

STUDENT TEACHERS' PERCEPTIONS ON THE USE OF TECHNOLOGY AND SOCIAL MEDIA IN PROJECT-BASED LEARNING CLASSROOM

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Abstract

Technology and social media have had a substantial impact on the optimization of project work for today's learners. This study specifically examined the utilization of technology and social media for five distinct objectives. The activities to be undertaken in the classroom include learning, communication, source seeking, project development, and product presentation. This study also examined the student teachers' perspectives on the advantages and difficulties of utilizing technology and social media in writing journal assignments. This study involved 18 student teachers from the English Education Department of Wiralodra University. This case study employed a questionnaire and interview to collect the data. The findings indicated that the majority of student teachers utilized handphones, laptops, web browsers, and Google Scholar as their primary tools for learning in the classroom. The student teachers utilized WhatsApp (specifically WhatsAppGroup and Video Call), Instagram, and Zoom as means of communication with their friends. The student teachers utilized Google Scholar, SINTA, and E-Journal Web to seek the materials. Subsequently, the student teachers employed Chat GPT, Grammarly, Turnitin, and Quillbot to develop the project. Finally, the student teachers utilized PowerPoint (PPT) and Canva to display the work. Several challenges arise when utilizing technology and social media to generate journal articles, including the challenge of locating pertinent reference journals, the challenge of procuring non-open access journals, connectivity issues, and limited internet data. Some of the advantages of this include better communication, easier access to resources that can speed up assignment completion, and better quality articles.

Keywords: Student Teachers' Perceptions, Technology, Social Media, Project-Based Learning

Introduction

Project-based learning (PjBL) has gained popularity in a wide range of educational institutions, from elementary schools to higher education (Vogler et al., 2018). The process of planning and implementing a learning program that is centered on the active participation and comprehension of a student has become increasingly commonplace, particularly in the realm of higher education. Krajcik and Shin (2014) describe project-based learning (PjBL) as a teaching approach that enables students to participate in a sustained and collaborative manner while also concentrating on a particular project that is frequently structured around a driving topic. Not only does project-based

learning assist students in gaining key abilities in their disciplines, but it also assists them in developing general skills such as leadership, communication, and collaboration with others. In addition, the most effective method for resolving the issues that are present in the English classroom is to include technology and social media in project-based learning (PjBL). Technology and social media platforms are utilized by students both inside and outside of the university setting, and it is common knowledge that these platforms are utilized both inside and outside of the framework of project-based learning (PjBL) group work (Lau, 2017; Fonteijn & Dolmans, 2019).

The use of social media and other forms of technology in the classroom is nothing new; in fact, it has become an essential topic in today's education. Huang et al. (2019) explained that information technology has become an indispensable tool in the classroom. Not only does it provide access to numerous amounts of data, but it also can expand both individual and group capacities for learning. According to their definition, educational technology encompasses a broad spectrum of methods, resources, and practices that facilitate learning in areas such as inquiry, communication, knowledge representation, construction, and problem-solving. If they want their students to be actively involved in their learning and, more significantly, if they want to achieve the instructional goals, teachers need to think about how to use the ever-evolving media and technology in the classroom. "Digital learners" are the students of today who have grown up with the internet, smartphones, and social media at their fingertips (Schrum et al., 2016).

Some studies explored the use of technology or social media in project-based learning. Oh et al. (2020) investigated the effects of social media on creative media students' learning and how project-based learning using SDT affected students' engagement and motivation. Findings from this study support the idea that social media can be a powerful tool for increasing students' motivation to learn. The article presents the findings of an action research project that was conducted in a course on creative media design. The project asked students to create an online portfolio using Facebook as a medium. Obtaining smooth communication with classmates, teachers, and the general public outside of class was another incentive for the students to enhance their autonomous learning outcomes.

The second study was conducted by Mamadaliyev et al. (2022). In this study, they looked at how special education teachers might benefit from using project-

based learning technologies in their courses. The results demonstrated that special education teachers are making good use of PBL technology and plan to continue doing so in the classroom. There was a lot of video-based project-based learning and remote education; they had the technology; the students were engaged; they felt they connected with the students; and, best of all, it was accessible from any smart device, at any time. The third study is conducted by Al-Abdullatif and Gameil (2021). The purpose of this study was to explore the impact that the incorporation of digital technology has on the academic performance of students through the adoption of project-based learning in an online learning environment. Students' academic performance is positively impacted by the integration of digital technology into the PBL environment, as indicated by the results, which are related to the technology acceptance model (TAM) and students' learning engagement. This study's findings provide credence to the idea that incorporating digital tools into project-based learning (PBL) allows for more fluid and efficient communication, which in turn improves student-peer contact, collaboration, and project completion.

The first study concentrates on the advantages of social media, particularly in terms of student engagement and motivation. Consequently, the second study focused on the application of project-based learning technology in the professional development of special educators. The last study emphasized the academic performance of students in PjBL classrooms and the advantages of technology. Compared to previous studies, this study focused on the use of technology and social media for 5 different purposes. Those are to learn in the classroom, communicate, seek the sources, develop the project, & present the product. Then this study also explored the student teacher's perceptions of the benefits and

challenges of the use of technology and social media in writing journal projects.

Research Method

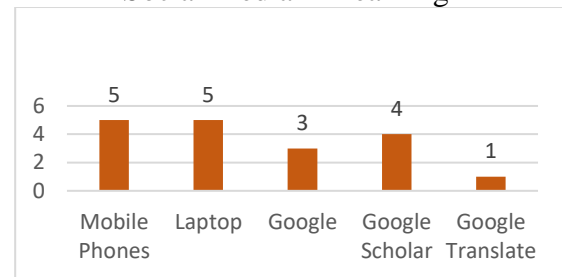
The objective of this study was to investigate the utilization of technology and social media in the classroom for five distinct purposes: learning, communication, resource acquisition, project creation, and product presentation. The study also examined the viewpoints of student teachers regarding the advantages and difficulties of utilizing technology and social media for writing journal assignments. The study utilized a case study methodology, which entails a comprehensive analysis of a singular subject, such as a corporation, historical occurrence, or societal issue. Yin (2018) and Stake (1995) state that case studies involve thorough examination and analysis of a specific subject within its surrounding context. Case studies offer a more in-depth analysis compared to general surveys, as they thoroughly investigate the intricacies of the subject matter. Additionally, they prioritize comprehending the context and environment that exert an influence on the subject's behavior or consequences. Therefore, this research meets the requirements of a case study. The participants consisted of 18 student instructors enrolled in the English teaching department at Wiralodra University. Information was gathered via a questionnaire and interviews that followed a semi-structured format. The survey was conducted using Google Forms and shared over WhatsApp groups. Subsequent to the completion of the questionnaire, semi-structured interviews were carried out. The gathered data were thereafter examined qualitatively to offer a thorough comprehension of the student instructors' experiences and perspectives concerning the utilization of technology and social media in their academic endeavors.

Finding and Discussion

The Use of Technology and Social Media in Learning

The findings demonstrated that the majority of student instructors utilized mobile phones, laptops, Google, Google Scholar, and Google Translate to facilitate their classroom learning activities. The data from the questionnaire showed that.

Figure 1. The Use of Technology and Social Media in Learning



The bar chart illustrates the use of technology and social media in learning by student teachers, with Mobile Phones and Laptops being the most used tools, each with a count of 5. Google Scholar is also popular, with 4 uses, followed by Google with 3. Google Translate, however, is the least used, with only 1 mention.

These technological tools were essential to their educational process, as they facilitated the simple access to scholarly articles, information, and translation services. According to Okoye et al. (2022), the combination of digital technology and literacy has the potential to shift the teaching and learning process in higher education institutions, hence boosting the overall quality of the educational experience. In addition, the utilization of social media in project-based learning courses has been promoted under specific circumstances (Oh et al., 2020). The integration of digital learning into teaching strategies has been emphasized in order to improve practical as well as efficient of teaching (Jrall, 2023). In the interview S2 stated that

I use a laptop to complete my project...I use it for almost all

activities from seeking the article to writing journal

To finish the project, S2 used a laptop computer for almost all of her tasks of the project. This encompasses everything from looking for publications that are pertinent to her area of study to composing her journal. The laptop is an invaluable instrument that makes it possible for them to effectively carry out a broad variety of tasks that are essential to the successful completion of their project. When it comes to their academic work, it is an indispensable tool because of its adaptability and accessibility, which enables them to effectively manage and carry out a variety of duties that are associated with the project. This statement is supported by Reisdorf et al. (2020) who stated that laptops are crucial in the classroom because they allow students to access course materials, take notes during lectures, and finish assignments quickly. Another respond comes from S12, in the interview S12 stated that

To seek the references...I usually use Google Scholar and E-Journal Web...I tried to find the journal that free to download

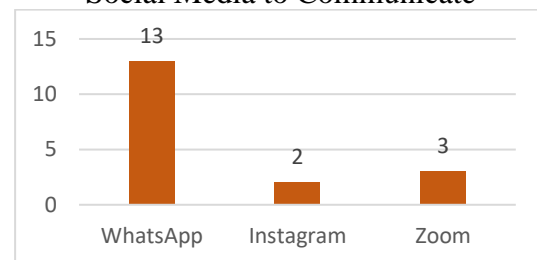
S12 typically used Google Scholar and E-Journal websites to find references. S12 searches for journals that are free to download. These resources provide access to a wide range of academic articles, which are essential for their research. By focusing on freely available journals, S12 can efficiently gather the necessary information without incurring additional costs. The statement is supported by Gusenbauer (2018) who stated that Google Scholar and online journals provide scholars and academics with a number of advantages that are beneficial when it comes to creating articles. Access to scholarly papers on the internet is made more efficient and effective by Google Scholar, which is a search engine that is

widely utilized in the academic community.

The Use of Technology and Social Media to Communicate

The student teachers used WhatsApp, particularly WhatsApp Group and Video Call, as well as Instagram and Zoom, to communicate with their friends. The result of questionnaire showed that

Figure 2. The Use of Technology and Social Media to Communicate



The bar chart illustrates the use of different platforms by student teachers for communication. WhatsApp is the most frequently used, with 13 instances, significantly higher than the other platforms. Zoom follows with 3 instances, suggesting it is also used, though far less frequently. Instagram is the least utilized, with only 2 mentions. This indicates that student teachers primarily rely on WhatsApp for communication, with Zoom and Instagram playing smaller roles in their communication preferences. These digital platforms were essential for maintaining social connections and facilitating group discussions. In the interview session, S5 stated that

To communicate with our members, we make a group in WA, ya... WA Group...so, in Wa Group we can share everything like articles for references or ask to do our task

To connect with their members, S5 established a WhatsApp group. The student teachers can share anything within this WA Group, including articles that may be used as references and requests for tasks

to be completed. This platform makes it simple for everyone to remain informed and effectively collaborate, which in turn makes it easier for people to share information and coordinate activities that include groups of people. This statement is in line with Lee et al. (2023) who stated that WhatsApp groups have gained a lot of attention due to the positive effects they have on academic discourse. They make it possible for students to form groups to share messages and improve group communication, which is especially useful for academic teams that are part of clubs and societies in higher education. Another response comes from S7, in the interview S7 stated that

It depends, when I get information from Instagram, I directly DM my friend on Instagram, but for the majority, I use the WA group.

When S7 got information on Instagram, S7 directly messaged her friends on Instagram. However, for most interactions, S7 used the WhatsApp group. This approach allows them to quickly share and discuss information on Instagram while relying on the WhatsApp group for the majority of their communication needs, ensuring efficient and organized exchanges with their peers. The statement is supported by Carpenter et al. (2023) who stated that Educators have investigated the possibility of utilizing Instagram as a means of delivering educational information, facilitating professional learning, networking, community building, and identity creation in this age of pervasive social media. Thus, S14 also used Zoom Meetings to communicate. In the interview, S14 stated that

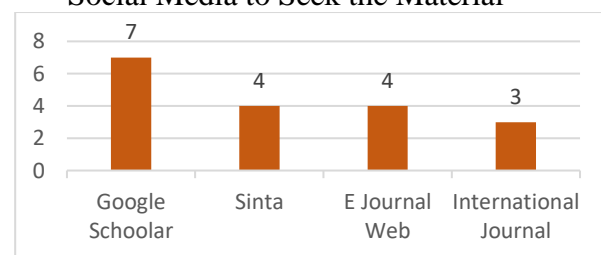
When we need to share our project and discuss directly, we use Zoom meetings...free Zoom meetings, so it is less than an hour heheee

S14 and the member of the group use Zoom meetings whenever they need to share their project with others and have a direct conversation about it. They choose to participate in free Zoom meetings, which typically last for a little under an hour. By doing so, they can present and discuss their idea effectively while also taking advantage of the free services that Zoom provides. Due to the restricted amount of time available, talks can be focused and succinct. The statement is supported by Ching et al. (2023) who stated that there has been a significant amount of research and analysis conducted on the utilization of Zoom for academic purposes. The success of Zoom in the field of education can be attributed to its many benefits, which include the ability to facilitate real-time interactions, low costs, and the simplicity of information sharing and presentation.

The Use of Technology and Social Media to Seek the Material

The student teachers obtained their information from a variety of academic sources. The data from questionnaire showed that

Figure 3. The Use of Technology and Social Media to Seek the Material



The student teachers went to the widely used academic literature search engine Google Scholar. They looked through research publications using SINTA, an Indonesian scientific journal database. They also gathered pertinent papers and information using the electronic journal portal E-Journal Web. These many resources allowed the student instructors to get a variety of academic materials for

their work. They successfully supported their studies and increased their understanding through these activities. In the interview session S3 stated that

I use Google to seek material, then I type the title or topic that I want to find. After that, I go to the e-journal web and found the references there.

To discover resources, S3 started the process by using Google to search for specific and interesting subjects or titles. Upon collecting preliminary data, S3 proceeds to browse e-journal websites to discover scholarly sources. By combining various sites, S3 can acquire extensive and reliable information for the research. Thus S8 also stated that

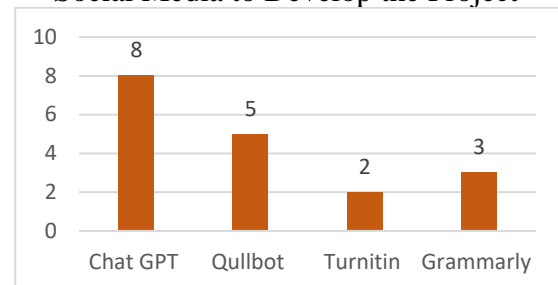
I prefer to use Google Scholar and Sinta to find the journal for theory or literature review.

S8 prefers using Google Scholar and SINTA to find journals for theoretical or literature reviews. Google Scholar provides access to a vast range of scholarly articles, while SINTA, an Indonesian database, offers additional academic resources. By utilizing these platforms, S8 can efficiently gather relevant and credible literature for the research. This approach ensures that S8 has access to a comprehensive collection of academic materials necessary for thorough and well-supported reviews. The statement is in line with Gusenbauer & Haddaway (2020) who stated that A large number of academic writers use Google Scholar to search for scholarly articles, demonstrating the tool's influence on academic culture. Google Scholar is a platform that is widely utilized to evaluate academic performance, conduct citation analysis, and look for academic materials belonging to a variety of fields (Tang et al., 2021).

The Use of Technology and Social Media to Develop the Project

The student teachers utilized a variety of tools in order to build their project after they had gathered all of their resources. The data from questionnaire showed that

Figure 4. The Use of Technology and Social Media to Develop the Project



The bar chart shows the use of various tools by student teachers to develop their projects. ChatGPT is the most frequently used tool, with 8 instances, indicating it is the preferred choice for project development. Quillbot follows with 5 uses, showing moderate usage. Grammarly and Turnitin are used less frequently, with 3 and 2 instances, respectively. This suggests that while AI-powered tools like ChatGPT and Quillbot are popular, tools focused on plagiarism and grammar are used to a lesser extent.

Chat GPT, an advanced language model, was utilized by them in order to provide assistance with writing and the generation of ideas. In order to examine and enhance their grammar and writing style, Grammarly was utilized. This helped to ensure that their work was clear and accurate. They took advantage of Turnitin to check for instances of plagiarism, so ensuring that their work was original and appropriately cited. Additionally, in order to improve the overall quality of their writing and edit the information that they had created, they utilized Quillbot, which is a tool for paraphrasing. Through the utilization of these resources, the student teachers were able to produce a project that was polished and expertly produced. Through the utilization of this assortment of resources, they were able to guarantee that their work was precise, unique, and

effectively communicated their views. In the interview session S10 stated that

My lecturer asked us to check our grammar in Grammarly, So I used Grammarly and Turnitin also to check for plagiarism

S10 stated that the lecturer instructed the student teachers to check the grammar using Grammarly. Following this, S10 used Grammarly to improve the quality of the grammar and writing. Additionally, S10 also employed Turnitin to check for plagiarism. This ensured that the article written was not only grammatically correct but also original and properly cited. By using both tools, S10 was able to enhance the quality and integrity of the assignments. In the writing process, Grammarly and Turnitin are invaluable resources. One of the most well-known writing aids powered by artificial intelligence, Grammarly, can identify and fix grammatical, spelling, punctuation, and vocabulary problems (Fitria et al., 2022). Thus in the interview S15 also stated that

I use AI like Chat GPT and Quillbot. But I still read articles, to find the theory because sometimes the references in Chat GPT are not really good. I mean it's hard to find the references to write in bibliography

S15 used AI tools like Chat GPT and Quillbot for writing assistance. However, S15 still reads articles to find theories since Chat GPT's references are sometimes not reliable for the bibliography. It's challenging to locate proper citations through AI alone. Therefore, by combining AI tools with reading actual articles, S15 ensured that S15 has accurate references for the bibliography and a solid theoretical foundation for the project. The statement is supported by Castillo-González et al. (2022) who stated that ChatGPT has been

recognized for its applications in academic editing, the management of enormous text volumes, the comprehension of language structures, the detection of errors, the improvement of writing quality, translation, summarization, data analysis, and the identification of new trends. Furthermore, in order to improve the accuracy and professionalism of writing, QuillBot is an internet application that may be used to perform tasks such as paraphrasing, avoiding plagiarism, summarizing complex sentences, and improving grammar (Fitria et al., 2022).

The Use of Technology and Social Media to Display the Work

Canva and PowerPoint (PPT) were the final tools that the student teachers utilized to present their work. The data from questionnaire showed that

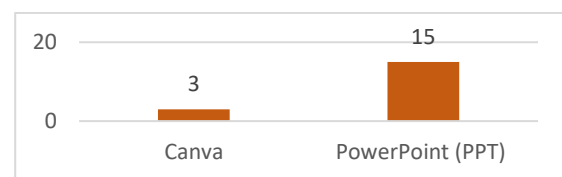


Figure 5. The Use of Technology and Social Media to Display the Work

Through the use of PowerPoint, they were able to construct presentations that were both professional and structured, which enabled them to successfully organize and display the information they had. The graphic design application known as Canva made it possible for them to create slides that were visually appealing and had innovative components and layouts. Through the utilization of the advantages offered by both tools, they were able to create presentations that were both professional and interesting. By taking this approach, they were able to ensure that their work was not only educational but also visually engaging, which improved their capacity to express their ideas in a way that was both clear and successful. It was proved that they were able to incorporate technology and design

into their instructional initiatives through the use of PowerPoint and Canva, which also served to showcase their creative abilities and technical expertise. In the interview, S16 stated that

We present the result of the project by using PPT. So after the project is finished, we are asked to present the result oh ya...we also use Canva

Through the use of PowerPoint, S16 presented the findings of the project. Following the conclusion of the study, the student teachers were requested to do a presentation in which they discussed the findings. In addition, S16 made use of Canva, which enabled to development of visually appealing graphics, to improve the slides. To efficiently communicate the results of the project in a manner that was both engaging and professional, the student teachers utilized PowerPoint for its structure and Canva for its creative capabilities. This statement is supported by Mahdi (2022) who stated that PowerPoint enhances presentations by incorporating visual aids, text, images, charts, and multimedia elements. This helps presenters communicate their ideas more effectively, engage the audience, and improve the overall quality of their presentation. By using these features, presenters can make their content more dynamic and easier to understand, ensuring that their message is conveyed clearly and memorably. Thus, Canva is a graphic design platform that provides customizable templates, graphics, illustrations, and design elements for creating presentations. This tool allows users to design visually appealing and professional slides easily. By offering a wide range of design resources, Canva helps users enhance the quality of their presentations, making them more engaging and effective (Urumov et al., 2023).

The Student Teachers' Challenges in Using Technology and Social Media

Using technology and social media to generate journal articles presents several challenges that readers must overcome. Locating relevant reference journals, which can be a time-consuming process, is one of the most significant challenges. In addition, gaining access to journals that do not provide open access might be difficult because these journals frequently provide subscriptions or require charges. Since unpredictable internet connections make it difficult to access online materials, connectivity concerns can also be a barrier to research endeavors. The scenario is made much more complicated by the limited amount of internet data available, which limits the capacity to download and view essential information. The ability to efficiently obtain and make use of academic resources to write journal articles is made more difficult by these limitations. In the interview session, S7 stated that

One of the problems is of course seeking appropriate journal articles because I ever found interesting articles, but they cannot be downloaded. Because it is not free. So I find another journal article

Finding appropriate journal papers is one of the challenges. S7 frequently encounters interesting articles that are unavailable for distribution due to the cost. When something like this occurs, S7 is required to look for further journal publications. Because of this, it is difficult for S7 to have access to all of the information that S7 requires for the research. Thus S10 also stated that

Maybe connectivity ya...I don't have Wi-Fi at my home. So I use Wi-Fi on campus, but sometimes the Wi-Fi signal is not smooth

Connectivity has been a challenge for S10 as S10 does not have access to Wi-Fi at home. S10 depends on campus Wi-Fi, but occasionally the signal can be inconsistent and unreliable. It can be quite challenging to consistently access the internet for research and studies, which can hinder the efficiency of completing work. Thus, S13 also stated that

I have to reduce my purchases to buy snack at campus because I need to buy an internet quota. Yeah I think that's my problem

S13 had to limit the spending on other things because S13 needed to budget for purchasing internet data. This has become a significant challenge for S13 to manage. The statement is in line with Widiastuti et al. (2021) who stated that students or teachers face numerous challenges when it comes to conducting online assessments and integrating technology in the classroom. These include slow internet networks, costly internet quota prices, limited access to computer and smartphone devices, and a lack of proficiency in digital technology skills.

The Student Teachers' Advantages in Using Technology and Social Media

The use of technology and social media offers numerous benefits for student teachers especially to complete their projects. Initially, it enhances communication by facilitating more efficient and transparent information exchanges. Secondly, it facilitates the acquisition of resources, which expedites the completion of assignments. Third, it results in articles of superior quality, as there is a greater abundance of information and instruments to improve the content. By utilizing these advantages, students and researchers can work more efficiently, produce higher-quality work, and complete duties more quickly. In general, this method facilitates academic success by enhancing the efficacy of the research

and writing processes and providing valuable resources. In the interview, S4 stated that

I think by using the WA group, it will be easier for us to communicate. Because we always bring our handphones everywhere we go right? So, I can directly answer.

Communication is simplified through the utilization of a WhatsApp group. S4 is capable of responding to communications promptly and directly since S4 consistently carries our phones. The WhatsApp group's convenience allows the student teachers to promptly share updates, ask questions, and provide feedback, thereby improving our capacity to collaborate effectively. Thus S8 also added that

When I use technology and social media, it can fasten my work to complete the project. So, I can speed up to collect the assignment

S8 can complete the assignments more quickly by utilizing technology and social media. These tools enable S8 to work more quickly and efficiently to collect the requisite information and resources. The entire process is more effective and efficient as a result of the increased speed and efficacy of data collection and collaboration. Thus, S9 is also stated that

I do hope it can create a better-quality of articles. Because we can get information by using technology and social media.

S9 is optimistic that the utilization of technology and social media will result in articles of superior quality. These instruments enable student teachers to rapidly and effortlessly access a diverse array of information. It is possible to acquire more comprehensive and current data for the research by utilizing online

resources and social platforms. This access to a variety of information sources can enhance the accuracy and profundity of the work, resulting in articles of higher quality. The statement is supported by Wil et al. (2019) who stated that utilizing social media platforms such as Instagram and digital programs has many advantages to aid students in composing descriptive texts, enhancing writing abilities, and easing the creation of popular articles. These platforms assist in the form of visual media support, one-on-one coaching, and detailed feedback, all of which can improve the quality of students' writing and their level of involvement. Thus, Nazari et al., (2021) and BaHamam et al., (2023) also stated that AI-powered writing tools offer valuable support for students in academic writing, helping to foster a learning mindset, improve writing abilities, and offer constructive feedback and assessment.

Conclusions

This research study found that the majority of student teachers predominantly depended on computers, web browsers, and Google Scholar for their classroom learning activities. These instruments were fundamental to their research and study methodologies. The student teachers utilized a range of technologies, such as WhatsApp (specifically WhatsApp Group and Video Call), Instagram, and Zoom, to engage in contact with their classmates. These platforms enabled instantaneous debates and collaborations, thereby improving their capacity to remain linked and efficiently exchange information.

The student teachers utilized resources such as Google Scholar, SINTA (an Indonesian academic database), and several e-journal websites to access academic literature. These platforms provided users access to a diverse array of scientific publications and materials essential for their academic pursuits. The project development process involved the utilization of several tools. ChatGPT was

used for content idea generation, Grammarly for enhancing writing quality and proofreading, Turnitin for ensuring originality and preventing plagiarism, and Quillbot for paraphrasing and refining text. These technologies jointly contributed to the development of well-organized and superior projects. The student teachers utilized PowerPoint (PPT) and Canva for their presentations. PowerPoint played a crucial role in developing organized presentations, whereas Canva was utilized for crafting visually captivating slides and images. The utilization of these tools empowered the student teachers to deliver their assignments with a polished and captivating approach.

Nevertheless, numerous obstacles were recognized in utilizing technology and social media to produce journal papers. To back up their conclusions, they needed to identify relevant academic articles, which was a huge difficulty. Furthermore, the task of obtaining articles from non-open access journals was a considerable obstacle due to the substantial expenses and subscription prerequisites involved. Their continuous access to online resources was restricted by connectivity concerns, such as inconsistent internet connections, and limited internet data. The study highlighted several benefits associated with the utilization of technology and social media in academic endeavors, despite the obstacles that were mentioned. Enhanced communication was a significant advantage, facilitating improved collaboration and the exchange of knowledge among peers. The availability of digital tools and online databases made it easier to access resources, which in turn expedited the completion of assignments. The utilization of sophisticated technologies such as Grammarly and Turnitin played a significant role in generating articles of superior quality since these tools assisted

in enhancing the material and guaranteeing its authenticity.

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