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Abstract

This qualitative research investigates the effectiveness of social media website in developing art skills for science students in science teacher education. Through in-depth interviews, focus groups and participant observations involving pre-service science teachers, teacher educators and curriculum developers, this study aims to uncover the perceptions, practices and challenges associated with integrating art skills into science teacher preparation. Research methods used was interviews. The findings reveal that while there is a strong recognition of the importance of environmental awareness, various barriers such as insufficient curriculum content, lack of practical training opportunities and limited institutional support hinder effective implementation. Moreover, the study highlights the innovative strategies educators employ to overcome these obstacles, emphasizing experiential learning, interdisciplinary approaches and community engagement. The results underscore the need for a comprehensive re-evaluation of science teacher education curricula to better equip future educators with the knowledge, skills and attitudes necessary to advocate for and teach sustainability. This research contributes to the ongoing discourse on enhancing environmental education in teacher preparation, offering insights and recommendations for policy makers, educators and institutions committed to promoting sustainability through science education.

Key Words: Art Skills, Social Media Websites, Teacher Education

Introduction and Context of the Study

Social media has grown more common in everyday life. The rise of social media has changed the way most people use the internet. The internet is no longer a one-way broadcast delivery system in which individual users obtain data, information and other resources created by a small number of content

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providers (Selwyn, 2011). Social media applications allow users to engage with others while also creating, editing and combining various types of information for sharing purposes, such as photographs, podcasts, video, audio and text. These tools allow for both individual expression and engagement with other users (Arnold & Paulus, 2010).

Social media platforms such as YouTube are already being used successfully in the classroom (Seo, 2012). Search engines, digital libraries, online references and databases for accessing, managing and integrating strands of various material will ensure that students acquire and master these resources, as well as apply these answers to real-world problem solving. There is a lot of study on the use of social media in educational contexts, but there isn't much on creative arts learning and artwork development using social networking sites. This report presents selected preliminary data on how creative arts students use social media in their learning environment (Haeryun Choi *et al.*, 2010).

The ability to function well on limited sleep and work at a high energy level (a central component of most hypomanic states) is important for creative accomplishment, with very powerful mood and sleep changes frequently occurring just before periods of creative activity. Contemporary communication and media technologies have facilitated the learning and sharing of numerous types of information via online communities (Dron & Anderson, 2014). Social media is a collection of Internet-based applications that focus on the creation and exchange of user-generated content (UGC) (Kaplan & Haenlein, 2010). Additionally, it's characterized as "collaborative online applications and technologies which enable and encourage participation, conversation, openness, creation and socialization amongst a community of users." (Bowley 2009).

According to (Panahi *et al.*,2012), social media can help people with similar goals and attitudes create and share information more easily. Creating different perspectives and new ideas in online communities (Etelapelto and Lahti, 2008). People have a good attitude toward collaborative learning on social media since it provides a more involved experience and motivation for those participating in knowledge-related activities (Manca & Ranieri, 2020). This study defines arts integration as a strategy for integrating the development of abilities and concepts in the arts

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with skills and concepts from other areas of learning via diverse forms of engagement in classrooms (Ludwig, Boyle & Lindsay, 2017).

This study stressed arts integration as a curriculum and pedagogical undertaking, with the expectation that the intervention would also motivate teachers and their cultural partners to make more effective use of the arts as part of school culture (Charland, 2011). The arts allow educators to support varied learning requirements by examining individual themes via many experiences. (Maxine Greene, 2017) authored. "If we are to affirm, extend and enhance the importance of the arts in education, we must reject the kind of uniformity that erases the diversity, richness and humanity that infuses the arts, as well as human beings' individual and often collective responses to the arts. Furthermore, we need to understand more about attending (Baker, Mehlberg, & Hickey, 2018; Koutsoupidou and Hargreaves, 2009).

Statement of the Problem

In today's educational scene, the integration of multiple disciplines has received a lot of attention. One such junction is the use of social media platforms to improve creative abilities among science students, especially in science teacher education programs. Despite the increasing popularity of social media as a tool for learning and skill development, there has been little empirical research on its usefulness in developing artistic ability in students who predominantly study scientific topics. Art skills are essential for science students, especially future science educators, as they enhance creativity, visual communication and the ability to present scientific concepts more effectively. Traditional methods of teaching art in science education may not fully engage students or provide the necessary resources for skill development. Social media websites, with their vast array of tutorials, peer collaboration opportunities and exposure to diverse artistic styles, present a promising alternative.

Objectives of the Study

1. To explore the effectiveness of social media websites on art skills.
2. To explore the role of social media websites in self-creativity.
3. To explore the difficulties in social media websites on creating art skills.

Research Questions of the Study

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1. How do social media help with developing art skills?
2. What is the role of social media in creating art skills?
3. What are the difficulties in social media websites?

Significance of the Study

The significance of studying the effectiveness of social media websites on drawing skills and self-creativity lies in understanding how these platforms impact artistic development. This study may explore exploring whether they enhance or hinder artistic abilities by informing educators individuals seeking to improve their creative skills in this digital age. Additionally, insights from such a study may contribute to optimizing education, problem-solving, artistic expression, professional fields and fine motor skills.

Review of the Related Literature

Social media" as a requires no explanation since we are confident that everyone, young and old, has heard of it, understands it and is using it in some form or another. For those who aren't interested, "social media is any media or platform that allows one to be social, or get social online by creating/sharing content, news, photos, videos etc. with other people." Social media has become an unavoidable part of our everyday lives and like it or not, it is here to stay. In reality, the number of mentions on social media is frequently used to indicate the importance of problems and the level of public support for them. (Taprial & Kanwar, 2012)

As social media grows in popularity, marketers need a solid foundation upon which to base strategic decisions on how to use social media to interact and influence their customers. Such a foundation is becoming increasingly important as online social networking and "social sharing" behaviors increase and as "always-on" Internet use becomes more personal, being accessed as much or more on mobile devices than it is on computers, with mobile representing one-third of all traffic to Facebook and with all of these trends rising. (Hoffman & Novak, 2012). Social media has transformed educational practices by facilitating communication, collaboration and access to resources. Research highlights that platform like Facebook, Instagram and Pinterest provide valuable tools for enhancing learning experiences. For instance, Greenhow and found that social media can foster collaborative learning and student engagement across various

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subjects. Noted that social media tools support both formal and informal learning, making them suitable for diverse educational contexts. (Greenhow & Askari, 2017)

The integration of social media into art education has been explored in various studies. Demonstrated that social media platforms offer artists and students opportunities for feedback, networking and skill development. Their research underscores the role of social media in providing a global audience for art, which can enhance students' artistic skills and creativity. Additionally highlighted that social media allows art students to share their work, receive critiques and engage with a broader community of artists, contributing to their artistic growth. (Kipp-Newbold, 2023)

Social networking, artificial intelligence, virtual reality and digital media have prompted many educators to pursue and implement a variety of digital tools in their classrooms. They began implementing a technology-centered educational system in order to broaden their instructional techniques and boost the opportunities for creatively combining concepts and innovatively communicating knowledge to their students. In this article, we investigate the intersection of creativity, technology and art and design education and we promote the use of digital tools and the repurposing of social media applications to assist creative thinking (Al Hashimi *et al.*, 2019). The application of social media in science education, particularly for developing art skills, is less explored but emerging. (Becker & Park, 2011) discussed how integrating art into science curricula can improve students' understanding of complex concepts and foster creativity. Their findings suggest that incorporating artistic elements into science education can enhance students' overall learning experience. However, research specifically addressing the use of social media to develop art skills in science education remains limited (Yumin & Isa, 2024).

Several studies have assessed the effectiveness of social media in enhancing art skills. Argued that digital platforms engage students in interactive and immersive learning experiences, which can lead to improved artistic competencies. Supported this view by showing that social media tools facilitate personalized learning and skill development in art education. Her research emphasized the potential of social media to create dynamic

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learning environments where students can experiment with new techniques and receive real-time feedback (Al Hashimi *et al.*, 2019).

Despite the potential benefits, there are challenges associated with using social media in education. Highlighted issues such as digital divide, privacy concerns and the need for effective pedagogical strategies. In the context of art education, that while social media can enhance learning, it requires careful integration into the curriculum to ensure it supports educational goals rather than becoming a distraction (Hung, 2016).

The school has been sluggish to use social media as a teaching tool. This study serves two purposes. First, this study investigates students' attitudes toward the usage of social media in face-to-face educational settings. Second, this study investigates how social media, as a learning tool, promotes presenting skill development. We used a proprietary social media platform to perform a sequential qualitative method study with students enrolled in undergraduate introductory information systems courses that included a student presentation project (Di Gangi *et al.*, 2017).

Teachers could make artistic activities more meaningful by talking to students about what they do during activities, how they feel while doing them and so on. Furthermore, when teachers examine the aspects and qualities of their works, children's self-esteem improves and they learn how to look at other people's artistic work, identify aesthetic features and debate them. Artworks created in groups teach children how to organize and execute projects collaboratively. While working together, they should learn how to share objects, listen to others and when and how to work. This approach to art education promotes multi-faceted development, notably the development of social skills. To support children's social skills, it is critical that teachers provide qualitative artistic experiences in their classes and use art as both a purpose and a tool by learning artistic education through integrated artistic education and teaching it while deepening other academic learning (Yazici, 2017).

Nowadays, the explosion of social media trend is as astounding as that and the rate at which it is evolving is aggravating. International corporations have identified social media promotion as a possible promotion system and have employed it with upgrades to boost their marketing efforts (Sajid, 2016). The effect of social networking sites on

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students. A questionnaire was developed to identify the factors influencing students' use of social networking websites. The variables identified include age, gender, education, social impact and academic success. A random sample of 168 students was recruited. The study found that students aged 15 to 25 primarily utilize social networking websites for fun. 60% of male students utilize social networking sites for knowledge. Graduation students sometimes prefer social networking platforms for relaxation (Khan, 2012)

Social media is best. Community Press is the current trend. And for businesses, it represents a marketing and promotion opportunity that eliminates the traditional intermediary and links them directly with customers. This is why practically every organization on the planet--from Starbucks and IBM to the neighborhood ice cream shop--is looking into social media promotion efforts. Last season, firms were unsure about social media. It's here to stay and details mills are quickly embracing social media promotion. Much like email and websites originally enabled businesses, social media is the next promotion trend. Social media promotion includes promotion through social systems, weblog promotion and other methods. It is the latest vibrate in promotion. Bangladesh was arguably one of the first proponents of social media promotion (Badr *et al.*, 2022)

Information system enjoyment has been characterized as a desirable phenomenon because it can motivate a variety of system functions. We rely on a variety of theoretical mechanisms and consistent with earlier research, conclude that enjoyment can lead to presumably favorable effects such as increased involvement. However, it can also assist the development of a strong habit and reinforce it until it becomes a 'bad habit', so contributing to the formation of a severe pathological and maladaptive psychological dependency on the usage of the IT artifact (i.e., technology addiction). We tested and validated this twofold effect of enjoyment using SEM techniques on a data set of 194 social networking website users. The possible duality of MIS constructs and their consequences for research and practice are examined (Turel & Serenko, 2012).

Social media significantly increased student engagement in art activities. Participants reported higher levels of motivation and interest in completing art projects when using social media platforms compared to traditional methods (Tarantino *et al.*, 2013).There was a notable

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improvement in various artistic skills, including creativity, technical drawing and digital art proficiency. The interactive and visual nature of social media helped students explore and refine their artistic techniques (Roblyer *et al.*, 2010).

Students agree that social media allows people to connect and share common interests. Social media provides valuable tools for communication and education, as well as opportunities for networking in any industry. With time limits and tight class schedules, social media allows students to multitask without having to create many individual messages. They frequently use Facebook, watch TV or videos, converse, email friends and family and write papers or do research all at the same time. The idea that both the medium's technological capabilities and the material it delivers influence people's attitudes and behaviors. This study made two major general observations: a) online social networks are effective structures for connecting people, allowing them to create content and meaningfully participate in public affairs; and b) social networks are more than just a place to spend time; they are useful tools for collective action (Valenzuela *et al.*, 2008).

The social and technological growth of society, new communication and organizational paradigms and globalization. In today's changing workplace, graduate students must possess new forms of metacognitive skills. Collaboration is more global and occurs online. This necessitates a new form of social competency. In this light, traditional teaching approaches must be severely evaluated. The Tampere University of Applied Sciences Teacher Education Centre has rethought learning environments and evaluation to enhance the formation of metacognitive skills and social competence. Social media platforms such as Second Life, Skype and blogs have been utilized in education and dialogic evaluation has been tried as an assessment method (Torp & Myllylä, 2010).

With the rising usage of current electronic media in different aspects of life, it has become vital to develop instructional approaches to address this transition. The use of digital visual media into the educational process is an important step toward updating instructional methods. The usage of these visual media in programs for future teachers has become

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indispensable due to the broad impact of such content in this digital (Albaqami, 2019).

The idea that both the medium's technological capabilities and the material it delivers influence people's attitudes and behaviors. This study produced two significant general observations: a) Online social networks are effective structures for connecting individuals, allowing them to create content and meaningfully participate in public affairs; and b) social networks are more than just a place to spend time; they are valuable tools for collective action. According to research into the effect of social media on self-concept, college students either believe that social media websites have a positive or bad impact on their self-esteem (Valenzuela *et al.*, 2008).

This means that, while it is not immediately evident to the authors of social media profiles, students' identities are being separated in order to fit within the limited area of social media. According to a study on how students use social media, the majority of college students spend a significant amount of time on social media platforms. Ninety percent of the students polled devoted their time to entertainment. While 80% of the sample admitted to posting or responding while doing schoolwork, few college students favored utilizing social media to complete their homework (Wang *et al.*, 2011).

The relationship between emotions and creativity is complex, as it depends on one's emotional skills. Deciding to be creative and unique can need courage or cause fear and brainstorming new ideas can offer exhilaration or a sense of overload. Creative people learn to listen to their feelings for inspiration, to tolerate criticism of their work and to use dissatisfaction to refuel their motivation. These are talents that an artist, scientist, or inventor can develop over time, but strategies for increasing creativity can also be expressly taught. By seeing, debating and creating art, children can improve their emotional vocabulary, learn about the benefits and drawbacks of different emotional states, feel the results of an innovative approach and master (Basadur *et al.*, 1986).

Two factors could harm the rigorous methodology and reproducibility of this type of research. First, reliance on data accessibility makes the retrieval process subject to changes in access conditions; and second, the enormous volume of data makes manual verification of large datasets

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problematic, forcing specific automatization processes a script, for example. As a result, the growing availability of free and open data leads to more representative sampling (Martí *et al.*, 2019) Critical thinking and thinking skills were used to construct and validate a workshop that teaches emotion skills (perceiving, using and understanding emotions) and creative skills (problem solving and idea production) to children aged 6 to 12 through engagement with the visual arts. After completing the six-session class, children demonstrated a better understanding of how emotions may be used to facilitate thinking and behavior in everyday situations and they reported being less likely to settle on their first idea when creating art. Children gave favorable feedback on their workshop experiences and expressed an interest in future art-based learning opportunities.

Social media is being utilized to inform visitor management in parks and protected areas. We study the scientific literature to better understand how social media has been and may be used to quantify visitation, geographical patterns of use and visitor experiences in parks and protected areas. Retagged social media are an excellent proxy for real visitation differences in correlations between social media and other sources of visitor data. The majority of research utilizing social media to quantify visitor's aggregate data over many years, with relatively few attempting to examine the utility of social media as a visitation proxy on short time scales (Wilkins *et al.*, 2021).

Social media, as a teaching tool, has a natural collaborative component. Students review and comment on each other's works, collaborate in groups to generate content and can quickly contact one another and the teacher with problems or to start a discussion (Kessler, 2010). At the absolute least, sites like Twitter, Facebook and even My Space can be utilized to spark classroom discussions. Teachers can select news pieces from any of these sources. After reading something, students can raise questions and start a deeper discussion. Professors can conduct peer reviews for writing assignments (Prillo, 2011).

Research Methodology

Although interviews are considered a legitimate method of acquiring information in qualitative investigations, they do have some drawbacks, such as a low reaction rate. The reserachers administered the questionnaire,

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which resulted in an elevated reaction rate. The goal became that the members were asked to explain whether they had any difficulties answering any of the questions. Therefore, preserving in view all of the factors the questionnaire turned into built because of the study's instrument. The Researcher very well deliberated and thoroughly worded the questionnaire with an entire dialogue associated with the translation of the questions. Interviews on the opportunities and challenges of additional academic duties on the performance of science teacher's education. The questions had been built in the sort of manner that the respondents sense it turned clean to reply quickly. Moreover, the closed questions are beneficial in producing frequencies of responses amendable to statistical analysis. The Interview turned into built to explore the opportunities and challenges of additional academic duties on the performance of science teachers' education. These interviews had been additionally primarily based totally on the researcher's non-public know-how as a lecturer at the universities of Pakistan and the science teachers teaching university students at the university level

The main questions were exploring the following objectives:

1. To explore the effectiveness of social media websites on art skills
2. To explore the role of social media websites in self-creativity
3. To explore the more creative forms of social media websites
4. To explore the effects of social media websites on creating art skills

Table 3.1 Demographic Information of the Participants

Participant	Gender	Age
Teacher 1	Male	26
Teacher 2	Female	23
Teacher 3	Male	25
Teacher 4	Male	24
Teacher 5	Female	25
Teacher 6	Female	23
Teacher 7	Female	26
Teacher 8	Female	27
Teacher 9	Male	30

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Teacher 10	Male	33

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Account of the Administration of the Interview Questions

There are many ways to manage interview questions, including phone interviews, face-to-face interviews and online and audio recordings. These types of interview questions give you time to think about you're a researcher. In April 2024, I managed enough time to ask interview questions to my target sample. This method has been very helpful in meeting the demands of all participants. In addition, you must (a) describe the purpose of your research; (b) clarify response instructions and (c) obtain reasonable response rates and accurate data. Data management procedures researchers implemented to obtain adequate response rates and valid data.

This study verified that such impacts might be the main subject. It has been noted that quantitative studies are published in Pakistan more frequently than qualitative studies, which is researcher. As a result, qualitative methods like focus groups, interviews and observations are less frequently used. As a result, this study makes a contribution to assessment research methods, particularly when using qualitative techniques like semi-structured interviews. And the value of it. Five focus groups, each with four to five university-level students, were used to conduct the interviews for this study.

All things considered, therefore, focus group questions researchers built as research tools. I carefully planned and carefully drafted the focus group questions, with a good discussion of question interpretation. Focus group interviews researchers conducted by researchers investigating the role and importance of using video in improving the understanding of laboratory physics course procedures.

The questions are structured in such a way that the respondent can easily a researcher them quickly. Additionally, closed questions help generate response frequencies that can be used for statistical analysis. A focus group was established to explore the role and importance of using video in improving students' interest in social media. To explore these concerns, goals and limitations, questions researchers developed to cover the designated areas of using videos to improve students' interest in social media procedures. For use by teachers. These interviews are also based on the researcher's knowledge as a student and university-level student at the University of Pakistan.

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The main questions researchers administered to explore the following objectives

1. To explore the effectiveness of social media websites on art skills
2. To explore the role of social media websites in self-creativity
3. To explore the most effective social media websites for self-creativity
4. To explore the more creative forms of social media websites

Account of the Administration of the Focus Group Questions

Focus group questions, phone interviews, in-person interviews, internet surveys and audio recordings can all be managed in a variety of ways. Participants predicted how they would respond to a series of focus group questions. Second, you have some time to consider your response after being asked this particular focus group question. In April 2024, researcher had enough time to conduct focus groups with members of our target sample. The needs of all participants have been satisfied with great success thanks to this approach. Additionally, you must (a) explain the goal of your study, (b) make response guidelines clear, (c) get respectable response rates and (d) collect correct data. To acquire sufficient response rates and reliable data, data management methods researchers put into place. Additionally, the ethical standards for research and education researchers' follow researcher.

Ensuring Trustworthiness

Participant's researchers offered the chance to decline to take part in the study to ensure their honesty. A connection is made with the participants. Each session begins with a reminder to the participants to be open and honest. Ask them the same questions over and over to catch deliberate lying. Use enough probes to obtain thorough responses. Debriefing meetings with the research supervisor were frequently attended. The qualitative research project underwent peer assessment. Discussed the subject at hand from both a personal and professional standpoint. Presented a thorough explanation of the phenomenon. Findings from past research are reviewed to see if they support the development's results in order to establish external validity. Presented a substantial amount of information in order to describe the process.

To guarantee the reliability of the researcher. Even if the study's results weren't exactly the same, a subsequent researcher would be able to repeat

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them. Outlined the steps used in the research design and implementation of the project. Helping with operational facets of the process of gathering and analyzing data the efficiency of the investigation process was assessed. To the greatest extent possible, it was made sure that the study's findings reflected the experiences and ideas of the participants rather than the researcher's traits and preferences. The author of a reflection acknowledged the beliefs that guided the study's decisions and methods. Gave a thorough scientific breakdown of the inquiry. Future observers will be able to track the development of the research using a graphical presentation of the information documentation. To guarantee the reliability of the researcher. Even if the study's results weren't exactly the same, a subsequent researcher would be able to repeat them.

The public university of Punjab province teachers and students were selected as a sample. Almost 10 teachers and 25 students were selected. The data were collected from teachers and students of the university. It required personal efforts to gather data from the selected sample so the investigator of the study decided to assemble data and visited the university personally.

The following were the main themes that emerged from the questionnaire and interview data:

1. Role of Social Media in Developing Art Skills.
2. Benefits of Social Media for Science Students.
3. Impact of Social Media on Art Skills.
4. Support of Social Media in Science Teacher Education
5. Specific Art Skills Developed Through Social Media
6. Success Stories of Using Social Media for Art Skills
7. Enhancing Science Teacher Education Through Social Media

Analysis of Qualitative Data

This section presented the findings related to the role of social media in developing Art Skills. This chapter contains all the themes exacted from this phenomenological study. The first session deals with the Benefits of social media for Science Students. The second session deal with Impact of social media on Art Skills. The third session deals with social media support in Science Teacher Education. The fourth session deals with the Specific Art

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Skills Developed Through social media. The last session deals with the Enhancing Science Teacher Education Through social media.

This chapter presents the semi-structured interview data from 10 Teachers and 5 focus group.

The following were the main themes that emerged from the questionnaire and interview data:

1. Role of social media in Developing Art Skills
2. Benefits of Social Media for Science Students
3. Impact of Social Media on Art Skills
4. Support of Social Media in Science Teacher Education
5. Specific Art Skills Developed Through Social Media
6. Success Stories of Using Social Media for Art Skills
7. Enhancing Science Teacher Education Through Social Media

Theme 1: Role of Social Media in Developing Art Skills

Participants were inquired about the Role of social media in Developing Art Skills. They were asked and probed to talk about social media in developing art skills.

Subtheme 1: Sharing artwork and collaborating online enhances skill development

The collected data showed that most of the participants have three years of experience. They started sharing artwork and collaborating online enhancing skill development in the last three years. For Example, a participant stated:

Collaborative projects can push artists to meet deadlines and maintain a regular practice, essential for skill development(T5).

Hence this data indicated that collaborative projects force artists to meet deadlines and practice regularly, which is essential for skill development.On the other hand, few participants had two years of teaching experience.

Online art communities often provide support and encouragement, which can be crucial for continuous skill development(T2).

The global reach of online platforms allows artists to connect with professionals, gaining insights and advice that aid in skill development(G1S1).

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Hence, this data showed that the global reach of online platforms allows artists to connect with experts and gain insight and advice that can help improve their skills.

Subtheme 2: Accessing instructional content to learn new techniques and improve existing skills.

The collected data showed that half of the participants favored the new Techniques. Most of the participants think that improving existing skills. For Example, participant stated:

Online instructional content often includes community support, providing artists with feedback and encouragement to improve their skills(T3).

Instructional content often covers a variety of mediums, allowing artists to diversify their techniques(T13).

Hence, this data indicated, educational content often covers a range of media, allowing artists to diversify their techniques. Online educational content often includes community support, providing artists with feedback and encouragement to improve their skills.

Subtheme 3: The role of community feedback in refining and advancing art skills.

The collected data showed that all the participants used the role of community feedback in refining and advancing art skills. For example, a few participants noted that:

Community support and feedback can create a sense of accountability, driving artists to consistently work on their skills(T1).

Continuous feedback loops with the community ensure that artists are always evolving and advancing their skills(G3S2).

Hence, this data showed that, a continuous feedback loop with the community allows artists to constantly develop and improve their skills.

Theme 2: Benefits of social media for Science Students

Participants were inquired about their Benefits of social media for Science Students. They were asked and probed to talk about their viewpoint and thoughts on social media. They were asked about Benefits of social media for Science Students.

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Subtheme 1: social media bridges the gap between art and science for a holistic education

The collected data showed that most of the participants knew about the term of social media. They believed it is a process of looking back on past experiences about social media bridges the gap between art and science for a holistic education...For Example, one participant Asked:

Social media can facilitate the exchange of ideas between art and science educators, enriching curricula with interdisciplinary approaches(T1).

Art-science collaborations on social media can inspire educational institutions to adopt more integrative teaching methods(G1S1).

Through social media, students can access virtual tours of museums and science centers, showcasing how art and science intersect in various exhibits(G5S2).

Artists can use social media to explain scientific phenomena through visual storytelling, making complex ideas accessible(G4S5).

Social media groups and forums provide a space for discussing and exploring the synergies between art and science(G5S3).

Hence, this data indicated that Artists can use social media to explain scientific phenomena and make complex ideas accessible through visual storytelling. This data indicates when social media provide a space for discussion and exploration of the synergies between art and science. Through social media, students can take virtual tours of museums and science centers and see how art and science intersect in various exhibitions.

Subtheme 2: Connecting with professionals and peers in both art and science fields.

The collected data showed that most of the participants about Connecting with professionals and peers in both art and science fields.

Connecting with professionals and peers in both art and science fields fosters interdisciplinary collaboration and learning(T1).

Professional connections can lead to collaborative projects that combine artistic creativity with scientific research(T4).

Another participant stated that:

Networking can facilitate access to exclusive resources, workshops and events in both art and science communities(T5).

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Engaging with a network of peers can provide support and encouragement, motivating continuous improvement(T7).

Hence this data indicated that the Collaborating with a network of colleagues can provide support and encouragement and encourage continuous improvement. Networking facilitates access to exclusive resources, workshops and events in the arts and sciences communities

Subtheme 3: Accessing diverse educational materials and tutorials that integrate art and science.

The collected data showed that most of the participants knew about the of Accessing diverse educational materials and tutorials that integrate art and science.

Accessing diverse educational materials that integrate art and science enhances interdisciplinary understanding(G5S2).

Educational resources that integrate art and science can encourage students to pursue STEAM (Science, Technology, Engineering, Art and Math) education(G5S4).

Hence, this data showed that, access a variety of materials that integrate arts and sciences to foster interdisciplinary understanding.

Theme 3: Impact of social media on Art Skills

Participants were inquired about their Impact of social media on Art Skills. They were asked and probed to talk about their viewpoint and thoughts on social media. They were asked about the Impact of social media on Art Skills.

Subtheme 1: Continuous practice and feedback leading to better art skills.

The collected data showed that most of the participants were about Continuous practice and feedback leading to better art skills. For Example, participant noted that:

Consistent practice helps artists establish a routine and discipline, essential for skill development(T4).

Regular practice and feedback foster a growth mindset, encouraging artists to view challenges as opportunities for improvement(T5).

Feedback from peers and mentors can highlight areas for improvement, leading to more polished artwork(G5S2).

Hence, this data show that Regular practice and feedback foster a growth mindset, encouraging artists to see challenges as opportunities to improve.

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Feedback from peers and mentors highlights areas needing improvement, resulting in more refined artwork.

Subtheme 2: Learning from a variety of artistic styles and techniques shared online

The collected data showed that most of the participants easily grow up our Learning from a variety of artistic styles and techniques shared online. For Example, one, participant noted that:

Exposure to diverse artistic practices can encourage cross-disciplinary approaches and collaborations(G4S3).

Studying different styles online can aid in understanding cultural and historical contexts in art. Artists can gain insights into the creative processes of others, enhancing their own approach to art-making(G4S5).

Online communities often share tips and tricks for blending multiple techniques, fostering innovation(G5S3).

Hence, this data showed that online communities often share tips and tricks on combining multiple techniques to foster innovation. This data indicates that, learning different styles online helps understand the cultural and historical context of art. Artists can gain insight into the creative process of others and improve their own approach to art.

Subtheme 3: Staying motivated through community engagement and public sharing

The collected data showed that most of the participants about Staying motivated through community engagement and public sharing. For Example, one participant pointed that:

Public sharing of work often leads to increased visibility, motivating artists to continue producing and improving. Receiving constructive criticism from peers can provide valuable insights and motivate artists to refine their skills(G5S2).

Other participants stated that:

Community engagement can lead to collaborations and opportunities that reignite an artist's passion and motivation(T8).

Hence, this data indicated that, Community participation can lead to collaborations and opportunities that reignite an artist's passion and motivation. This data indicates that, sharing work publicly often brings visibility, motivating artists to keep creating and improving. Constructive

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criticism from peers provides valuable insight and motivates artists to hone their skills.

Theme 4: Support of social media in Science Teacher Education

Participants were inquired about the Support of social media in Science Teacher Education. They were asked and probed to talk about the benefits to Support of social media in Science Teacher Education.

Subtheme 1: Access to online courses, webinars and professional communities.

The collected data showed that most of the participants easily grow up our knowledge and another experiment easily. For Example, one participant noted that:

Online courses provide structured learning and access to expert instruction in various artistic and scientific fields. Webinars offer live, interactive learning experiences that can deepen understanding of specific topics and techniques(T1).

Webinars can provide real-time feedback and answer questions, enhancing the learning experience. Professional communities offer forums for discussing trends, sharing knowledge and seeking advice from experienced professionals(T5).

Professional communities' foster collaboration and partnerships that can lead to new projects and innovations. Online courses often include assessments and quizzes to track progress and ensure understanding. (G5S1).

Hence, this data show that Webinars enhance the learning experience by providing real-time feedback and answering questions. Expert communities provide a forum to discuss trends, share knowledge and get advice from experienced experts. This data indicates that Expert community's foster collaboration and partnerships that lead to new projects and innovations. Online courses often include assessments and tests to track progress and ensure understanding

Subtheme 2: Exchanging teaching materials and strategies with a global network of educators.

Participants were inquired about Exchanging teaching materials and strategies with a global network of educators. Some other participants noted that:

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Building a repository of teaching resources through interactions with educators worldwide. Learning from the experiences and expertise of educators across different regions(T3).
Accessing a wealth of teaching resources through a global network of educators. Fostering a supportive community of teachers for sharing educational best practices(T10).
Supporting continuous improvement in teaching through knowledge-sharing with educators worldwide. Leveraging a global network of educators to elevate the quality of instruction(G5S1).

Hence, this data show that Access a wealth of educational resources through a global network of educators. Foster a collaborative community of teachers and share best educational practices.

Theme 5: Specific Art Skills Developed Through social media

Participants were inquired about the Specific Art Skills Developed Through social media. They were asked and probed to all about the Specific Art Skills Developed Through social media.

Subtheme 1: Improving traditional and digital drawing and painting techniques

Introduction of high-quality materials for traditional art, such as professional-grade paints and brushes. Integration of new techniques and methods for blending colors seamlessly in traditional painting(T3).
Increased accessibility to art supplies and tools, making it easier for artists to experiment with different mediums(T4).
Ongoing research and development in both traditional and digital art to continue pushing the boundaries of creativity and innovation(T10).

Hence, this data indicated that ongoing research and development is taking place in both traditional and digital arts to further push the boundaries of creativity and innovation.

Discussions

The qualitative data highlights social media's many advantages in helping science students in Teacher Education programs develop art skills. These platforms offer easily accessible, high-quality instructional content; they also create a community that is supportive and interactive; they encourage collaborative learning; and they improve the integration of artistic and scientific knowledge. By utilizing social media's strengths, educators can

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provide a more comprehensive and enriching learning experience that equips students to be adaptable and creative professionals.

The learning process is improved when instructors incorporate social media into the curriculum. These platforms are used by educators to design engaging and interactive classes that combine scientific ideas with creative expression. Students can employ their artistic abilities in a way that supports their scientific understanding by using digital technologies to generate infographics or other visual representations of scientific facts. Social media, according to educators, aids in bridging the knowledge gap between theory and practice.

Students use social media to experiment with various mediums and techniques in real-time, obtaining immediate feedback and modifying their methods accordingly, as opposed to merely depending on traditional art schools. Science students benefit greatly from this experiential learning method since it helps them understand the practical applications of art and makes the learning process more interesting and meaningful. Most social media sites, like YouTube, Pinterest and Instagram, offer many educational resources. These tools are beneficial for science students, even if they have never taken formal art classes. A wide range of artistic techniques are covered in tutorials, live seminars and how-to videos, from fundamental sketching and painting to sophisticated digital art abilities. Professional artists and instructors frequently create these resources, guaranteeing top-notch training students can access at their own pace.

The complex relationship between emotions and creativity hinges on one's emotional skill. Whether emotions aid or hinder the creative process varies. Choosing to be creative and different can be courageous or anxiety-inducing and generating new ideas can bring excitement or a feeling of being overwhelmed. Creative individuals learn to draw inspiration from their emotions, handle critiques of their work and channel frustration into increased motivation.

These are skills that artists, scientists and inventors can develop over time, although techniques for boosting creativity can also be explicitly taught (Basadur *et al.*, 1986). The visual arts, as a form of creativity, offer a potent medium for achieving this. Through observing, discussing and creating art, children can expand their emotional vocabulary, understand

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the advantages and disadvantages of different emotional states, experience the rewards of taking an unconventional approach and solidify their learning through hands-on activities. Although artists typically need to be self-reliant in managing their business, their education often focuses more on artistic skills than on managerial knowledge. This paper examines the current curricula of 154 art institutions (public and private) in the DACH countries (Austria, Germany and Switzerland). The results reveal a deficiency in the inclusion of economic and business-related topics in the education of artists at art universities and institutions. The data collected indicates that most participants have three years of experience and have started sharing artwork and collaborating online to enhance their skill development in the last three years. For example, a participant stated, "Collaborative projects can push artists to meet deadlines and maintain regular practice, which is essential for skill development." Therefore, this data shows that collaborative projects compel artists to meet deadlines and practice regularly, which is crucial for skill development (Burton *et al.*, 2000).

Conversely, a few participants had two years of teaching experience. "Online art communities often provide support and encouragement, which can be crucial for continuous skill development." Therefore, this data illustrates that online art communities frequently provide the support and encouragement essential for ongoing skill development. The global reach of online platforms allows artists to connect with professionals, gaining insights and advice that aid in skill development. A look at Anglo-American countries reveals that, unlike in Europe, art schools are more open to integrating economic content into their curricula. This study focused on middle school art teachers supporting the development of students' learning skills, particularly their awareness of the framework of learning skills. Moreover, it examined the relationship between the teaching practices teachers use for supporting learning skills and students' learning motivation in art classes.

Conclusions

Some findings and suggestions on the usage of social media websites in the development of creative abilities among scientific students in Teacher Education programs are drawn from the qualitative data. First of all, social

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media platforms work incredibly well at creating a welcoming learning environment and offering easily available, excellent art education. These platforms' interactive and collaborative features greatly increase student motivation, engagement and self-assurance in their ability to improve artistic talents. Second, by including social media in the curriculum, learning becomes more dynamic and relevant by bridging the gap between theoretical knowledge and real-world application. One of the recommendations is to encourage teachers to use social media platforms in their lesson plans to improve students' creative skills. In order to optimize the advantages of these platforms, teacher education programs ought to train educators on how to use them successfully. Priority should also be given to creating a collaborative online environment where students may share their work and get helpful criticism. In order to ensure that social media integration in educational settings continues to be a useful tool for the development of artistic and scientific competences, further study and feedback gathering should be done on a regular basis.

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