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| RESEARCH ARTICLE

Teacher Educators' Attitudes toward Technology-Enhanced Learning and its Role in the Teaching Process

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| ABSTRACT
The major problem of the study is to determine the overall teacher educators' attitude towards technology-enhanced learning and its incorporation into teaching-learning process. This research is based on a descriptive survey which aimed to analyze teacher educators' attitude towards TEL. Data were collected from teacher educators working in different teacher education colleges and universities in China. The study will consist of 112 teacher educators during the school year 2021-2022. Majority of the students agreed that male teachers have a more structured approach, while female educators use various teaching methods and technology. Most of the students agreed that female educators are patient, while younger teachers are more familiar with current trends and technologies. Further, students value older teachers for their extensive knowledge and approachability on the other hand, professors are tough, demanding, research-oriented, and collaborative.

| KEYWORDS
Technology-Enhanced Learning; Teaching-Learning Process; Facilitate Learning; Multimedia Education

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1. Introduction

For teacher educators around the globe, the Covid-19 pandemic has been an adaptive and transformative challenge, one for which there did not exist any pre-configured guide for devising appropriate responses. As the pandemic runs its course, teacher educators are required to swiftly devise strategies to not only facilitate undisrupted learning for their current students (i.e., trainee teachers), but also provide a sustainable solution to address disruptions in teaching and learning in the future. During the pandemic, due to suspension of face-to-face (F2F) classes, the entire teaching and learning process was facilitated through human-technology interaction, i.e., through technology-enhanced learning (TEL). Scholars and researchers have underlined that technology has the potential to facilitate the education process, transform learning and teaching experiences, and support radical changes TEL helps both teachers and students by removing restrictions and disruptions to knowledge via the open and ubiquitous access that it offers. (Adhya, D. & Panda, S., 2022).

In the face of external challenges, higher education institutions had to implement learning technologies to disseminate knowledge among the learners and enhance teaching. In the wake of the SARS-CoV-2 pandemic, higher education institutions switched over to online teaching-learning methodology. In the present study, online teaching-learning (OTL) refers to higher education institutions conducting programs and courses using digital technology due to the teacher and the learner's physical distance. Indian institutions are of three major types based on their adoption of the online education model. The ones who already had the digital infrastructure, those with digital infrastructure but with optimal utilization capabilities, and those without any online infrastructure (Kamble, A., et. al., 2022). The latter two aspects are particularly evident in affiliated institutions that lack the technological infrastructure to transition to online teaching-learning or lack optimizing and utilizing it.

The transition towards online teaching-learning has been smooth for private universities compared to public institutions adapting to these changes. The article further highlights the concerns related to internet connectivity and lack of infrastructure in rural areas worldwide, with frequent power cuts being the norm in such areas. The transition towards OTL and the adoption of this technology mainly depends on the challenging aspects related to the internet and power infrastructure, accessibility to the online medium, and the soft aspects of the acceptance and usage of OTL by the faculty. Additionally, some enterprises have successfully introduced webbased e-learning as a platform for employees' education and training, thus creating a shared learning environment and strengthening employees' professionalism and information-related competencies (Warsi, 2020). The transition towards online teaching-learning has been smooth for private universities compared to public institutions adapting to these changes.

The impact of mobile technology usage on student learning in various educational stages has been the subject of ongoing empirical and review research. The most recent meta-analyses on various types of mobile technology use for potential benefits of learning covered the empirical studies up to about nine years ago. (Wang, J. & Zhou, T., 2023).

Although utilization of technology in education is greatly influenced by institutional and structural policies in the educational system, the use of technology in instruction is heavily dependent on teachers' acceptance of technology, as they often have the authority to decide on how classes should be facilitated. Simply put, when teachers believe that technology use in the classroom will bring benefits to themselves and to the students, then they are more likely to utilize it because of its potential in aiding them in their teaching duties. Research on Information and Communication Technology (ICT) use in education has consistently pointed to the importance of teachers' attitudes towards technology use in the classroom and intention to use technology for teaching. In the present study, we were interested in examining professional teachers' intention to use technology for instruction. In particular, the study aimed to investigate the factors that contribute to intention to use technology among a sample of Filipino basic education teachers from the Philippines. (David, A. & Aruta, J., 2022).

In the context of distance education, TEL helps to remove the constraint of distance and promotes interpersonal communication among teachers and students; facilitates a high level of interaction among learners, and engages in a comprehensive learning management system, such as collaboration tools, virtual classrooms, content authoring and capturing tools, and digital repository systems; and has been found to be more effective than only print-based distance learning courses. In distance learning TEPs, faculty attitude plays a crucial role in making an effective shift from traditional distance education delivery to technology-enhanced education and training (Panda, S., 2021).

The purpose of this study was to investigate teacher educators' attitude towards adoption of TEL in teacher education by examining the factors that encourage a successful TEL integrated curriculum during and post-Covid-19 period.

2. Review of Related Literature

This section of the study presents the literature review and studies on local and foreign sources, which may add more relevance and depth to the research study.

2.1 Educational Media

This article seeks the opinions, perceptions, and attitudes of faculty members about the strategies for using hologram technology in the learning environment. The research method was qualitative and based on this, 17 faculty members from Farhangian University Centers (CFU) and public universities in Iran were interviewed. The data obtained were analyzed using the content analysis method. The results, while providing valuable strategies in this field, show that the major strategies for using hologram technology in the learning environment included are "Promoting the efficiency of the curriculum in order to take advantage of hologram technology," "Sharing international experiences through hologram technology in the field of education" "Social, cultural and professional context building for the use of hologram technology" "Creating strategic planning in the field of hologram technology in education" and "Changing traditional approaches and adopting correct management actions in order to make optimal use of hologram technology". The results, show that this technology can definitely be improved and according to the trend it has adopted, it will be one of the main technologies in the field of education. This paper, provides the necessary strategies for the government and the private sector to use this technology in the school curriculum. (Jafari, E., 2023).

Candidates' perception of technological value orientations. Design/Methodology/ It was conducted based on data from 400 teacher candidates for explanatory factor analysis (EFA) and 680 teacher candidates for confirmatory factor analysis (CFA) in the 2018–2019 academic year. Expert opinions were sought for the content validity and face validity of the scale as well as the EFA and CFA were conducted for construct validity. EFA yielded a three-factor solution consisting of 12 items that accounted for 53.17% of total variance. These factors were labeled as "Negative Impact on Friendship, Honesty, and Responsibility", "Negative Impact on Overall Values", and "Positive Impact on Access to Information and Benevolence". Cronbach's Alpha internal consistency coefficient of the scale was found to be 0.75. Besides, findings from the CFA indicated that Technological Value Orientation Perception Scale

of Teacher Candidates is of adequate fit with 12 items under a three-factor construct. In addition, the convergent and discriminant validity results also supported the three-factor structure. This scale could of help researchers to measure the perception of prospective teachers about the impact of technology on value-orientations and to plan desired studies accordingly. (Yildirim, M., et. al., 2023).

This study examined the factors affecting minority students' learning experience in Wiki-based environments. These factors included perceived collaborative learning, sense of community, Wiki self-efficacy, and perceived learning experience. The relationships of these factors were explored. The participants were 45 African American students enrolled in two undergraduate-level management courses in which Wiki was used to facilitate the process of group work. A mixed methods approach was applied to analyze the collected data. Results indicated that sense of community and collaborative learning significantly contributed to perceived learning in Wiki-based environments. However, Wiki self-efficacy was not a good predictor of perceived learning. Most of the minority students were positive about their group learning experience that involved collaborative processes as well as the development of knowledge and skills. Emotional support and support for cognitive or meta-cognitive processing were identified as factors that had potential influences on Wiki-based collaborative group learning. (Kuo, Y., et. al., 2022).

The sudden outbreak of the Covid-19 pandemic resulted in a transition to an online teaching-learning (OTL) methodology, forcing India's institutions to adopt it. The present study investigates OTL's acceptance by faculty instructors/teachers employed in India's higher educational institutions using the technology acceptance model (TAM). A survey of 433 respondents studied the intention to use OTL by teachers. The study considered India's higher educational institutions and utilized web-based questionnaire survey methods for collecting the responses. The study found support for OTL's perceived usefulness and the perceived ease of use, facilitating conditions to be significant determinants for attitude towards the use of technology by users. The study introduced service conditions related to the faculty instructor/teacher's employment in the higher educational institutions and its bearing on their work routine. The study did not find service conditions as a significant determinant of attitude towards using OTL technology. The results present evidence of a valid model to predict technology acceptance among India's teachers. (Kamble, A., 2022).

The shift to emergency remote teaching during the COVID-19 pandemic has further revealed a range of issues related to technology-enhanced learning (TEL). Among these were educators' lack of prior exposure to more creative and participatory forms of TEL in credential coursework and professional development. To address the new realities of schooling, we must first understand the TEL practices that aspiring teachers have had in their teacher education courses. This study examined the TEL practices of aspiring teachers within and beyond their educational coursework prior to the COVID-19 pandemic, as well as their perceived degree of proficiency with these practices. Our survey research found that participants reported more experience and proficiency with TEL practices involving consumption-based and transactional modes of learning, and less experience and proficiency with practices related to creativity, collaboration, and knowledge generation. We discuss how these findings suggest improvements for credentialing programs in the area of TEL. (Aguilera, A., 2022).

The paper presents an experimental study aiming to explore primary school students' response to Mobile Seamless Learning activities. The educational intervention and the consequent investigation were conducted in a suburban primary school in Greece, with second grade pupils, in the context of a learning subject entitled "Studying our Living Environment". The participant students (n = 14) engaged in both face-to-face (in-class, outdoor) and online (home) collaborative and individualistic activities supported by a variety of digital applications. Primary research data were gathered upon completion of the intervention via 5 group interviews and 12 individual interviews. The findings have shown that Mobile Seamless Learning can facilitate pupils' active engagement and improve their attitudes toward collaboration. Moreover, this approach can lead to the development of a learning community that promotes learners' motivation, enables them to construct new knowledge, and develop essential skills. (Devourou, A., 2022).

2.2 Teaching and Learning Process

The potential of digital fabrication technology (DFT) in education has attracted the attention of many educational stakeholders over the last decade. However, there is scant literature on how in-service teachers take part in teacher professional development (TPD) to equip themselves with necessary DFT skills and knowledge. In response, this qualitative exploratory study aimed to identify characteristics of effective DFT-related TPD and the current status of the implementation of DFT in K–12 education in Hong Kong through interviews with local teachers and stakeholders. The findings reveal that DFT-related TPDs have had positive effects on teachers' skills and knowledge overall, but they were found to lack in-depth hands-on training and guidance on pedagogical aspects with practical class models. Teachers flexibly adopted formal and informal TPD depending on their own backgrounds, competencies, and needs. In addition, the following barriers to applying TPD learning outcomes to classroom practices were identified: limited hardware availability and access as well as a lack of open-learning classrooms, technical support and sustained professional development for teachers, technology integration into different subjects, and government-provided guidelines and frameworks. However, these limitations were found to afford new opportunities with respect to student-centered and collaborative teaching and learning environments. (Song, M., 2021).

This research paper evaluates how schools have embraced technological platforms as they shift from traditional learning methods to online learning methods, prior and during the covid-19 pandemic. Technological platforms are a suite of online tools that permit collaboration between teachers and students, as well as provide parents/carer visibility of their child's school work in real-time. Such platforms permit equality, the creation of authentic learning material and collaboration that previously was inaccessible. Professional development and student boot camps were found to play a considerable role in all school stakeholders to use the technology. (Callaghan, N., 2021).

Online communities have the potential to help teacher education programs inform and prepare future teachers to teach children equitably and confront social injustices. The purpose of this study was to gain a better understanding of the shared values and beliefs of teachers who operate as transformative intellectuals in online places. Findings were categorized based on the topic domains of interview questions. The study included six participants from two social-justice and human-rights oriented online communities of teachers, #SaturdaySchool and #EduColor. Three data sources, a demographic survey questionnaire, individual interviews, and fieldnotes, were used to answer the research question. Findings suggested that participants in both communities think that teachers should have access to and participate in online places in which teachers, teacher-educators, and activists engage in social-justice and human-rights work. The findings demonstrated that participants thought it was essential to have a venue for ongoing and reflective conversations. Additionally, the findings suggest that participants in both groups view their communities as places to challenge what they have learned in the past, connect with other teachers, and share professional experiences. Participants also view both communities as sources of encouragement and places to feel vulnerable. (Ku, H. & Clanzy, Z., 2021).

This research investigates the learning progress and bottlenecks of students during learning via an immersive virtual reality environment. At the planning stage of this action research, an immersive virtual reality learning environment – myVOR- was designed and developed to teach concepts and procedures. myVOR was developed using the Unity game engine. Depth-camera integrated Head Mounted Display was used to support the skill training of learners via intuitive gesture interaction. In the action stage, myVOR was applied to fourteen 3rd year nursing students, once a week for a month. Qualitative and quantitative data were gathered to analyze learning status and, the fluctuation among sessions concerning behaviors, attitudes, reactions. Data were collected from video recordings, myVOR logs, interviews, and an information exam. The results indicated that myVOR was sufficient to teach concepts and complex procedures. However, the learners experienced problems before adapting the used technology, and this affected their behaviours and attitudes during training. The findings of this research support the requirement for a comprehensive needs analysis before designing immersive virtual reality learning environments. (Tacgin, Z., 2020).

2.3 Significance of the Study

The findings of this study is expected to be of great value to the following groups:

School Administrator. The study could provide the school administrator insight that technology-enhanced is a tool in learning and teaching process is significant.

Teachers. The findings of this study could provide the professor a data of the current state in their teaching process in using technology and improve the curriculum.

Students. The study can help the students to improve their learning process in much more engaging technology-enhanced in their curriculum.

Future Researchers. To provide future researchers a body knowledge for further enhancement of the study.

2.4 Theoretical/Conceptual Framework

The UTAUT has been widely regarded since its inception as a model that synthesizes past technology theories. The UTAUT was first tested empirically using data from four organizations, then cross-validated using new data from another two organizations from the financial services and retail electronics industries. Venkatesh et al. (2003) suggested that while the UTAUT was initially designed for research use in business contexts, the model could be further modified or extended to incorporate alternative or additional measures of users' behavioral intention (BI) and usage in education contexts. The original UTAUT posited that BI and actual behavior use associated with a given technology would be influenced by four main factors: performance expectancy (PE), effort expectancy (EE), social influence (SI) and facilitating conditions (FCs). PE is the extent to which a user believes that using a system will help him or her to achieve gains in job performance. EE is the degree of ease with which a system can be used, while SI is the extent to which a user perceives that 'important others' believe that should use the system. Finally, FC is the extent to which an individual believes that there are existing organizational and technical infrastructures to support the use of the system.

The authors also acknowledged that the influence of the four primary factors might be moderated by factors such as gender, age, experience and voluntariness. These 'moderating factors', however, are not part of the primary model, and are typically not included in empirical studies on the UTAUT.

Figure 1 presents the conceptual model of the study that was utilized in evaluating Teacher Educators' Attitude Towards Technology-Enhanced Learning and its Incorporation into Teaching-Learning Process.

The study is to determine teachers' attitude toward technology-enhanced learning in terms of demographic profile of the teachers such as gender, age and designation also the teachers' perception on campus-based and distance learning towards teachers' attitude to technology enhanced learning. Meanwhile the overall teachers' attitude toward technology-enhanced learning will be determine in terms facilitate learning, facilitate teaching and institutional support.

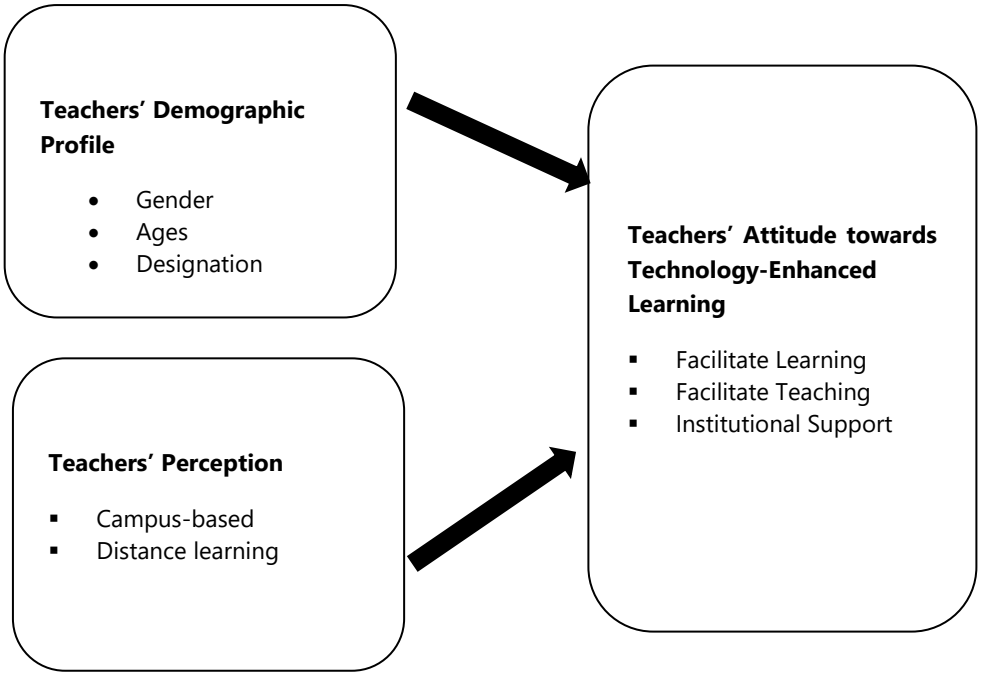

Figure 1. Conceptual Model of the Study

2.5 Statement of the Problem

The major problem of the study is to determine the overall teacher educators' attitude towards technology-enhanced learning and its incorporation into teaching-learning process.
Specifically, this study search to answer the following questions:

1. How do the respondents assess the overall attitude of the teachers towards technology-enhanced learning in terms of:
    1.1 Facilitate learning;
    1.2 facilitate teaching; and
    1.3 institutional support?
2. How do the respondents assess the teacher educators on teaching-learning process in terms of:
    2.1 Gender;
    2.2 age; and
    2.3 designation?
3. Does the overall attitude of the teachers significantly affect the teaching-learning process as perceived by the respondents?
4. How can the findings of the study be used to propose and action plan for campus-based (F2F) and distance learning (ODL) teacher educators towards TEL?

2.6 Hypothesis of the Study

The following hypothesis was tested at .05 level of significance.

"The teachers' attitude towards technology enhanced learning does not significantly affect demographic profile"
"The teachers' attitude towards technology enhanced learning does not significantly affect teachers' perception"

2.7 Definition of Terms

Multimedia education. The use of technology such as computer, smart phones, smart TV, gadgets and alike.
Technology-enhanced learning. The use technology in learning and teaching process as method in teaching.

2.8 Scope and Delimitation of the Study

The purpose of the study is to investigate teacher educators' attitude towards adoption of TEL in teacher education by examining the factors that encourage a successful TEL integrated curriculum during and post-Covid-19 period one of the schools in China.

The study will assess in terms the demographic profile and perceptions of the teachers.
A total of 112 respondents of the study which are teachers for school year 2023-2024. A qualitative research design will be employed and utilize a standardized evaluation tool.

3. Methodology

3.1 Method and Techniques Used

This research is based on a descriptive survey which aimed to analyze teacher educators' attitude towards TEL. Data were collected from teacher educators working in different teacher education colleges and universities in China. The survey will be conducted on post Covid-19 pandemic in 2022 through an online survey platform. Both descriptive and inferential statistical methods were used for data analysis. The frequencies and percentages will be used to illustrate sample characteristics, while items of the survey questionnaire will be analyzed by employing descriptive statistics, i.e., percentages, mean and standard deviation. The null hypotheses will be tested employing a one-way ANOVA and independent t-test.

3.2 Locale of the Study

The study will be conducted in one the schools in China. The researcher limited the conduct of the study to the institution to avoid possible mediating variables such as the difference in practice, systems, norms, and others that may influence the findings of the study if it includes other institutions from different school and partly because of the accessibility and availability of the respondents.

3.3 Respondents of the Study

Guided by the Slovin's formula, the study will consist of 112 teacher educators during the school year 2021-2022.

Respondents of the Study

Respondents	**F**	**%**
Male Teachers	30	26.79
Female Teachers	82	73.21
Total	**112**	**100**

The sample of this study can be considered representative of the population of teacher educators in China as it was configured by participants belonging to the different modes of teaching (F2F and ODL), type of institutions (government/government-aided and private) and different teaching positions (professor, associate professor, assistant professor and lecturer). In addition, the sample frequencies with respect to gender. The research instrument will be emailed to all the teacher educators to fill up the online attitude scale.

3.4 Instrument of the Study

Based on the "Test of e-Learning Related Attitudes" (TeLRA) scale by Kisanga, D. & Ireson, G. (2016), the researchers developed, validated and used a 4-point Likert scale with degrees of agreement ranging from 1-strongly disagree (SD), 2-disagree (D), 3-agree (A) to 4-strongly agree (SA). Literature on attitude of teacher educators towards TEL and its integration in teaching-learning during Covid-19 were studied to revise the statements. The scale comprised 30 statements under three major sections or dimensions: facilitate learning, facilitate teaching, and institutional support. Besides the scale, the teacher educators were asked to provide information on demographic characteristics such as gender, age, details on teaching position, mode of teaching, and type of institution.

3.5 Data Gathering Procedure

In gathering the data, the researcher will use Google Forms to design the scale and shared it via email to teacher educators. The purpose of the research, instructions and data usage were made clear to the respondents. Only the willing faculty filled up the online survey; and to maintain confidentiality of their responses, the survey was filled out anonymously, guaranteeing privacy of data.

3.6 Data Processing and Statistical Treatment

The data collected were tabulated and processed using Statistical Packages for Social Sciences (SPSS). In order to analyze and interpret the data gathered, the following statistical measures were used:

The Teacher Educators' Attitude Towards Technology-Enhanced Learning will be quantified using the following scale:

Rating Scale	Range	Descriptive Evaluation
4	4.00-3.00	Strongly Agree (SA)
3	2.99-2.00	Agree (A)
2	1.99-1.0	Disagree (D)
1	1.00-0.09	Strongly Disagree (SD)

4. Presentation, Analysis, and Interpretation of Data

This chapter presents analyses and interpretations of the data which are presented in the order and sequence of the questions raised in Chapter I for clarity and consistency in the discussion: (1) How do the respondents assess the overall attitude of the teachers towards technology-enhanced learning in terms of facilitate learning, facilitate teaching, and institutional support? (2) How do the respondents assess the teacher educators on teaching-learning process in terms of gender, age, and designation? (3) Does the overall attitude of the teachers significantly affect the teaching-learning process as perceived by the respondents? (4) How can the findings of the study be used to propose and action plan for campus-based (F2F) and distance learning (ODL) teacher educators towards TEL?

4.1 How do the respondents assess the overall attitude of the teachers towards technology-enhanced learning in terms of facilitate learning, facilitate teaching, and institutional support?

Table 3 presents the statistical results the overall attitude of the teachers towards technology-enhanced learning in terms of facilitate learning.

Table 3: The Assessment on the Overall Attitude of Teachers Towards Technology-Enhanced Learning in Terms of Facilitate Learning

Indicators	Average rating	Interpretation	Rank
1. Teachers appreciate how technology makes learning resources more accessible to students, allowing them to learn at any time and from anywhere.	2.32	Disagree	4
2. Teachers acknowledge the ability of technology to support diversified instruction, catering to the diverse learning requirements and paces of their students.	2.40	Disagree	3
3. Teachers report that technology enhances student collaboration through a variety of online platforms and tools.	2.50	Agree	2
4. Teachers appreciate the extensive internet resources and educational content available for both teaching and learning.	2.10	Disagree	5
5. Teachers have favorable attitude toward employing technology to track and analyze student progress, which help them adjust instructional tactics to individual requirements.	3.02	Agree	1
Overall Rating	**2.47**	**Disagree**	

Pertaining to the table above, *Teachers have favorable attitude toward employing technology to track and analyze student progress, which help them adjust instructional tactics to individual requirements* on first rank having a weighted mean of 3.02 and interpreted as "Agree". Followed by *Teachers report that technology enhances student collaboration through a variety of online platforms and tools* on rank two with a weighted mean of 2.50 and interpreted as "Agree". On rank three, *Teachers acknowledge the ability of technology to support diversified instruction, catering to the diverse learning requirements and paces of their students* with a weighted mean of 2.40 and a verbal interpretation of "Disagree". *Teachers appreciate how technology makes learning resources more accessible to students, allowing them to learn at any time and from anywhere* at rank four having a weighted mean of 2.32 and interpreted as "Disagree". Lastly, having the lowest weighted mean of 2.10 and a verbal interpretation of "Disagree", *Teachers appreciate the extensive internet resources and educational content available for both teaching and learning.* Overall, the overall attitude of the teachers towards technology-enhanced learning in terms of facilitate learning correspond to a general weighted mean of 2.47 and interpreted as "Disagree".

In this regard, Lee et al. (2021) have all highlighted the significant role technology plays in education. They argue that technology allows for personalized instruction, tracking student progress, and fostering collaborative learning environments. They also highlight the ability of technology to support diversified instruction, catering to individual learning styles and paces. Technology also makes learning resources more accessible, allowing students to learn at any time and from anywhere. O'Connor and Davis (2021) emphasize the importance of accessibility in education, highlighting the flexibility offered by technology in accessing educational resources. Lee (2020) and Samuels (2021) argue that the vast array of digital resources available to educators enriches the teaching and learning process, enhancing engagement and learning effectiveness.

Table 4 quantifies the overall attitude of the teachers towards technology-enhanced learning in terms of facilitate teaching.

Table 4: The Assessment on the Overall Attitude of Teachers Towards Technology-Enhanced Learning in Terms of Facilitate Teaching

Indicators	Average rating	Interpretation	Rank
1. Teachers show technology improved their ability to provide course contents in a more dynamic and engaging way.	1.20	Disagree	5
2. Teachers show that technology improved their classroom management by providing tools for monitoring and engaging students.	2.17	Disagree	3
3. Teachers are always excited about the creative teaching methods that technology allows, such as flipped classes and blended learning.	2.04	Disagree	4
4. Teachers show appreciation in the ease of sharing resources and collaborate with their co-teachers via online platforms and forums.	2.92	Agree	1
5. Teachers show appreciation in the professional development opportunities provided by online courses and webinars to stay current on the latest educational technologies and approaches.	2.18	Disagree	2
Overall Rating	**2.10**	**Disagree**	

Pertaining to the table above, *Teachers show appreciation in the ease of sharing resources and collaborate with their co-teachers via online platforms and forums* on first rank having a weighted mean of 2.92 and interpreted as "Agree". Followed by *Teachers show appreciation in the professional development opportunities provided by online courses and webinars to stay current on the latest educational technologies and approaches* on rank two with a weighted mean of 2.18 and interpreted as "Disagree". On rank three, Teachers show that technology improved their classroom management by providing tools for monitoring and engaging students with a weighted mean of 2.17 and a verbal interpretation of "Disagree". *Teachers are always excited about the creative teaching methods that technology allows, such as flipped classes and blended learning* ranked fourth having a weighted mean of 2.04 and interpreted as "Disagree". Lastly, having the lowest weighted mean of 1.20 and a verbal interpretation of "Disagree", *Teachers show technology improved their ability to provide course contents in a more dynamic and engaging way.* Overall, the overall attitude of the teachers towards technology-enhanced learning in terms of facilitate teaching correspond to a general weighted mean of 2.10 and interpreted as "Disagree".

In line with the findings, O'Connor and Davis (2021) emphasize that, while instructors acknowledge the benefits of online professional development, obstacles such as time restrictions and the quality of online courses can have an impact on overall enjoyment and involvement. Nguyen et al. (2021) state that these technologies can minimize administrative duties and allow teachers to focus more on instructional activities, but their effectiveness is dependent on adequate implementation and training. Thompson and Miller (2020) discovered that new teaching methods, such as flipped classrooms and blended learning, are highly valued by teachers due to their ability to make classes more interesting and participatory. These strategies promote active learning and student participation. Adams and Clark (2020) underline that technology enables teachers to offer course content in a variety of engaging formats, such as multimedia presentations, interactive simulations, and educational games, which can improve student comprehension and interest. According to Johnson and Samuels (2020), despite the potential benefits, some teachers feel unprepared to fully employ these technologies, which can have an impact on their overall attitude toward technology-enhanced instruction.

In the section below, it quantifies the overall attitude of the teachers towards technology-enhanced learning in terms of institutional support.

Table 5: The Assessment on the Overall Attitude of Teachers Towards Technology-Enhanced Learning in Terms of Institutional Support

Indicators	Average rating	Interpretation	Rank
1. The institution provide teachers with adequate training programs that prepare them to use technology effectively.	1.89	Disagree	2
2. The institution invest in infrastructure, such as dependable internet connectivity and up-to-date hardware, which enables technology-based learning for both students and teachers.	1.82	Disagree	3
3. The institution allocates fund and resources for teachers to encourage the use of technology in the classroom.	1.92	Disagree	1
4. The institution support teachers feel with clear policies and guidelines for using technology in education.	1.68	Disagree	4
5. The institution encourages innovation and experimentation with new technology in education.	1.82	Disagree	3
Overall Rating	**1.83**	**Disagree**	

Pertaining to the table 5, *The institution allocates fund and resources for teachers to encourage the use of technology in the classroom* on first rank having a weighted mean of 1.92 and interpreted as "Disagree". Followed by *The institution provide teachers with adequate training programs that prepare them to use technology effectively* on rank two with a weighted mean of 1.89 and interpreted as "Disagree". On rank three, both indicators, *The institution invest in infrastructure, such as dependable internet connectivity and up-to-date hardware, which enables technology-based learning for both students and teachers* and *The institution encourages innovation and experimentation with new technology in education* resulted a weighted mean of 1.82 and a verbal interpretation of "Disagree". Lastly, having the lowest weighted mean of 1.68 and a verbal interpretation of "Disagree", *The institution support teachers feel with clear policies and guidelines for using technology in education.* Overall, the overall attitude of the teachers towards technology-enhanced learning in terms of institutional support correspond to a general weighted mean of 2.60 and interpreted as "Disagree".

The findings revealed that teachers perceive a lack of institutional support for technology-enhanced learning. Key findings include inadequate funding and resource allocation, inadequate training programs, investment in infrastructure, and encouragement of innovation and experimentation. According to Johnson and Samuels (2020), adequate funding is crucial for successful technology implementation in education, but many institutions struggle to provide it. O'Connor and Davis (2021) emphasize the importance of ongoing professional development for teachers to keep up with rapidly evolving technological tools. Thompson and Miller (2020) argue that institutional support for innovation fosters a culture of experimentation and creativity among teachers, but many

institutions are risk-averse and reluctant to invest in new technologies. Clear policies and guidelines are also essential for effective technology use in education, as they provide a structured approach for teachers, enhancing their confidence and competence in using technological tools.

4.2 How do the respondents assess the teacher educators on teaching-learning process in terms of gender, age, and designation?

In this section, it quantifies the respondents' assessment to teacher educators' teaching-learning process in terms of gender.

Table 6: The Respondents Assessment to the Teacher Educators on Teaching-Learning Process in Terms of Gender

Indicators	Average rating	Interpretation	Rank
1. We feel that female teachers are more patient and willing to spend extra time explaining difficult concepts.	2.13	Disagree	5
2. We describe male teachers as having a more structured and disciplined approach to classroom management.	3.19	Agree	1
3. We observed that female educators tend to employ collaborative and inclusive teaching methods, which foster group discussions and teamwork.	2.43	Disagree	4
4. We noticed that male educators tend to incorporate more technology and multimedia tools into their teaching.	2.51	Agree	3
5. We observed that female educators often use diverse instructional strategies that cater to different learning styles.	2.76	Agree	2
Overall	**2.60**	**Agree**	

Pertaining to the table above, *We describe male teachers as having a more structured and disciplined approach to classroom management* on first rank having a weighted mean of 3.19 and interpreted as "Agree". Followed by *We observed that female educators often use diverse instructional strategies that cater to different learning styles* on rank two with a weighted mean of 2.76 and interpreted as "Agree". On rank three, *We noticed that male educators tend to incorporate more technology and multimedia tools into their teaching* with a weighted mean of 2.51 and a verbal interpretation of "Agree". *We observed that female educators tend to employ collaborative and inclusive teaching methods, which foster group discussions and teamwork* ranked fourth having a weighted mean of 2.43 and interpreted as "Disagree". Lastly, having the lowest weighted mean of 2.13 and a verbal interpretation of "Disagree", *We feel that female teachers are more patient and willing to spend extra time explaining difficult concepts*. Overall, the respondents assessment to teacher educators' teaching-learning process in terms of gender corresponds to a general weighted mean of 2.60 and interpreted as "Agree".

In line with the findings, Carter and Lee (2019) argue that male teachers often adopt a more authoritative and structured approach to classroom management, which can create a disciplined learning environment. Lee and Kim (2021) suggest that this aligns with traditional views of authority and control in educational settings. Female educators, on the other hand, often use diverse instructional strategies that cater to different learning styles, creating an inclusive and supportive learning environment. O'Connor and Davis (2021) emphasize that female teachers prioritize collaborative and inclusive teaching methods, fostering group discussions and teamwork. Carter (2019) and Lee (2023) also highlight that female teachers are more patient and willing to spend extra time explaining difficult concepts, enhancing student learning and confidence.

Table 6 presents the respondents assessment to teacher educators' teaching-learning process in terms of age.

Table 6: The Respondents Assessment to the Teacher Educators on Teaching-Learning Process in Terms of Age

Indicators	Average rating	Interpretation	Rank
1. We feel that younger teachers are more in tune with current trends and technologies, which makes learning more engaging.	2.92	Agree	1
2. We value older teacher educators for their vast experience and deep knowledge of the subject matter.	2.77	Agree	2

3. We perceive younger teacher educators as more approachable and less intimidating, fostering a friendly learning atmosphere.	2.76	Agree	3
4. We feel that older teachers bring a wealth of practical examples and anecdotes from their long careers.	2.13	Disagree	4
5. We often observe that younger educators are more flexible and open to feedback.	1.92	Disagree	5
Overall Rating	**2.50**	**Disagree**	

Pertaining to the data above, *We feel that younger teachers are more in tune with current trends and technologies, which makes learning more engaging* on first rank having a weighted mean of 2.92 and interpreted as "Agree". Followed by *We value older teacher educators for their vast experience and deep knowledge of the subject matter* on rank two with a weighted mean of 2.77 and interpreted as "Agree". On rank three, *We perceive younger teacher educators as more approachable and less intimidating, fostering a friendly learning atmosphere* with a weighted mean of 2.76 and a verbal interpretation of "Agree". *We feel that older teachers bring a wealth of practical examples and anecdotes from their long careers* ranked fourth having a weighted mean of 2.13 and interpreted as "Disagree". Lastly, having the lowest weighted mean of 1.92 and a verbal interpretation of "Disagree", *We often observe that younger educators are more flexible and open to feedback*. Overall, the respondents assessment to teacher educators' teaching-learning process in terms of age corresponds to a general weighted mean of 2.50 and interpreted as "Disagree".

Accordingly, Roberts and Lee (2023) highlight the practical wisdom and experiences shared by older teachers, which enhance theoretical learning and make lessons more interesting. Nguyen et al. (2021) found that younger teachers are more flexible and open to feedback, leading to continuous improvement and better alignment with students' needs. This flexibility fosters a dynamic and responsive learning environment.

Table 7 presents the respondents assessment to teacher educators' teaching-learning process in terms of designation.

Table 7: The Respondents Assessment to the Teacher Educators on Teaching-Learning Process in Terms of Designation

Indicators	**Average rating**	**Interpretation**	**Rank**
1. We perceive professors as challenging and demanding, pushing them to achieve high academic standards.	2.92	Agree	1
2. We feel that assistant professors are more accessible and willing to help with academic queries and concerns.	1.92	Disagree	3
1. We perceived that assistant professors are more collaborative in encouraging group projects and peer learning.	1.56	Disagree	5
4. We often noticed that professors are involved in academic advising and mentoring, providing valuable career guidance.	2.51	Agree	2
5. We perceive professors as having a more research-oriented approach, often integrating current research findings into their teaching.	1.89	Disagree	4
Overall	**2.16**	**Disagree**	

Pertaining to the table above, *We perceive professors as challenging and demanding, pushing them to achieve high academic standards* on first rank having a weighted mean of 2.92 and interpreted as "Agree". Followed by *We often noticed that professors are involved in academic advising and mentoring, providing valuable career guidance* on rank two with a weighted mean of 2.51 and interpreted as "Agree". On rank three, *We feel that assistant professors are more accessible and willing to help with academic queries and concerns* with a weighted mean of 1.92 and a verbal interpretation of "Disagree". *We perceive professors as having a more research-oriented approach, often integrating current research findings into their teachin*g ranked fourth having a weighted mean of 1.89 and interpreted as "Disagree". Lastly, having the lowest weighted mean of 1.56 and a verbal interpretation of "Disagree", *We perceived that assistant professors are more collaborative in encouraging group projects and peer learning*. Overall, the respondents assessment to teacher educators' teaching-learning process in terms of designation corresponds to a general weighted mean of 2.16 and interpreted as "Disagree".

As observed in the data, students perceive assistant professors as more approachable and accessible due to their lighter

administrative workloads and recent student experience. Roberts and Lee (2023) found that they are enthusiastic about engaging with students and providing support. Adams and Clark (2020) suggest that professors' research-oriented approach enriches the learning experience, preparing students for research-oriented careers. Nguyen et al. (2021) highlight that assistant professors encourage group projects and peer learning, fostering a sense of community and developing students' teamwork and communication skills for future professional success.

4.3 Does the overall attitude of the teachers significantly affect the teaching-learning process as perceived by the respondents?

The Pearson or test of r in table 10 for the overall attitude of teachers significant effect to the teaching-learning process as perceived by the respondents.

Table 8: The Effect of the overall attitude of teachers to the teaching-learning process as perceived by the respondents.

Indicator	Pearson R	Critical Value	Remarks
Effect of the overall attitude of teachers to the teaching-learning process as perceived by the respondents	0.687	± 0.553	Moderate Relationship
At 5% Level of Significance		**Degree of Freedom = 8**	

Data revealed that since the computed R of the overall attitude of teachers and teaching-learning process as perceived by the respondents 0.687 which is greater than the critical value of ± 0.553 at 5% level of significance with the degree of freedom of 8. Thus, HO is rejected. Therefore, there is a significant effect on overall attitude of teachers to their teaching-learning process.

This findings are supported by Smith and Brown (2020) as they argued that teachers' attitudes significantly influence their teaching strategies, classroom management, and student engagement, ultimately affecting student outcomes. Johnson and Samuels (2020) show that teachers with positive attitudes towards their profession and students are more effective in delivering content, managing the classroom, and fostering a positive learning environment. Lee and Kim (2021) argue that teachers' attitudes towards continuous professional development and learning directly impact their teaching effectiveness. Additionally, Roberts and Lee (2023) highlight the role of teachers' attitudes in shaping students' perceptions of the learning environment.

4.4 How can the findings of the study be used to propose and action plan for campus-based (F2F) and distance learning (ODL) teacher educators towards TEL?

Based on the findings of the study, it reveals that teachers' attitudes towards technology-enhanced learning significantly affect their teaching methods. To enhance the adoption and effectiveness of TEL, a comprehensive action plan is essential for both campus-based and distance learning educators. The plan includes enhancing institutional support, facilitating learning, and providing specific support based on gender, age, and designation.

There is a need to allocate funding and resources to procure and maintain up-to-date technology infrastructure, with a dedicated budget for technology upgrades and maintenance. Training programs should be provided, including mandatory training sessions and workshops for all educators. Policies and guidelines should also be developed in order to standardize the use of technology in education.

Tracking and analysis, student collaboration, and diverse instruction should facilitate learning. Online platforms should foster resource sharing and collaboration among teachers, while online courses and webinars should offer professional development. Digital tools have the potential to enhance classroom management tools.

Therefore, the proposed action plan may be utilized to address key areas identified in the study, focusing on enhancing institutional support, facilitating learning and teaching, and providing specific support based on gender, age, and designation.

5. Summary of Findings, Conclusions and Recommendations

This chapter presents, analyzes, and interprets the findings of the study which aimed to determine the overall teacher educators' attitude towards technology-enhanced learning and its incorporation into teaching-learning process. In addition, the findings of the study will be used to propose and action plan for campus-based (F2F) and distance learning (ODL) teacher educators towards TEL.

5.1 Summary of Findings

The results of the data highlighted the following observations.

5.1.1 The Respondents Assessment to the Overall Attitude of Teachers Towards Technology-Enhanced Learning in terms of Facilitate Learning, Facilitate Teaching, and Institutional Support

According to the respondents' assessment of teacher educators' teaching-learning processes, male teachers have a more structured approach, while female educators use diverse instructional strategies and incorporate technology and multimedia tools. Female educators are more patient and willing to spend extra time explaining difficult concepts.

In terms of age, younger teachers are more in tune with current trends and technologies, making learning more engaging. Students value older teachers for their vast experience and deep knowledge of the subject matter. Students perceive younger teachers as more approachable and less intimidating, which fosters a friendly learning atmosphere.

In terms of designation, professors are perceived as challenging and demanding, providing valuable career guidance. Assistant professors are more accessible and willing to help with academic queries. Professors are more research-oriented, often integrating current research findings into their teaching. Assistant professors are more collaborative in encouraging group projects and peer learning.

5.1.2 The Respondents Assessment to Teacher Educators on Teaching-Learning Process in terms of Gender, Age, and Designation

According to the respondents' assessment of teacher educators' teaching-learning processes, male teachers have a more structured approach, while female educators use diverse instructional strategies and incorporate technology and multimedia tools. Female educators are more patient and willing to spend extra time explaining difficult concepts.

In terms of age, younger teachers are more in tune with current trends and technologies, making learning more engaging. People value older teachers for their vast experience and deep knowledge of the subject matter. People perceive younger teachers as more approachable and less intimidating, which fosters a friendly learning atmosphere.

Students often perceive professors as challenging and demanding, frequently pushing them to achieve high academic standards. Assistant professors are more accessible and willing to help with academic queries and concerns. Students perceive professors to be more research-oriented, frequently incorporating current research findings into their teaching. Assistant professors are more collaborative, encouraging group projects and peer learning.

5.1.3 The Effect of the Overall Attitude of Teachers to the Teaching-Learning Process as Perceived by the Respondents

The Pearson test showed a significant effect of teachers' overall attitude on their perception of the teaching-learning process, with a calculated R of 0.687, exceeding the critical value of ± 0.553 at a 5% level of significance.

5.1.4 The Action Plan Proposal for Campus-Based (F2F) and Distance Learning (DL) Teacher Educators Towards TEL

The study reveals that teachers' attitudes towards technology-enhanced learning significantly affect their teaching methods. Both campus and distance learning educators need a comprehensive action plan to improve TEL adoption. This includes enhancing institutional support, facilitating learning, and providing support based on gender, age, and designation. The school administrators should allocate funding for technology infrastructure, training programs, and policies. In addition, online platforms and digital tools can enhance classroom management.

6. Conclusions

The following conclusions are hereby drawn on the findings of the study.

1. Majority of the students agreed that male teachers have a more structured approach, while female educators use various teaching methods and technology. Most of the students agreed that female educators are patient, while younger teachers are more familiar with current trends and technologies. Further, students value older teachers for their extensive knowledge and approachability on the other hand, professors are tough, demanding, research-oriented, and collaborative.
2. Majority of the students agreed that teacher educators' teaching-learning processes vary, with male teachers adopting a structured approach, female teachers using diverse strategies, and younger teachers being more approachable. Students value older teachers for their extensive knowledge and experience, while professors are perceived as challenging, research-oriented, and collaborative. Students also value younger teachers for their accessibility and willingness to help with academic queries.

3. The Pearson test revealed a significant effect of teachers' overall attitude on their perception of the teaching-learning process, therefore rejecting the null hypothesis.
4. Teachers' attitudes toward technology-enhanced learning have a significant effect on teaching methods. To improve TEL adoption, there is need for a comprehensive action plan that includes institutional support, learning facilitation, and support for gender, age, and designation.

6.1 Recommendations

Based on the findings of the study, it is evident that teachers' overall attitudes on technology-enhanced learning (TEL) have a major effect on the teaching-learning process. Therefore there is a need to propose a comprehensive action plan for both campus-based (F2F) and distant learning (ODL) educators is required to improve TEL acceptance and efficacy.

1. Improve Institutional Support

Funding and Resources. The school administrators should set aside enough finances to purchase and maintain up-to-date technical infrastructure, such as reliable internet connectivity and contemporary hardware. They should create a budget for technology upgrades and upkeep.

Training Programs. The Professional Development Office should provide comprehensive and continuing professional development opportunities for TEL. They should create and implement obligatory training and workshops for all educators.

Policies and Guidelines. The Academic Affairs Office shoul create explicit regulations and procedures to standardize the use of technology in education.

2. Facilitate Learning.

Tracking and Analysis. IT Department should encourage the use of technology to track and evaluate student progress. They should combine learning management systems (LMS) with analytics capabilities.
Student Collaboration. The Course Coordinators should boost student collaboration using online platforms and resources. They shoul use collaboration technologies such as discussion boards, group project platforms, and virtual meeting software.

Diverse Instruction. The Instructional Design Team should encourage the use of technology to help differentiate instruction. They should provide training on adaptive learning technologies and tailored instruction methodologies.

3. Facilitate Teaching.

Resources Sharing. Library and Information Services should encourage teachers to use online platforms to share resources and collaborate. They should set up a digital repository for instructional materials and best practices.

Professional Development. The Professional Development Office should provide online courses and webinars on the most current educational technologies and methodologies. They should collaborate with EdTech firms and educational institutions to offer these opportunities.

Management Technologies: The IT Department should improve classroom management using digital technologies. They should provide training and access to classroom management software.

4. Support Tailored to Gender, Age, and Designation

Gender-Specific Strategy. The Gender and Education Office should encourage the use of a variety of instructional tactics, including collaborative teaching techniques. They should provide workshops on inclusive teaching approaches.

Male Educators. The Academic Affairs Office should encourage planned and disciplined classroom management strategies. They should conduct training workshops on effective classroom management.

Younger Educators. The Professional Development Office should take advantage of their knowledge of current trends and technologies. They should be encouraged in engaging to technology-related professional development.

Educators. The Mentorship Program Coordinator should leverage their extensive experience and wisdom. They should create mentoring programs in which elderly educators can share their knowledge.

Professors. The Research and Innovation Office should encourage their research-based approach and high academic standards. They should establish platforms for incorporating research into teaching.

Assistant Professors: The Department Heads should encourage their accessibility and collaborative character. They should promote collaborative projects and peer learning activities.

The recommended action plan attempts to address the study's primary findings, with an emphasis on improving institutional support, promoting learning and teaching, and providing targeted help based on gender, age, and designation. By employing these tactics, the institution may improve the overall effectiveness of technology-enhanced learning, which benefits both educators and students.

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