



Challenges in the Implementation of Online Teaching and Learning in Thailand: Insights for Educational Policy

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RESEARCH ARTICLE INFORMATION	ABSTRACT
Received: August 20, 2024 Reviewed: November 15, 2024 Accepted: December 17, 2024 Published: December 30, 2024  Copyright © 2025 by the Author(s). This open-access article is distributed under the Creative Commons Attribution 4.0 International License.	Thailand's digital transformation has gained significant traction in online education. With the aim of providing quality education across borders for the enhancement of Thailand's human resources, the goal of improving the quality of online education in Thailand was conceptualized. This study addressed the challenges faced by teachers in managing and supervising online teaching and learning among Thai university students. This was conducted at an international college in a public university in Phitsanulok, Thailand. The study involved a total of 17 teachers who shared their insights on key features, challenges, and strategies in online education. Using a convergent mixed methods design, data were collected through surveys, interviews, and focus group discussions. The findings of this study highlight the critical role of instructional planning, instructional delivery, and learning assessment in enhancing the quality of online teaching and learning. As a result, an online teaching and learning framework was developed to standardize practices, strengthen student competencies, and promote sustainability. The proposed framework addresses existing challenges, enhances engagement, and ensures academic integrity. Overall, the framework was created not only as a strategic response to any educational disruptions that may arise at any time but also to strengthen and future-proof online education in Thailand.

Keywords: *instructional planning, instructional delivery, learning assessment, online teaching and learning policy, educational framework*

Introduction

During the height of the pandemic in Thailand, online teaching and learning significantly established a strong presence in offering meaningful learning experiences and holistic academic development. To assess the readiness of Thai university students regarding online education, this study commenced during the pandemic and was conducted at an international college in a public university in Phitsanulok, Thailand. Though the concentration of the locale was only at one place, it was strongly believed that the struggles of motivating and engaging students through online teaching mirror the challenging tasks of teachers. As expected, teachers' readiness was challenged by operating the Learning Management System and their onsite teaching practices. Since university students were at home attending online classes, Thai university students' level of demotivation (Rofiah et al., 2021; Somsathan & Sanjaiprom, 2021; Tamronglak, 2020) increased because online classes made them feel drained physically and mentally due to the heavy workloads and online misunderstanding (Thoopkrajae, 2021; Vaz & Williams, 2021). Aside from such challenges, Thai university students also have difficulty becoming independent learners due to their culture of learning that teachers are the source and authority of knowledge resulting in an inability to open learning opportunities in conducting self-directed learning (Prabjanee & Inthachot, 2013).

On the other hand, university students in Thailand generally believed that they were well-prepared for online education due to their exposure to technology-rich environments. Their consistent use of technology helped them become proficient and comfortable with digital tools. However, their learning readiness requires improvement especially in the aspect of self-discipline because they need additional training to enhance their time management skills, allocate sufficient time for coursework, actively engage in post-discussion communications, and submit assignments on time (Insawang, 2021). Consequently, the educational disruption made teachers adapt their teaching to online settings like in the selection of online resources and figure out the right material to be utilized and distributed to students (Izhar et al., 2021; Talerngsri, 2019). Though most subject teachers thought that students would not be affected by their teaching practices, they were blindsided because some did not carefully plan their teaching needs, students' profiles, readiness, learning interests, and students' capability to comprehend (Ryznar, 2021; Imsa-ard, 2020).

The academic disruption gained significant traction in understanding the nature of online teaching and learning in higher education which established a strong presence as an alternative platform for acquiring quality education. This study explored the essential elements in making online teaching and learning effective and transformational as a response to Thailand's National Strategy (2018-2037) known as Thailand 4.0 which desires to provide quality education, lifelong learning, and living happy lives among Thais based on the principles of Sufficiency Economy and Thailand National Education Plan 2017-2036. The anticipated improvement of Thai education in developing basic skills, problem-solving, creativity, and critical thinking could potentially help the development of communities needed for Thailand's development and progress. In support of Thailand's education reform, the online teaching and learning

educational framework is created as a response to Thailand 4.0 on providing education and essential services for the enhancement of Thailand's human resources. Additionally, the said framework does not only respond to the present and future needs of Thailand, but it also mitigates any educational disruptions that can happen anytime now or in the future.

In the light of the online teaching and learning educational framework, it has the following elements. The first is instructional planning with the following points to consider to achieve effective teaching process: selecting appropriate teaching pedagogies for online teaching and learning (Simon, 2012; Widarini et al., 2021), retooling and capacitating learning facilitators (Ahmmed et al., 2022; Stoker, 2020), securing availability of learning platforms, systems, and infrastructures (De Guzman et al., 2021; Juanis, 2020), establishing sound and relevant guidelines and policies (Al-Maqbali & Hussain, 2022; Beleulmi, 2022; Marshall et al., 2020), developing instructional materials for the sought instructional delivery (Chi, 2013; Ismail & Ismail, 2021), analyzing students' needs, readiness, learning interest, and profiles (Al-Maqbali & Hussain, 2022; De Guzman et al., 2021; Juanis, 2020; Kavun, 2021), creating student-centered and meaningful learning experiences (Ismail & Ismail, 2021), providing aggressive teacher and student support (Al-Maqbali & Hussain, 2022; Ismail & Ismail, 2021), selecting appropriate teaching pedagogies for online teaching and learning (Chi, 2013; Simon, 2012), and putting in place organization structure, systems, and process (De Guzman et al., 2021; Juanis, 2020).

The second element is instructional delivery which deals with imparting knowledge and skills to students. It has the following points: securing functionality and stability of technology (De Guzman et al., 2021; Juanis, 2020), contextualizing, localizing, and indigenizing instructional design (Ismail & Ismail, 2021; Juanis, 2020; Moustakas & Robrade, 2022), establishing time management and self-directed approach in the learning engagement (Izhar et al., 2021; Martin, 2017), appropriateness of learning conditions and standards (Ohrablo, 2017), developing critical thinking skills and divergent thinking skills (Heilporn et al., 2021; Ohrablo, 2017), suitability of instructional approaches to teaching and learning (Hain, 2020), maintaining student-centered approach (McMurtry, 2016), and creating community of practice and professional academic groups (Lee et al., 2022; Rong et al., 2021).

The third element is learning assessment which is the reflection of the learning process that impacts the role of promoting learning. It has the following points: providing clear and appropriate assessment methods and assessment tasks/activities (Ghanbari & Nowroozi, 2021; Mate & Weidenhofer, 2021), giving prompt, constructive, and objective feedback to students' academic performance (Susilana & Pribadi, 2021), giving clear instruction on learning engagement (Gaytan & McEwen, 2007), providing learning assessment to improve students' academic performance (Basta, 2009; Lee et al., 2022), intensifying teachers' creativity in evaluating students' performance, and maximizing use of technology (Hogan, 2021; Rong et al. 2021), giving intervention, remediation, and enrichment to learner (Ohrablo, 2017).

Along with instructional planning, instructional delivery, and learning assessment, other elements were also given importance like policy (Brimoh & Lekoko, 2005; Waterhouse & Rogers, 2004) being the guide in the whole process of administrating program and the likes of it, as well as stakeholder (Msomi & Hoque, 2018) who plays important roles in the organization or program. In this study, the list of stakeholders identified for higher education institutions are students, employers,

policymakers, teachers, and administrators for the monitoring and evaluation (Khadija, 2003; Scheerens et al., 2005) and effective utilization of all variables to achieve the set objectives of the proposed framework; and for the evaluation (Alazmi & Alazmi, 2023; Hosp and Ardoin, 2008) of the overall effectiveness in meeting all the set objectives of the policy. Thus, the established educational framework for online teaching and learning modality was created not only as a strategic response to any educational disruptions that may arise at times but also to strengthen and future-proof online education in Thailand.

On the other hand, it also aims to provide policymakers a basis or reference for the formulation of an educational policy for distance or online education that would maintain, protect, and provide better quality education, create a student-centered approach, and achieve meaningful learning experiences in the context of distance or online education.

Methods

Research Design

This study employed a convergent mixed methods design. This method employs quantitative and qualitative methods where the data is collected, analyzed, and compared if the data confirm or disconfirm each other (Creswell & Creswell, 2018). This design addresses resolving the research gap by integrating quantitative and qualitative data to deliver a comprehensive understanding of the problem through statistical analysis and contextual insights to ensure the reliability of results.

Research Population

This research utilized a total population sampling technique. There was a total population of twenty-eight (28) academic staff and administrators combined. Of the twenty-eight (28), eleven (11) teachers fell to the exclusion criteria as they did not experience the implementation of online teaching and learning or could not participate in the whole process of data gathering procedure. Overall, this study was able to gather seventeen (17) volunteered respondents.

Research Locale

The concentration of the locale was only at an international college of a premier state university in the northern part of Thailand.

Research Instruments

There were two types of instruments utilized. For quantitative design, a five-point Likert scale questionnaire with open-ended questions was made. The questionnaire had 90 question items. For qualitative design, the semi-structured interview guide was prepared for the interview. The research instruments were validated by three experts (one from Naresuan University, Thailand; one from Kamphaeng Phet Rajabhat University, Thailand; one from Batangas State University - The National Engineering University, the Philippines). The survey questionnaire also underwent pilot testing and achieved Cronbach's Alpha internal consistency of .79 overall. The data gathered from the questionnaire and interview were utilized as points of discussion for the focus group discussion. For the clarification of the interpretation of the mean scores, Table 1 shows the utilization of the Likert scale and the interpretation of the mean scores.

Table 1. Interpretation of Mean Score

Interval	Rating	Interpretation
4.20 – 5.00	5	Strongly Agree
3.40 – 4.19	4	Agree
2.60 – 3.39	3	Neutral
1.80 – 2.59	2	Disagree
1.00 – 1.79	1	Strongly Disagree

Research Data Collection Techniques

The collection techniques of this study started from describing the nature of the study to prospective respondents, acquiring consent from the respondents of the study, distributing and collecting survey questionnaires, and scheduling one-on-one interview and focus group discussion.

Research Data Analysis

For the quantitative aspect of the study, using SPSS version 25, the statistical treatment used was descriptive statistics specifically the mean and standard deviation to clearly understand the commonalities and differences of the data set. For the qualitative aspect, the gathered information from the interview was thematically analyzed by identifying key themes. During the focus group discussion, the mixing of the data occurred because the result of the survey questionnaire and interview were utilized as the point of discussion in drawing relevant, reliable, and meaningful framework.

Ethical Considerations

This study secured informed consent from the locale of the study – its department and through the university's Institutional Review Board (IRB). The participants in this study were given information about the goals of the study and participation in this study was voluntary. Prior to completing the survey, participation in the interview, and focus group discussion, the participants read and signed the consent form so that their responses could be utilized for research purposes. Hence, confidentiality was fully practiced since no identification was employed.

Results and Discussion

The study's best features, challenges, and strategies along with instructional planning, instructional delivery, and learning assessment are shown in Table 1.

Table 2. Degree of Conformity of Teachers to Online Teaching and Learning Modality

Features of online teaching and learning	Weighted Mean	Standard Deviation	Interpretation
Instructional Planning	3.49	.91	Agree
Instructional Delivery	3.13	.82	Neutral
Learning Assessment	3.02	.60	Neutral
Overall	3.21	.78	Neutral

Challenges of online teaching and learning

Instructional Planning	3.02	.68	Neutral
Instructional Delivery	3.89	.70	Agree
Learning Assessment	3.42	.83	Agree
Overall	3.44	.74	Agree

Strategies employed in online teaching and learning

Instructional Planning	3.91	.59	Agree
Instructional Delivery	3.86	.82	Agree
Learning Assessment	4.06	.52	Agree
Overall	3.94	.64	Agree

The quantitative assessment of online teaching and learning was broken down into features, challenges, and strategies across the three elements: instructional planning, instructional delivery, and learning assessment. The elements were assessed using weighted mean and standard deviation scores to show how online teaching and learning is perceived among respondents. The overall mean for the features of online teaching and learning was 3.21 placing it in the neutral standpoint, and its standard deviation of 0.78 signified moderate variation in respondents' views. Regarding instructional planning, its weighted mean was 3.49, indicating a general agreement, though the standard deviation of 0.91 suggests that there is a moderate variability among responses, suggesting that while most respondents agree that instructional planning is an important feature, there is also a degree of divergence on the presented elements of instructional planning like "provided online resources," ($\bar{x} = 2.94$); "all materials and resources prepared before the start of classes," ($\bar{x} = 3.24$); "provided structure guidelines or policy before conducting online classes" ($\bar{x} = 3.82$).

On the other side, for instructional delivery, the weighted mean of 3.13 placed it closer to the neutral point, with a standard deviation of 0.82, suggesting that online teaching delivery does not strongly elicit agreement or disagreement, and opinions on its effectiveness are more mixed like in the following indicators: "provided students an opportunity to develop a higher level of thinking," ($\bar{x} = 3.00$); "provided students with an avenue to interact with teachers and their classmates," ($\bar{x} = 2.76$); and "provided assistance to students who are having difficulty learning the contents of the course" ($\bar{x} = 2.59$). Similarly, learning assessment had the lowest weighted mean of 3.02, indicating a neutral stance with a lower standard deviation of 0.60, suggesting that while responses were somewhat consistent, they did not strongly favor either side particularly on the following indicators: "provided caring and constructive feedback when dealing with students' academic development towards the areas that they need to improve," ($\bar{x} = 2.60$); "provided a thorough assessment of student's performance on their submitted assignment or requirement especially in marking open-ended questions in a timely manner," ($\bar{x} = 2.82$); and "provided self and peer assessment for some class activities," ($\bar{x} = 3.10$).

In terms of the challenges of online teaching and learning, its overall mean was 3.44 and a standard deviation of 0.74, indicating that significant challenges exist in the online teaching process. For instructional planning, the weighted mean of 3.02 reflects a neutral perception and a standard deviation of 0.68 reflects relatively low variability. The following points were the glaring responses for instructional planning: "find

difficulty in formulating lessons on how to motivate the interests of the students to the subject matter" ($\bar{x}$ = 3.25); "find difficulty in constructing online formative and summative examinations," ($\bar{x}$ = 3.40); and "find difficulty in formulating thought-provoking questions that would lead to participation of the students in the discussions of the lesson," ($\bar{x}$ = 3.00). Regarding instructional delivery, it posed more significant challenges, as indicated by the weighted mean of 3.89 and a standard deviation of 0.70, reflecting that there is a strong agreement among respondents. Some of the notable responses were observed in the following particulars: "find it difficult instructing students to keep their cameras on during the duration of the entire lecture," ($\bar{x}$ = 3.45); "find it difficult motivating students to pay attention to online lectures," ($\bar{x}$ = 4.10); "find difficulty adapting to a teaching style that will interest or motivate students to be attentive in the online teaching and learning classes," ($\bar{x}$ = 3.53); and "find difficulty in facilitating interaction among students or encouraging them to ask relevant questions during the online teaching and learning classes, ($\bar{x}$ = 4.40). When looking at the learning assessment, its weighted mean is 3.42 and a standard deviation of 0.83 which show that respondents agree on the "difficulty of some students to understand the online teaching and learning lectures," ($\bar{x}$ = 4.17); "difficulty in monitoring students during online examinations," ($\bar{x}$ = 4.35); "difficulty in providing students with detailed feedback about their assignments, requirements, and academic progress" ($\bar{x}$ = 3.50).

Finally, the strategies employed in online teaching and learning showed an overall weighted mean of 3.94 and a standard deviation of 0.64, indicating broad agreement and moderate consistency. For instructional planning, its weighted mean is 3.91, and the standard deviation of 0.59 which suggest that most respondents are consistent in their positive evaluation specifically on the following items: "created learning resources to be presented to students like PowerPoint, hand out, activity, and video presentation," ($\bar{x}$ = 3.88); "created motivating lessons that target the interest of the students so they can be acquainted with the lesson via online teaching and learning," ($\bar{x}$ = 3.76); and "prepared thought-provoking questions per lesson ahead of time that aim to generate the interest of the students in particular to the assigned lesson in the course" ($\bar{x}$ = 3.82).

Additionally, instructional delivery showed a strong mean of 3.86, with a standard deviation of 0.82, indicating a bit more variation among respondents [particularly on the following items: "prepared questions to be asked during online discussion and solicit answers from students by calling their names during the duration of the online class," ($\bar{x}$ = 3.75); "provide encouragement and boost students' confidence by acknowledging their strengths and transforming their weaknesses into something positive," ($\bar{x}$ = 3.91); "innovate online teaching style suitable for online class and course," ($\bar{x}$ = 3.83); and "provide comprehensible instruction so students can easily understand and grasp learning via online teaching" ($\bar{x}$ = 3.90).

With learning assessment, its mean was 4.06 and a very low standard deviation of 0.52, indicating overwhelming agreement among respondents. Examples of indicators that would explain this domain are "remind students about the deadline submission of specific activity, assignment, or requirement ahead of time," ($\bar{x}$ = 4.15); "set an appropriate time to discuss with students how they can improve their activity, assignment, or requirement," ($\bar{x}$ = 3.98); "provided online mentoring and scaffolding to students who find difficulty understanding the online lectures," ($\bar{x}$ = 3.39), and "created

activities that demonstrate the challenging learning outcome for the improvement of students' development toward the areas that need to be enhanced and develop new skills in the process" ($\bar{x} = 4.00$).

On study's qualitative aspect, particularly on instructional planning, the responses of the participants revolved around how to effectively implement online teaching and learning as a modality. The responses were thematically summarized. The first was selecting appropriate teaching pedagogies for online teaching and learning because respondents highlighted that *"online teaching is unlike face-to-face teaching where students have classmates that they can easily chat with, but in real-time online class, a teacher must carefully plan how to motivate and engage students."* Respondents also agree on *"using gamification and microlearning techniques to maintain engagement of students,"* which makes retooling and capacitating learning facilitators significant.

Moreover, all of the respondents agreed that professional development and upskilling are needed to stay updated on the current technologies and practices to meet the demands of online teaching. A majority of respondents also agreed that having a reliable learning management system is essential, but accessibility of students must be ensured if they have the capacity to access it considering that not all students varying levels of technological access, which makes securing availability of learning platforms, systems, and infrastructures another aspect of importance. Regarding this matter, some respondents pointed out that *"any technological tools should be chosen based on user-friendliness and compatibility of the students' technological accessibility."* They unanimously mentioned about *"providing clear guidelines and policies on online teaching specifically on attendance, assessment, behavior, and academic integrity."* Thus, establishing sound and relevant guidelines and policies should be in place because, without clear guidelines and policies, students will not know what is expected of them during class sessions.

On that note, developing instructional materials for the sought instructional delivery should be prepared ahead of time. The respondents highlighted that *"engaging and interactive instructional materials should not only be informative, but they must be visually appealing to sustain engagement."* Making sense of it, the importance of multimedia was noted. However, no matter how engaging the prepared materials are, teachers should ascertain if their students have the readiness for online teaching and learning because respondents believe that *"students' readiness is essential since not everyone has equal access to digital resources, and problem with time management or self-discipline in an online environment,"* which calls for analyzing students' needs, readiness, learning interest, and profiles.

Additionally, respondents emphasized the importance of autonomy and critical thinking on online teaching through designing activities that encourage self-directed and meaningful learning process, and calling for creating student-centered and meaningful learning experiences as part of instructional planning come to emerge. To create an avenue for students' discussion, respondents mentioned *"sharing of experiences on online teaching and learning among students should be promoted."* This can be addressed through providing aggressive teacher and student support, thereby providing a space to address students' sentiments or share their experiences, and will make online education more meaningful. Many of the respondents believe that the support provided could go beyond academic assistance to students. In general, careful instructional planning would lead to a well-structured organizational framework,

continual professional development for educators, accessible infrastructure, student-centered pedagogy, and clear, flexible policies.

Regarding instructional delivery, several respondents highlighted the critical role of securing functionality and stability of technology in supporting online education. Respondents agreed that *“technology should function effortlessly and avoid any interruptions that can derail the learning process.”* There was a shared concern about how to respond to technical issues when arise. Additionally, the importance of cybersecurity measures was highlighted regarding online assessments and personal student data.

Moreover, the research participants also stressed the need for contextualizing, localizing, and indigenizing instructional design *“to be easily understood by students and also help them on how to connect with the content and to find it more meaningful for making learning experiences more relatable.”* Time management also came up as another key concern in online learning making establishing time management and self-directed approach in the learning engagement as another factor to be considered. Respondents believed that *“without online classroom structure, students will struggle to manage their own time.”* Hence, respondents suggested setting clear deadlines and creating a system in course delivery to help and encourage students to take ownership of their learning to prepare for lifelong learning.

Furthermore, the appropriateness of learning conditions and standards was highlighted as an essential element of effective online education because the learning environment should be conducive to students' concentration and engagement to maintain high academic standards while also being flexible. Respondents also dealt with the benefit of critical thinking in assisting students to engage with complex ideas in an online environment. As mentioned, *“online education should transform students to ask the right question, encourage to analyze critically and correctly and think divergently,”* making developing critical and divergent thinking skills an essential element for the framework.

Another recurring element was the suitability of instructional approaches to teaching and learning. Respondents agreed that having real-time discussions, asynchronous discussions, individual work, group work, and peer reviews should be employed to motivate and engage students. A strong consensus had been established on maintaining a student-centered approach because *“students' needs, interests, and learning ability should be assessed.”* Respondents also noted that *“by focusing on students' needs, students' motivation and better learning outcomes can also be achieved.”* Thus, creating a community of practice and professional academic groups is an important aspect of promoting collaboration among students. It also stimulates the drive for innovation, and the quest for continuous learning development. As an alternative learning environment, research participants underscored, *“students should feel that their online education has the same power of providing skills and education to students.”* Thus, being part of a professional academic group helps teachers have an avenue to share their triumphs, thoughts, and frustrations regarding online teaching practices.

The qualitative discussion on learning assessment among respondents explored the elements that enhance online education. One of the elements is providing clear and appropriate assessment methods and activities because *“assessment is not only about measuring knowledge but to guide and provide students with opportunities to improve their skills necessary for acquisition of abilities.”* Respondents emphasized that

“assessments of students should not only test their cognitive skills, but it should also test students’ ability to perform tasks.” Importantly, it is essential to provide all details clearly to avoid confusion or misunderstanding. Thus, giving prompt, constructive, and objective to students’ academic performance is necessary in providing online education. It is mandatory to provide clear and prompt feedback to students in an online education so students can adjust and continue learning. The research participants added, *“feedback should provide doable suggestions, specific, and focused on the task for improvement.”* Along with this, giving clear instructions on learning engagement helps students to achieve what is expected of them to achieve. Respondents added that *“if students were not provided clear instruction, they may be confused and disengaged.”* Clearly, setting clear instructions would help reduce anxiety and disengagement among students. Furthermore, aside from setting clear instructions, choosing appropriate assessment methods is also a great aspect to be considered. Respondents advocated *“providing multiple assessment types to provide engaging tasks to students having different learning styles.”* This puts a strong emphasis on ensuring assessment tasks effectively cover the skills and knowledge that students are expected to acquire, thus, making sense of providing learning assessments to improve students’ learning performance.

To provide multiple learning assessment types, intensifying teachers' creativity in evaluating students’ performance and maximizing the use of technology needed to maximize teacher’s potential of being creative in evaluating students' performance. Respondents suggested that *“online assessments should be meaningful and reflection of course’ learning objectives.”* Among other things, respondents gave examples of digital tools that can be practiced like “interactive quizzes, discussion boards, video assignments, and digital portfolios” to engage students in the assessment process. However, it is not a guarantee that students have the ability to cope with all the lessons provided online despite clear instructional planning and delivery. Bridging this gap, respondents stressed the *“importance of providing interventions and support for students at different levels.”* Making providing intervention, remediation, and enrichment to learners another important element of learning assessment.

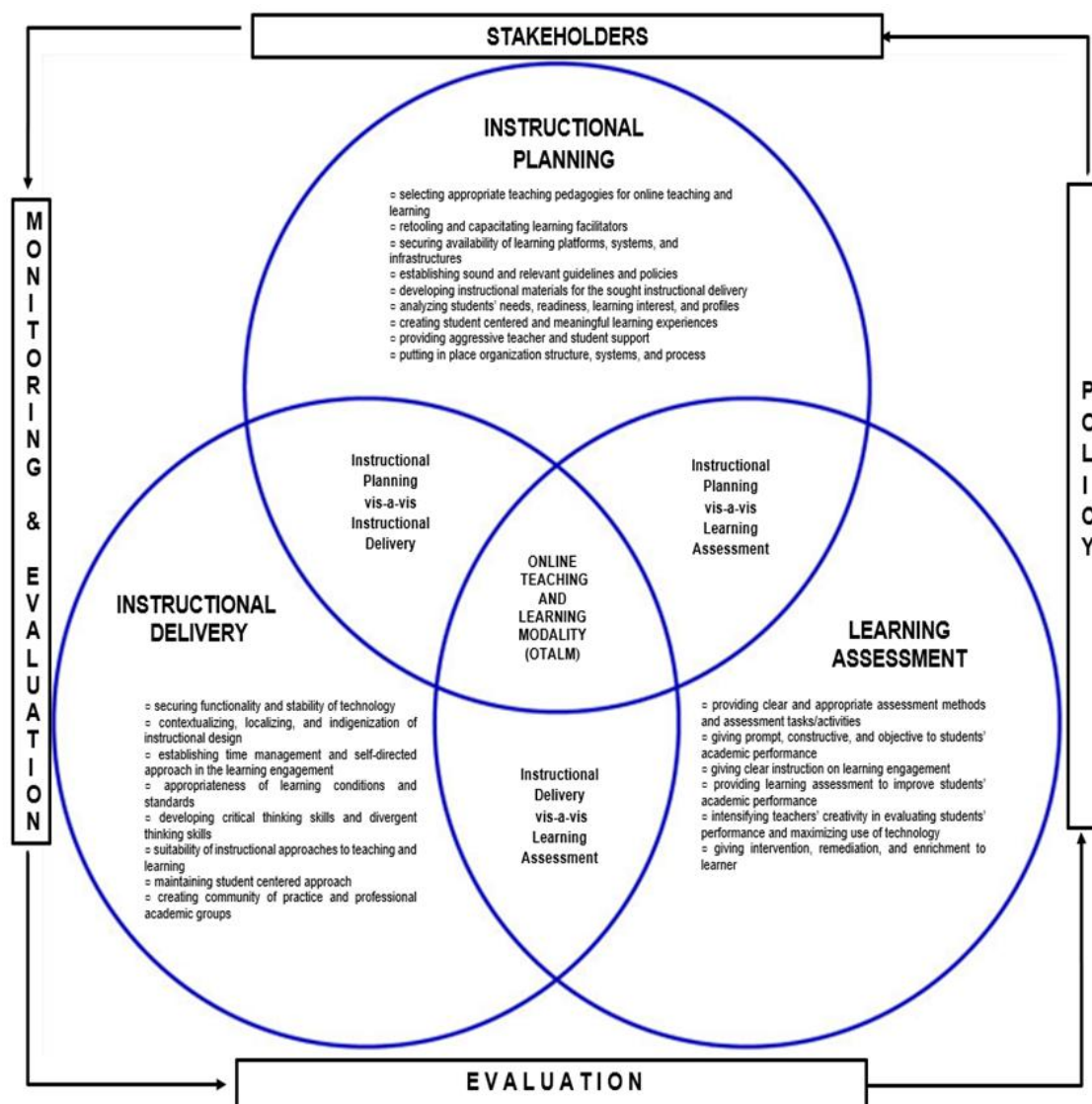


Figure 1. *The Proposed Educational Framework for Online Teaching and Learning*

Overall, the quantitative and qualitative assessments generally reflect the features, challenges, and strategies of online teaching and learning along with instructional planning, instructional delivery, and learning assessment which led to the proposal of the Educational Framework for Online Teaching and Learning (Figure 1).

Online teaching and learning established a strong presence in the landscape of education in Thailand. With the goal of improving the effectiveness of Thailand's online education, a well-defined framework has been established to ensure its effectiveness and sustainability starting from policy that aims to address challenges, promote meaningful engagement, and uphold the integrity of online education. This policy outlines the principles, roles, and responsibilities of all stakeholders to guarantee effective participation and collaboration. Stakeholders include students, teachers, administrators, industries, and policymakers, each contributing to the success of the

modality. Monitoring and evaluation are essential to assess instructional planning, delivery, and learning outcomes. Evaluation identifies strengths, weaknesses, and areas for improvement, promoting evidence-based decisions for the betterment of the online learning framework.

Conclusion and Future Works

The quantitative and qualitative assessments of this study gave emphasis on the salient features, encountered challenges, and employed strategies of online teaching and learning. Along with instructional planning, the need for creating engaging materials, student readiness, and professional training development of teachers for online teaching were just a few of the essential actions to be given consideration. Regarding instructional delivery, the essence of contextualizing the lessons to achieve student-centered approaches as well as integrating technology and fostering critical thinking would greatly establish a strong knowledge and skills foundation among students. In addition, learning assessment should emphasize diverse and meaningful methods of evaluating performance while providing timely and constructive feedback to students.

Hence, the findings of this study highlight the importance of the proposed Educational Framework for Online Teaching and Learning designed to overcome challenges, enhance the online learning experience, and maintain academic integrity. This framework aspires to enhance accessibility, engagement, and quality of online education in Thailand as the digital transformation continues to advance. Hence, this framework emphasizes the importance of meeting the needs of students in a rapidly evolving educational setting. In addition, prioritizing the development of students' competence and skills is the core of an effective online educational framework as it directly contributes to the growth and development of human resources. Moreover, when human resource development is prioritized, the framework contributes to achieving equitable access to quality education and economic disparity. Thus, the challenges to the effectiveness of online teaching and learning depend on the passion and dedication of teachers in adhering to the values and principles of the proposed Educational Framework for Online Teaching and Learning.

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Conflict of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.