different forums and get feedback from audience all around the world.

Faculty members are making efforts to integrate the technology as participants shared that they try to make good use of apps like WhatsApp, email and Google classroom to review students' progress and to guide them. However, they showed concern about irrelevant use of technology by students. Wang (2000), also argues that students should not stick to any one aspect of technology. Rather, they must be encouraged to explore different dimensions of it, from accessing information to transforming their thinking and from analysis to reflection. Data also reflected that students show great interest in the use of technology. They learnt different software, like Photoshop, illustrator in collaboration with peers. Teachers encourage the use of technology but at the same time they ask students to keep the use of technology limited. They are of the view that traditional and cultural values of visual arts will die down in case of unabated use of technology. Agyeman (2015) argues that some art educators do not support the idea of using technology. They are of the view that art cannot be in digital form because it lacks innovation and creativity.

Training is an important part in the process of technology integration. There is a dire need to introduce different training programs to help faculty member utilize technology in a better way. Lack of proper training is one of the barriers. Students comfort zone is another barrier as they sometimes go for easy ways. To fill the gap. collaboration of faculty and administration is required. Black & Browning (2011) suggested a solution to this problem

that Administrators and policy makers can address such difficulties through writing and implementing supportive art education policies, providing better teacher training and support, decreasing teachers' stress, granting more time to learn about technology usage, lessening teaching loads, and supplying more resources to purchase software and hardware. Technology, however, should not be the most important part of the learning process; rather, the art making process is key. To achieve this end, students can be encouraged to manipulate and play with digital objects and ideas.

The results from the study and framework can be utilized by policy makers at art institutions and the administrators to better integrate technology. However, the study was limited to painting department only. For future research, it can be expanded to all disciplines of visual arts.

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