

DOI: <https://doi.org/10.5281/zenodo.12672901>

THE USE OF TRADITIONAL AND DIGITAL POSTER PRESENTATIONS AMONG UNIVERSITY STUDENTS

Ching-Yi Tien

(tien@isu.edu.tw)

Department of International Media and Entertainment Management, I-Shou University
No.1, Sec. 1, Syuecheng Rd., Dashu District, Kaohsiung City 84001, TAIWAN

ABSTRACT

This study investigates students' attitudes and perceptions toward printed and digital poster presentations, examining the benefits and drawbacks of engaging in poster assignment activities. The research questions addressed are: 1. What are the attitudes and perceptions of university students, both international and local Taiwanese, towards printed and digital poster presentations as an academic assessment? 2. What factors influence these attitudes and perceptions, and how do they differ between international and local Taiwanese students? By comparing two approaches launched across two semesters, the study finds that both poster presentation assignments effectively foster teamwork and cooperation among university students. Poster presentations are particularly beneficial for practicing English communication skills, especially when English is the medium of instruction and learning. Notably, the innovative digital poster presentation assignment allows students to showcase their talents directly to the audience and receive immediate feedback, enhancing the learning experience. Most participants find this approach convenient, constructive, and engaging. While some students express concern that an overreliance on digital media might diminish their design skills, many appreciate the convenience and the visual and audio functionalities of digital posters. However, the study is limited by its small sample size and cannot be generalized to broader contexts or populations. Further research with larger samples is needed to gain a more comprehensive understanding of these issues.

Keywords: Printed poster, digital poster, oral presentation, communication competence.

INTRODUCTION

Presentation assignments are commonly used in higher education contexts for students to illustrate how the projects or research were conducted or implemented. The common forms of presentation students use are traditional presentations or poster presentations. In many cases, college students are required to present their projects or research findings in the form of poster presentations, which can be in both traditional and digital formats. Poster sessions provide an opportunity for students to showcase their work, engage in discussions with their peers, and receive feedback from faculty members. In addition, one of the advantages of poster presentations is that they provide more opportunities for students to practice speaking skills, create closer interaction between the speaker and the audience, and perhaps reduce anxiety for the speaker (Prichard & Ferreira, 2014), honing both oral and visual communication skills (Parker, et al. 2020) and promote teamwork, developing students' cooperation and collaborative skills (Stevkovska, 2022). The choice between traditional and digital poster presentations can significantly impact the overall learning experience, underscoring the importance of the presentation's effectiveness for students.

Traditional poster presentations involve creating a physical poster, typically printed on large-format paper or board and displayed at a designated location. These posters, often designed to include a concise research summary, key findings, and visual aids such as graphs, charts, and images, allow face-to-face interactions between the presenter and the audience (Woolsey, 1989; Pineda, 1999). This interactive nature enables real-time discussions and feedback, enhancing the research's learning experience and the credibility of the project or study. Cullen et al. (2019) discussed using poster presentations in Content and Language Integrated Learning (CLIL) university courses. They found that students were highly engaged in the interaction during the poster presentation and that these presentations played a significant role in developing students' English skills, making them more competent in their academic pursuits.

On the other hand, digital poster presentations, utilizing electronic displays such as large screens or projectors, offer a world of possibilities. They allow for incorporating dynamic visual elements, animations, and multimedia content, significantly enhancing the presentation. This digital format opens new avenues for creativity and engagement, making the learning experience more dynamic and interactive (Miller, 2006). Due to state-of-the-art technology, the tendency to use digital rather than traditional poster presentations is increasing. Kelly et al. (2020) found that nurse practitioner students evaluated the poster presentation (91% used digital poster form) significantly positively because it allowed students to learn valuable professional dissemination skills. Shatri and Shala (2022) confirmed that students who use interactive digital presentations achieved higher learning outcomes and were more interactive in the class. Besides, integrating interactive digital presentations positively affects the students' performance during the technology class.

In a study by Square and Heyde (2018), they explored using poster presentations as a flipped learning technique in introductory physics. Students were required to summarize chapters before class and then work in small groups to create paper posters on essential physics concepts. These posters were presented in small groups, recorded, uploaded to iKamva, and reviewed by peers. The study aimed to assess the effectiveness of this method in improving students' presentation skills and comprehension of the course material. The results showed that students enjoyed the poster design and the presentation process, but there were issues with the quizzes and chapter summaries. Research conducted by Newsom et al. (2021) comparing digital and printed posters for teaching and learning in pharmacy education found that students acknowledge the effectiveness of poster presentations in improving their presentation and communication skills. Students also commented on the convenience and cost-effectiveness of utilizing digital poster presentations over printed posters.

Despite the studies mentioned above regarding the use of traditional and digital poster presentations, there is no existing research on the effectiveness and students' attitudes toward the use of traditional poster presentations versus digital poster presentations in Taiwan's higher educational context. Therefore, this study investigates university students' attitudes and perceptions regarding using two forms of poster presentations among international and local Taiwanese students. The research questions addressed are: 1. What are the attitudes and perceptions of university students, both international and local Taiwanese, towards printed and digital poster presentations as an academic assessment? 2. What factors influence these attitudes and perceptions, and how do they differ between international and local Taiwanese students?

COMMUNICATIVE COMPETENCE

In higher education, students are frequently required to deliver oral presentations and communicate effectively. Developing strong speaking skills and communicative competence poses significant challenges for students whose first language is not English. This is particularly crucial for university students studying in an English-only environment, where English is not their mother tongue. Moreover, with the advancement of technology, communication is increasingly shifting from physical to virtual environments, utilizing electronic equipment in various contexts. Consequently, exchanging information in a foreign language has become essential. This literature review examines the factors influencing the communicative competence of English as a Foreign Language (EFL) students, emphasizing the role of multimedia technology, academic English language skills, and anxiety.

Dzasezheva et al.'s study (2023) showed that the use of multimedia educational presentations (MEPs) in foreign language teaching significantly enhanced Russian students' foreign language communicative competence (FLCC). Students' motivation toward the course and pedagogy learning were boosted. The authors also suggested that multimedia presentations are efficient and highly recommended as a means of forming future teachers' FLCC. Similarly, Alzhanova and Chaklikova (2022) examined the development of students' professional foreign language communicative competence in a digital environment. The results show that seventy Kazakhstan students improved their skills in spontaneous business discussion with rational construction of communication, proper speech intonation, lexical sufficiency within the framework of speech topics, and grammatical correctness by using the Google Meet online communication platform, mobile applications, and Facebook network.

Apart from the research investigating how to enhance students' foreign language communicative competence in a pedagogical context, the issue of language barriers should not be overlooked. Makayev et al. (2021) looked at improving high school students' language levels by mastering their communicative skills based on necessary teaching factors and eliminating possible obstacles. The results show that proper practical development of future specialists' communicative skills, considering all kinds of barriers, can improve their professional language growth and overcome their speech barriers. To enhance learners' English oral communication skills and reduce their anxiety while speaking a foreign language, Huang (2024) scrutinizes the impact of varied learning environments, particularly the reduction of anxiety and the facilitation of authentic learning through virtual reality, on 43 Taiwanese students' beliefs, confidence levels, and subsequent English language proficiency. The results of the study's quantitative and qualitative data indicated that the effectiveness of VR communication tasks provided a comfortable environment for students to speak English and reduced the fear of negative evaluation and anticipated anxious behaviors.

METHODOLOGY

During the 2022-2023 academic year, the participants, sophomore students majoring in the Department of International Media and Entertainment Management at a southern Taiwan university, took storytelling classes in the fall semester. As part of the course requirements, students were grouped into teams of three to four members and tasked with creating printed poster presentations of their own stories for the end-of-the-semester project (hereafter the final project). These posters were then presented in class, and both the instructor and peers provided evaluations and comments on the creativity of the stories, visual illustrations, and related comments—the same group of students enrolled in advertising classes in the spring semester. As part of the course requirements, they were asked to create a digital poster presentation in week nine to present their final project ideas and outlines as per the instructor's guidelines. The

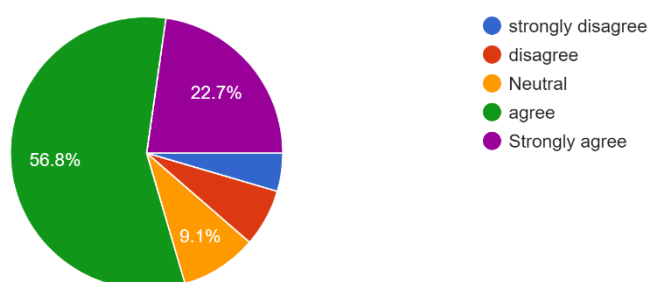
activity was called the digital poster session. During the session, each group should display their content on their own laptops. There were 51 students registered for the class; hence, students were divided into 14 groups. These 14 groups were then divided into Group A (7 groups) and Group B (7 groups). Each presenter would present for five to ten minutes and would repeat the presentation multiple times as Group B students, the audience, visited each booth. One and half hours later, Groups A and B swapped, Group B presented their project ideas, and Group A was the audience. The use of laptops for delivering presentations was detailed during the activity. The engagements between presenters and the audience were meaningful and productive. Audiences can provide feedback to the presenters by either directly speaking or by writing comments or suggestions through the QR code provided by each group.

After the digital poster session, students completed an 18-item survey that included demographic information, multiple-choice questions on students' attitudes and preferences between printed and digital poster presentations, and three open-ended questions to gain more insights into students' views. The descriptive data was analyzed via the Statistical Package for Social Science. The results are discussed in the following section.

RESULTS

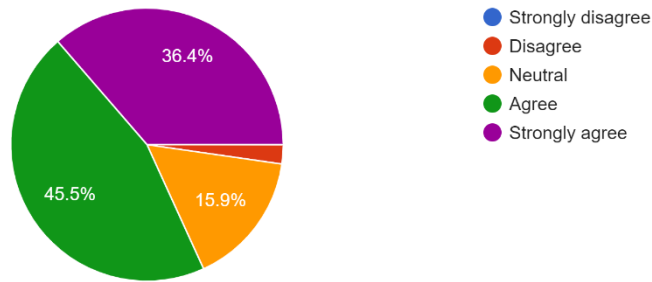
In the fall semester of 2022, 45 students enrolled in the Storytelling course, and in the spring semester of 2023, 51 students enrolled in the Advertising course. Forty-four students took both classes and completed the questionnaire survey. The majority of the respondents were female students 34 (77.3%), eight male students (18.2%), and two who preferred not to be identified (4.5%). There were 25 (56.8%) international students and 19 (43.2%) local Taiwanese students. One of the main aims of this study is to find out students' preferences between printed and digital poster presentations. When asked which format they preferred to create their poster, 39 (88.6%) participants opted for a digital poster, and 5 (11.4%) chose a printed one. Also, 36 (81.80%) of the students preferred to present their presentation content using a digital format, and 8 (18.2%) liked the printed format. Questions about poster format preference revealed that 84.1% favored digital posters, while 15.9% preferred printed posters. The majority of the students (79.5%) agreed that utilizing digital tools is an effective method for creating their posters. Yet, of 9.1% of students who stayed neutral on this question, 11.3% thought otherwise. Some students still preferred to hand-draw posters. Figure 1 presents the result.

Figure 1. I like to create a poster using digital tools.



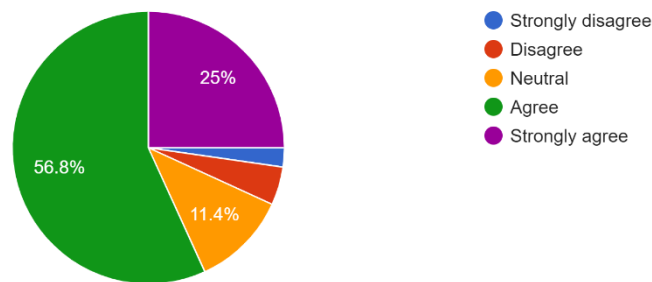
Regarding the quality, clarity, and attractiveness of poster content, most students, 86.3%, perceived digital posters as better than printed ones. The findings indicate students' strong preference for using digital poster presentations as a good idea for the class (81.9% vs. 18.1%, respectively). Figure 2 shows the results.

Figure 2. The digital poster presentation is a good idea.



The primary purpose of both printed and digital poster presentations is to introduce and explain the creators' innovative ideas for their projects and receive feedback and comments from the audience. Therefore, communication skills are essential in this context. Presenters needed to engage in intensive conversations with the audience, particularly during the digital poster session. One research question was addressed on this issue. Figure 3 reveals that 81.8% of the students confirmed that digital poster presentation improved their communication skills. Moreover, most of the students (68.1%) indicated that the feedback they received during the digital poster presentation session was highly beneficial.

Figure 3. The use of digital poster presentations helped me improve my communication skills.



Descriptive statistics were computed and analyzed to determine whether gender was an issue regarding the survey questions. The results ($p > 0.05$) indicate no differences among different genders. An independent t-test was also utilized to explore the attitude and perception differences between local Taiwanese and international students. The results showed a significant difference in Statement 6, "the use of digital posters is good for my poster creation," the scores between local students ($M = 4.32$, $SD = 0.627$) and international students ($M = 3.26$, $SD = 1.098$); $t(26.804) = 3.757$, $p < 0.001$, with a mean difference of 1.057. This suggests that local students scored significantly higher on Statement 6 than international students, meaning local Taiwanese students preferred to use digital tools to create their posters. Another results showed a significant difference in Statement 15, "the use of digital poster presentation is a good idea," scores between local students ($M = 4.52$, $SD = 0.586$) and international students ($M = 3.68$, $SD = 0.749$); $t(42) = 4.155$, $p < 0.001$, with a mean difference of 0.836. This suggests that local Taiwanese students strongly agree that using digital poster presentations is a better idea than international students.

Three open-ended questions were used to collect qualitative data on participants' experiences with printed and digital poster presentations in class. The first and second questions asked the

students to provide feedback on the advantages and disadvantages of using digital posters compared to printed posters for teaching and learning. The last question asked students to give feedback on using digital poster presentations. The significant advantages of using digital posters are the following:

- Environmental friendliness and reduced paper use (10 responses).
- Easy access to information (14 responses).
- No budget needed, cost-saving, and labor-saving (6 responses).
- Easy content creation and modification (6 responses).

Some also mentioned that digital posters can include audio features that printed posters do not have. Digital poster presentations are more interactive, allowing presenters to communicate more directly and efficiently with the audience. Several local students expressed that they were very nervous at the beginning of the digital poster presentation session because they needed to talk to the audience at a very close distance. They were worried that their English was not fluent and that the audience might not understand their meaning. Yet, after a few interactions with peers, they got used to the pattern and realized that their communication skills had improved after the session.

In contrast, the main disadvantages of digital posters reported by the participants are as follows:

- Requires technology skills, electronic devices, and Internet service (9 responses)
- Not easy to accessible for elderly people (4 responses)
- Potential technical issues (6 responses)
- Lost creativity when relying too much on digital tools (5 responses)
- Lack of physical interaction and touch (6 responses)

When the researcher asked the participants what “lack of physical interaction and touch” meant, the students replied that it meant they could not physically draw or design on the paper poster. Additional feedback from students regarding the digital poster presentation: Many reported that the activity was fun and engaging because they could talk to a larger audience, exchange ideas, and get immediate feedback from peers. Some mentioned that communication skills were essential for the digital poster presentation session. The drawbacks were that they could not reach as many audiences as possible due to the limited time allotted for the activity and a lack of English communication skills.

DISCUSSION

This study addresses two research questions: 1. What are the attitudes and perceptions of university students, both international and local Taiwanese, towards printed and digital poster presentations as an academic assessment? 2. What factors influence these attitudes and perceptions, and how do they differ between international and local Taiwanese students? To answer the first research question, local and international students’ attitudes and perceptions toward digital poster presentations were more favorable than printed poster presentations as a learning tool for delivering their project ideas and fulfilling the academic requirements. This finding aligns with a study conducted by Newsom et al. in 2021. In their research, more than 95% of students perceived that poster activity improved their poster creation and communication skills. For this study, the researcher deliberately assigned a printed poster presentation in the first semester and a digital one in the second semester. The format of the presentation for the printed poster involved an oral presentation in front of a large audience. In contrast, the digital poster presentation involved presenters introducing their content to a smaller audience in a repeated pattern. This study indicates that students preferred digital poster presentations due to better interaction and engagement with the audience. Additionally, by

restating their content multiple times, students' presentation and communication skills improved. Some students commented in the open-ended question that they usually feel more apprehensive when speaking in front of a large audience; in comparison, they feel less anxious and more willing to speak, especially using English, to a small group of people. The findings align with Prichard and Ferreira's (2014) study, which suggests that presenting posters multiple times to small groups offers several benefits. These include more speaking opportunities, increased interaction between the presenter and the audience, and reduced anxiety for the presenter.

In a study comparing students' attitudes and perceptions of printed and digital poster presentations, it was found that the majority of participants preferred digital posters. This was due to the eco-friendly nature and cost savings associated with digital posters. Specifically, digital posters are considered more environmentally friendly as they don't require using paper from trees, and students don't need to spend additional money on stationery when creating them. Students enjoyed the digital poster presentation because it was fun and provided an opportunity for small-group teamwork. This is supported by Square and Heyde's (2018) research and Shatri and Shala's (2022) study. Shatri and Shala (2022) examined the impact and advantages of using interactive digital presentations in lessons. They found that students increased their level of cooperation and involvement during the process.

This study revealed that local Taiwanese students favored digital poster presentations over printed poster presentations more than international students. During the informal interview with the students, a few international students stressed the importance of physical crafts on paper posters. They were concerned that relying too much on digital platforms like Canva decreased their creativity in producing posters. However, one of the reasons students like to use digital tools to create posters is the visual appeal and audio effects. They have stated that digital posters are more attractive and eye-catching than printed ones.

CONCLUSIONS

This study investigates students' attitudes and perceptions toward printed and digital poster presentations and the benefits and drawbacks of engaging in poster assignment activities. By comparing two approaches launched in two semesters, this study finds that both poster presentation assignments are good for building teamwork and cooperation among university students, and both local Taiwanese and international students share the same views. Poster presentations are beneficial for students to practice English communication skills, mainly when English is the medium of instruction and learning. Significantly, the innovative digital poster presentation session assignment gives students a new approach to showcasing their talents directly to the audience and receiving immediate feedback from the enhance. The majority of the participants find this approach not only exciting but constructive and engaging. Although some students worry that relying too much on digital media to create PowerPoint content will decrease their ability to design, many are impressed by the convenience and visual and audio functions of digital posters. The limitation of this study is the case study that only includes a small sample size of the data and cannot be generalized to broader contexts or populations. Further research is needed to gain a more comprehensive understanding of this issue.

ACKNOWLEDGEMENTS

I want to extend my heartfelt gratitude to the students who have contributed to this research endeavor.

REFERENCES

- Alzhanova, A. & Chaklikova, A. (2022). Multilingual education: development of professional foreign language communicative competence of students in a digital environment. *International Journal of Web-Based Learning and Teaching Technologies (IJWLTT)*, 17(1), 1-13. <https://doi.org/10.4018/IJWLTT.294572>
- Cullen, B., Ssali, V. & Smith, C. (2019). Effectiveness of poster presentations for CLIL courses. *The 2019 PanSIG Journal*, 56-63.
- Dzasezheva, L., Rebro, O., Tikhonova, I., Potapova, O., Deputatova, N., & Rets, N. (2023). Impact of multimedia technology on the formation of foreign language communicative competence in students. *Revista Conrado*, 19(90), 279-303.
- Kelly, M. M., Blunt, E., Nestor, K., & Mondillo, J. (2020). Professional conference poster presentation: Innovative professional development assignment in nurse practitioner education. *Journal of Nursing Education*, 59(6), 345-8.
- Makayev, K., Makayeva, G., & Sigacheva, N. (2021). Factors of formation of foreign language communicative competence of future construction specialists through overcoming the language barrier. *E3S Web of Conferences* 274, 12002 (2021) <https://doi.org/10.1051/e3sconf/202127412002>
- Miller, J. E. (2007). Preparing and presenting effective research posters. *Health Services Research* 42(1), 311-28. <https://doi:10.1111/j.1475-6773.2006.00588.x>
- Newsom, L. C., Miller, S. W., & Chesson, M. (2021). Use of digital vs printed posters for teaching and learning in pharmacy education. *American Journal of Pharmaceutical Education*, 85(6), 398-402.
- Parker, A., Lewis, G. & Scott, M. J. (2020). Improving technical communication with a cue awareness intervention using poster presentations. *CEP 2020: Computing Education Practice* 2020, 1-4. <https://doi:10.1145/3372356.3372361>
- Prichard, C. & Ferreira, D. (2014). The effects of poster presentations and class presentations on low-proficiency learners. *TESOL Journal*, 5(1), 172-185.
- Pineda, R. C. (1999). Poster sessions: enhancing interactive learning during student presentations. *Journal of Management Education*, 23(5), 618-622. <https://doi:10.1177/105256299902300510>
- Shatri, K. & Shala, L. (2022). Evaluating the effect of interactive digital presentations on students' performance during technology class. *Education Research International*, 2022(4), 1-9. <https://doi:10.1155/2022/3337313>
- Square, L. S. & Heyde, V. P. van de (2018). Poster presentations as an approach to implementing a "flipped learning" pedagogy in introductory physics. *International Conference on Physics Education (ICPE)*, 1512(2020). <https://doi:10.1088/1742-6596/1512/012005>.
- Stevkovska, M. (2022). The use of research posters in the ELT classroom, *The International Journal of Applied Language Studies and Culture (IJALSC)*, 5(2), 21-6.
- Woolsey J. D. (1989). Combating poster fatigue: how to use visual grammar and analysis to effect better visual communications. *Trends Neurosci*, 12(9), 325-32. [https://doi:10.1016/0166-2236\(89\)90039-8](https://doi:10.1016/0166-2236(89)90039-8). PMID: 2480672.