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# Incorporating Action Research in Teacher Education Programs: Opportunities and Limitations

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## Abstract

In the rapidly evolving landscape of 21<sup>st</sup> century education, teacher preparation programs play a significant role in shaping the educators of tomorrow. This qualitative study aims to reveal both the opportunities and limitations of incorporating action research into experiential learning courses within teacher education programs. The researcher conducted a comprehensive thematic analysis to examine and categorize the participants' responses. Through in-depth interviews with 30 senior education students at Batangas State University, The National Engineering University, JPLPC Malvar, Batangas, Philippines, during the academic year 2021-2022, it was revealed that the opportunities arising from action research include enhanced teaching skills and pedagogy, problem-solving and reflective practice, collaborative learning and peer interaction, as well as professional growth and ethical awareness. Moreover, participants also encounter limitations, such as time constraints, resource accessibility, and ethical dilemmas. To address these challenges and capitalize on the opportunities, the study recommends strategies for improved time management, equitable resource access, and ethical training and support within teacher education programs. The study also suggests future research avenues, including longitudinal studies and comparative analyses, to further enhance action research's role in shaping the educators of the future.

**Keywords:** Action research, Teacher education program, Opportunities and limitation, 21<sup>st</sup> Century education

## Introduction

Education faces a myriad of challenges and opportunities in the 21<sup>st</sup> century. Central to this are the educators who shape the future of our societies through their commitment to fostering knowledge, critical thinking, and lifelong learning. As the demands on educators continue to evolve, so too must the methods by which they are prepared for their essential roles (Freeman, 1989). Teacher Education Institutions (TEIs) need to nurture the next generation of educators, who ready to face the complex and dynamic landscape of modern education.

In recent years, the integration of action research into teacher education programs has emerged as an avenue for producing educators who are not just proficient but also adaptive and innovative. In the Philippines, Teacher Education Institutions (TEIs) have incorporated action research into experiential learning courses such as Field Studies and Teaching Internship. These courses are stipulated in Commission on Higher Education Memorandum Orders (CMO) No. 74, 75, and 80, series 2017, as essential components of teacher preparation. These year-long engagements support authentic experiential learning through field study and actual classroom immersion for prospective teachers. The process begins with field study experiences involving observation and participation, progressing to teaching internship and guided/mentored classroom teaching. Notably, action research is encouraged to commence during Field Study courses and conclude during the Internship phase. This integration helps future educators apply action research in real classrooms, improving teaching and fostering reflection in teacher education.

McKay (1992) characterized action research as dynamic and reflective in nature. This empowers educators to investigate their own teaching practices, engage in problem-solving, and contribute to a culture of continuous improvement. Its practical orientation and capacity to bridge theory and practice make it an effective tool for teacher preparation. Its essence lies in the belief that educators should not merely be consumers of educational knowledge but active contributors to its creation and evolution. Zuber-Skerrit (1992) said that engaging education students in systematic inquiry and self-reflection could enhance their teaching skills, address classroom challenges proactively, and develop a heightened sense of ethical responsibility towards their students.

While the integration of action research into teacher education programs presents numerous opportunities for educator development as previously discussed, it is equally essential to acknowledge the limitations inherent in this process. Zhou (2013) mentioned that limitations may arise due to lacking sufficient training on action research, potentially affecting the quality of supervision and mentorship, while resistance to change within educational institutions, stemming from deeply ingrained traditional teaching methods and structures, can also hinder the integration and impact of action research. Moreover, teachers are frequently required to engage in responsibilities beyond teaching, such as attending meetings and handling administrative duties (Brown, 2002). As a result, a significant number of educators have found it challenging to carry out action research initiatives within school settings.

With the aim of understanding how action research can empower future educators and enrich teacher education programs, this study investigates the multifaceted dimensions of action research's integration in experiential learning courses through uncovering the opportunities it offers and the limitations it imposes. The researcher, who is handling experiential learning courses, may use the findings of this study to enhance the curriculum design, adapt pedagogical approaches, and implement tailored support mechanisms. These insights can inform actionable recommendations in the college, leading to a more effective and

responsive teacher education program that equips future educators with the necessary research skills and ethical awareness to excel in the ever-evolving field of education.

### **Objectives of the Study**

This study aims to reveal the opportunities and limitations in incorporating action research within teacher education programs among the senior education students in one state university in Batangas, Philippines during the Academic Year 2021-2022. Specifically, it aims to identify the opportunities and limitations of incorporating action research in experiential learning courses within teacher education programs; categorize participant's answers during interview based on essential themes and patterns; and formulate actionable recommendations to enhance the integration of action research in teacher education programs.

### **Theoretical Framework**

The Experiential Learning Theory by Kolb (1984) provides a comprehensive background for understanding the process of learning through experience, which aligns well with the objectives of this study on incorporating action research within teacher education programs.

Kolb's theory emphasizes the importance of concrete experience and reflective observation. By incorporating action research within teacher education programs, senior education students engage in practical teaching experiences (concrete experience) and subsequently reflect on these experiences. This reflective process allows them to identify opportunities and limitations of action research in enhancing their learning. The theory suggests that through this reflective process, students can gain insights into the effectiveness of action research as a tool for professional development in teaching.

Moreover, the theory highlights the four-stage process of experiential learning such as concrete experience, reflective observation, abstract conceptualization, and active experimentation. In the interview proper, the participants' responses can be categorized based on these stages. Their experiences and reflections may correspond to concrete experience and reflective observation stages, while their conceptualizations and proposed actions may align with abstract conceptualization and active experimentation stages. This categorization helps in identifying essential themes and patterns in participants' perceptions and experiences regarding the incorporation of action research in teacher education programs.

This paper also recognizes the importance of active experimentation, where learners test new ideas or concepts in practice. This may involve implementing actionable recommendations derived from the insights gained through the experiential learning process. By aligning recommendations with Kolb's framework, the researcher ensures that they are grounded in the stages of experiential.

## Methodology

### Research Design

This study utilized a qualitative research approach, as it aims to explore and understand the opportunities and limitations associated with incorporating action research in teacher education programs. Qualitative research allows for in-depth exploration and analysis of participants' experiences and perspectives (Creswell, 2014).

### Participants

The study purposively selected 30 teacher education students in one state university in Batangas, Philippines. These participants, at the time of the study, were in the final year of their respective teacher education programs, which included Bachelor of Secondary Education (BSEd), Bachelor of Elementary Education (BEEd), and Bachelor of Physical Education (BPEd). The selection criteria for participants included their successful completion of experiential learning courses, particularly Field Study 1 and 2 and Teaching Internship program, within public schools regulated by the Philippine Department of Education (DepEd).

The choice of participants from the last year of enrolment ensures that they possess a comprehensive background in educational practices, having engaged in both theoretical coursework and practical teaching experiences. This diverse representation across various education programs will provide valuable insights into the opportunities and limitations associated with incorporating action research within teacher education, as these students prepare to enter the field as educators.

### Data Gathering Tools and procedure

A formal letter was prepared by the researcher to request permission from the concerned authorities to conduct interviews with participants. This request emphasized the voluntary nature of participants' involvement and the importance of their insights. The purpose of seeking permission was to ensure ethical compliance and obtain official approval for engaging with participants.

The researcher met with participants in three different groups. These groupings were designed to facilitate interviews and discussions efficiently. Each group consisted of 10 education students, with consideration of their program. This grouping approach allowed for a structured and organized data collection process while ensuring that individual voices from diverse program backgrounds were heard.

Prior to participating in the interviews, each participant provided informed consent. The consent process included a thorough explanation of the study's objectives, the voluntary nature of participation, and the assurance of confidentiality. Participants were encouraged to ask questions and seek clarification before granting their consent, ensuring their full understanding and agreement.

In order to gather insightful information regarding the opportunities and limitations of integrating action research into teacher education programs, a set of structured interview questions was employed, aligning closely with the study's specific objective.

To gain responses on the opportunities of action research integration, these questions were given:

- Can you describe your experiences with action research during your Field Study and Teaching Internship?
- How has the inclusion of action research influenced your understanding of teaching and learning?
- Can you share any specific examples of how action research has benefited your practical teaching experiences?
- Do you think action research has improved your ability to identify and address challenges in the classroom? If so, how?
- Are there any particular teaching strategies or methods that you have developed or refined through action research?"

On the other hand, to elicit responses regarding the limitations of action research integration, the following questions were used:

- What challenges or obstacles have you encountered when conducting action research as part of your teacher education program?
- Have you faced any difficulties in collaborating with peers or instructors on action research projects?
- Are there any ethical considerations or dilemmas you've encountered while conducting action research in educational settings?
- Do you believe there are any limitations in the support or guidance provided to students engaging in action research within your program?
- Can you share any personal or program-related factors that may hinder the successful integration of action research into teacher education?

Participants' responses during the interviews were transcribed verbatim by the researcher. The encoded data accurately represented participants' answers without translation since the interviews were conducted in English, the language used by the participants. To ensure the accuracy and validity of the interview data, a member checking process was conducted. Participants were provided with transcripts of their interviews and invited to review them for accuracy. Any corrections or clarifications suggested by participants were incorporated into the final dataset. This member checking procedure enhanced the credibility of the study's findings by validating participants' perspectives and ensuring their voices were accurately represented.

### **Data analysis**

The data analysis process commenced with thorough data preparation, accurate transcription and organization of interview transcripts. To gain a deep understanding of the content, multiple readings of the transcripts were conducted. Thematic analysis was employed as the primary analytical approach (Braun & Clarke, 2006). During initial coding, preliminary codes were systematically generated to summarize key ideas within the data. These codes were subsequently applied to relevant segments of the transcripts, and thematic categories were formed through the systematic grouping of coded data. These emergent themes underwent further development to ensure that they accurately reflected the essence of the data and aligned with the study's objectives.

Throughout the analysis, a continuous review and improvement process were maintained. Data interpretation was performed in the context of the research objectives, and the significance of each thematic category was thoroughly explored. Findings were presented comprehensively in a research report, which incorporated significant statements and quotes from the interview data to illustrate key points.

## Results

The succeeding tables present the opportunities and limitations in incorporating action research in teacher education programs.

### **Opportunities in Incorporating Action Research in Teacher Education Programs**

Table 1 presents the opportunities identified by respondents in their engagement with action research. These opportunities reflect the valuable experiences and benefits senior education students gained from their involvement in action research.

As reflected in the table, participants said that action research played a significant role in their development as educators. They explained that it helped them develop innovative teaching strategies, adapt their methods based on research findings, and deepen their understanding of effective pedagogy. These responses indicate that action research is a valuable tool for enhancing teaching skills and pedagogical knowledge. It encourages educators to be proactive in seeking improvement, experiment with new approaches, and reflect on their teaching practices. This implies that the college can benefit from incorporating action research as a fundamental component of the program. Providing students with opportunities to engage in action research can lead to more effective teaching strategies, greater adaptability in response to student needs, and a deeper understanding of the art and science of pedagogy.

Moreover, the college may recognize the value of action research as a means of equipping future educators with problem-solving skills and a reflective mindset. Encouraging educators to proactively identify and address classroom challenges can lead to more effective teaching and improved learning outcomes. These implications are drawn from the participants' answers stating that problem-solving aspects of action research empowered them to identify and address challenges in their classrooms. They also emphasized the enlightening effect of reflecting on their teaching practices through action research. These data suggest that action research promotes a proactive approach to problem-solving and encourages educators to critically examine their teaching practices. It fosters a culture of self-reflection, which is essential for continuous improvement.

**Table 1** Opportunities

<b>Themes</b>	<b>Significant Statements</b>	<b>Researcher's Commentary</b>
Enhanced Teaching Skills and Pedagogy	<p><i>"Action research helped me develop innovative teaching strategies."</i></p> <p><i>"I learned to adapt my teaching methods based on my action research findings."</i></p> <p><i>"Through action research, I gained a deeper understanding of effective pedagogy."</i></p>	Action research helps senior education students improve their teaching skills and methods by encouraging them to try new strategies, adapt their teaching, and gain a better understanding of effective pedagogy.
Problem-Solving and Reflective Practice	<p><i>"Through action research, I identified a challenge in my classroom and found a solution."</i></p> <p><i>"Reflecting on my teaching practices through action research has been enlightening."</i></p> <p><i>"Action research empowered me to address classroom issues proactively."</i></p>	Action research empowers senior education students to proactively address classroom challenges, fosters continuous improvement through self-reflection, and enhances teaching quality by promoting problem-solving abilities and a culture of ongoing improvement.
Collaborative Learning and Peer Interaction	<p><i>"Collaborating with peers on action research projects enriched my learning experience."</i></p> <p><i>"Working with instructors allowed me to gain valuable guidance and feedback."</i></p> <p><i>"Peer discussions during action research enhanced my understanding of educational concepts."</i></p>	Action research offers opportunities for collaborative learning and peer interaction, enriching the learning experience, providing mentorship from instructors, and deepening understanding of educational concepts to improve overall learning outcomes.
Professional Growth and Ethical Awareness	<p><i>"Action research helped me become more aware of ethical considerations in education."</i></p> <p><i>"I feel a stronger sense of responsibility towards my students through action research."</i></p> <p><i>"Engaging in action research has inspired me to pursue lifelong learning in education."</i></p>	Participating in action research promotes ethical awareness, responsible teaching, and a dedication to high-quality education while inspiring lifelong learning and professional growth in education.

The table also shows that through action research the participants experience to collaborate with peers and seek guidance from supervising instructors. They also noted that peer discussions deepened their understanding of educational concepts. These indicate that action research provides a platform for sharing insights, receiving mentorship, and gaining a deeper understanding of educational theories and practices. This offers valuable opportunities for collaborative learning and peer interaction. These data imply that faculty may actively promote and facilitate action research because this can lead to a more enriched and effective

learning environment, where students and faculty can benefit from shared insights and continuous professional growth.

In addition, incorporating action research into teacher education programs can be a powerful way to equip future educators with the skills, mindset, and ethical awareness necessary for effective and responsible teaching. These findings underscore the value of action research as a transformative learning experience for senior education students. They revealed that this heightened their awareness of ethical considerations in education, instilled a stronger sense of responsibility towards students, and inspired them to pursue lifelong learning in education. Hence, it can be deduced that engaging in action research goes beyond skill development; it also contributes to personal and professional growth. It fosters ethical awareness, a commitment to responsible teaching, and a dedication to continuous professional development.

### Limitations in Incorporating Action Research in Teacher Education Programs

Table 2 presents the limitations encountered by senior education students in doing action research. These limitations encompass challenges related to time constraints, resource accessibility, and ethical considerations.

**Table 2** Limitations

<b>Themes</b>	<b>Significant Statements</b>	<b>Researcher's Commentary</b>
Time Constraints	<i>"Limited time for conducting action research due to coursework demands." "Scheduling conflicts with fieldwork and research activities."</i>	Balancing research commitments with coursework and fieldwork posed challenges, often resulting in time-related pressures that affected the quality of research processes and outcomes.
Resource Accessibility	<i>"Limited access to research resources and databases." "Inadequate funding for research materials and tools." "Availability of research materials varied among participants."</i>	Participants faced challenges due to resource constraints, impacting research accessibility and consistency.
Ethical Considerations	<i>"Ethical approval processes was difficult." "Maintaining student confidentiality presented challenges." "Balancing research ethics and classroom needs were complex."</i>	Ethical dilemmas arose, complicating the research process, particularly in ethical approval, confidentiality, and classroom ethics.

The table highlights the challenges the participants face in making their action research. These limitations can significantly impact the research process and outcomes, which, in turn, can affect the quality of action research they need to submit as requirement in the experiential learning courses. It is clear that the constraints related to time primarily stem from the demanding nature of coursework and the need to manage concurrent commitments, including

fieldwork, internship and research activities. The observed pressures on time can compromise the depth and thoroughness of action research, potentially limiting the scope of inquiry.

Another limitation discussed by the participants is accessing research resources, including databases, materials, and funding. These constraints can affect the comprehensiveness of research, as participants may have unequal access to essential tools and information. Moreover, ethical dilemmas add complexity to the research process. Participants shared challenges in navigating ethical approval processes, maintaining student confidentiality, and balancing research ethics with classroom needs. These ethical considerations can affect the design, execution, and reporting of action research.

With the identified limitations, there is a need for improved time management strategies among senior education students. Allocating dedicated time for action research or streamlining coursework to accommodate research activities could alleviate this constraint. Also, the college may ensure equitable access to research resources and consider providing additional support, such as funding or access to materials, to facilitate comprehensive research. On the other hand, ethical dilemmas highlight the importance of ethical training and support within teacher education programs. Providing guidance on ethical approval processes and strategies for maintaining student confidentiality while conducting research in educational settings can aid students in addressing these challenges.

## Discussions

The study reveals four (4) opportunities that senior education students gain through their involvement in action research within teacher education programs. Firstly, action research significantly contributes to the development of innovative teaching strategies and a deeper understanding of effective pedagogy. This fosters a proactive approach to teaching improvement and encourages future educators to adapt their methods based on research findings. This can enhance the quality of education delivery. As mentioned by Albalawi & Johnson (2022), adapting teaching methods based on research findings benefits educators by improving the effectiveness of their instruction and enhancing student learning outcomes.

Furthermore, action research empowers students to identify classroom challenges and seek solutions, promoting a culture of continuous improvement and reflective practice. This not only improves problem-solving abilities but also enhances the overall teaching quality. This enables the future educators to identify classroom challenges, develop innovative solutions, and enhance their teaching methods. It is worthy to note that they gain additional knowledge and skills on effective and responsive teaching practices. Abu (2016) said that action research helps teachers regularly assess their teaching, make improvements, and better meet their students' needs.

Action research also provides valuable opportunities for collaborative learning and peer interactions, where students work together on research projects, receive valuable guidance from instructors, and deepen their comprehension of educational concepts. These results indicate that integrating action research into teacher education programs can enhance the educational environment and contribute to ongoing professional development. As cited by Mooi & Mohsin (2012), action research can aid in the professional development of future teachers by encouraging them to actively identify and address challenges in their classrooms, fostering a culture of continuous improvement, and providing opportunities to refine their teaching strategies based on evidence and reflection.

On the other hand, the table shows the three (3) limitations encountered by senior education students while conducting action research. Notably, participants faced significant time constraints due to coursework demands and scheduling conflicts. This often resulted in rushed data collection and analysis, potentially compromising the quality of research outcomes. Hence, effective time management is essential for participants facing time constraints, as it helps them prioritize research tasks, reduce stress, maintain research quality, meet deadlines, and balance responsibilities effectively (Cox, 2019).

Resource accessibility including limited access to research resources, inadequate funding, and varying material availability, hindered the comprehensiveness and consistency of research. Ethical dilemmas also emerged, complicating the research process, particularly in ethical approval processes, maintaining student confidentiality, and balancing research ethics with classroom needs. Mapolisa (2012) reiterated that providing equitable access to research resources, offering financial support or grants for materials, and implementing comprehensive ethical training and support to help future educators navigate these challenges effectively.

These findings have significant implications for teacher education programs. While action research offers opportunities for enhancing teaching skills, problem-solving abilities, collaborative learning, and ethical awareness among future educators, addressing the identified limitations is essential. To ensure the success and effectiveness of action research initiatives, teacher education programs should focus on improving time management strategies, ensuring equitable resource access, and providing guidance on ethical considerations. Through this initiative, the college can equip future educators with the skills, mindset, and ethical awareness necessary for effective and responsible teaching. Mahammoda (2016) asserted that research-capability activities contribute to the development of more effective educators capable of addressing the challenges of modern education.

## **Conclusion and suggestions**

The opportunities identified through action research engagement emphasize its significant role in enhancing teaching skills, fostering problem-solving abilities, promoting reflective practice, and encouraging collaborative learning among senior education students. These opportunities underscore the potential for action research to enrich teacher education programs and equip future educators with valuable skills and ethical awareness. However, the limitations highlighted in this study, such as time constraints, resource accessibility issues, and ethical dilemmas, pose considerable challenges.

To advance the integration of action research within teacher education programs, several key research avenues emerge from the study's findings. Exploring effective time management strategies for senior education students engaged in action research is essential, addressing the challenge of balancing coursework, fieldwork, and research activities. As a practical step to address this need, the college could consider organizing a seminar focused on effective time management strategies for senior education students engaged in action research.

To ensure equitable access for all student-researchers, the administration may conduct a comprehensive assessment of the current accessibility and availability of research resources and funding for action research, followed by the development of a structured plan to address resource disparities. This plan may involve securing additional funding sources, expanding resource repositories, and implementing resource allocation strategies to support students' research endeavors.

It is essential to conduct in-depth research to identify and implement concrete strategies that simplify ethical approval processes, safeguard student confidentiality, and seamlessly integrate robust ethical training and support mechanisms within teacher education programs. This initiative may involve collaborating with ethics committees, developing standardized ethical guidelines, and providing training to ensure that ethical considerations in research are consistently addressed and adhered to by all students and educators.

For future research, consider a long-term study to evaluate how action research influences the ongoing professional development and practices of senior education students. Additionally, conduct a comparative analysis across institutions to explore how action research is integrated and examine potential policy changes that could enhance its effectiveness in teacher education programs. These steps will provide valuable insights and comprehensive guidance for improving action research in education.

### **New knowledge and the effects on society and communities**

Action research in teacher education programs extends its effects beyond the classroom to society and communities. It equips educators with improved teaching strategies and skills that promote active learning and critical thinking among students. By addressing local educational challenges, action research contributes to better educational outcomes in specific communities. Moreover, it fosters a culture of continuous improvement and reflective practice among educators, ensuring that education remains adaptable and responsive. The collaborative nature of action research encourages community engagement, enhancing the sense of ownership over educational processes. Lastly, action research informs evidence-based educational policies, leading to more effective and equitable educational systems and positively impacting society as a whole.

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## The Development of Personnel Administration Model of Souphanouvong University

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### Abstract

The main purpose of the present investigation was to develop a model for personnel administration of Souphanouvong University, Lao PDR. To achieve the objective, a mixed method research was employed and the study was divided into four phases. Phase 1 examined the current status of personnel administration. Regarding this phase, a document analysis was conducted and the survey questionnaires were administered to the sample group. The population for this phase was administrators and teachers who worked at the university in total of 415 people. The sample group was 324 participants who were selected by using a purposive sampling method. Phase 2 developed a personnel administration model by using a Dephi Technique. The questionnaire was used in this phase. The target group consisted of 19 experts who had experience in the area of personnel administration. Phase 3 evaluated the model of personnel administration in terms of feasibility, utility, propriety, and accuracy. The target group was 9 experts. The data were collected by using focus group discussion. Phase 4 confirmed the potential practice of the model. The target group for this phase was the administrators, staff, and teachers in total of 60 participants. The tool was the 5-Likert scale questionnaire and the data were computed to find mean and standard deviation. The findings are as follows. The current status of personnel administration was at a high level, meaning that the practice of personnel administration is appropriate. Also, the development of the personnel administration model consisted of seven components such as planning, selecting, managing, developing, rewarding, evaluating, and retiring. The evaluation of the model in terms of its feasibility, utility, propriety, and accuracy was at the high level. Finally, the results reveal that the model was confirmed as the high potential for application/ practiced. This research illustrates a significant knowledge for personnel administration in the context of Laos and beyond. It is suggested that the concerned university administrators consider implementing it and revising its policy.

**Keywords:** Personnel administration, Souphanouvong University, Administrators, Personnel, Model

## Introduction

Human resource development is considered the most important factor for socioeconomic development of Lao PDR to graduate from a list of the least developed status in 2025 and become an industrialized country. According to the 5-year Education Sector Development Plan IX (2021-2025), the main focus is to develop the national education system with the aim of fostering human resources to possess knowledge, ability, morality, value, national passion, honesty, physical health, mental health, and national solidarity (Ministry of Education and Sports, 2020, p.17-18).

A summary report on the implementation of the education and sports plans as well as personnel administration has pointed out that the problems and challenges related to staff recruitment and management are hindered by a limited number of the quota personnel given by the government. On the other hand, there was a large number of newly graduates and volunteer teachers, leading to a high rate of unemployment of new teachers because the priority was given to the employment of the volunteer teachers. However, the management of this was still ineffective; including a slow development of regulations due to limited budget. In addition, staff who were responsible for this work still lacked experience in the management (Ministry of Education and Sports, 2020, p. 62). Also, the current status of teacher professional development and education and sports personnel upgrade was too general and inappropriate to the current situation, lesson learned, experience, and responsibilities, leading to the insufficiency of teachers at various levels and subjects (Department of Personnel and Human Resources, 2020, p.4-5).

Personnel development is an art of organizations to foster a positive environment for the implementation of work by personnel and staff, leading to increased quality and considered as a process of learning that staff pursue continuously. This was stated in the personnel management strategy of Lao PDR by proposing 9 strategic plans. One of which focuses on improving the training system and personnel development which indicates the importance and requirement for personnel development. To meet this requirement, a developmental strategic system was created with the aim of ensuring efficiency and consistency with the positions and in accordance with needs of specific sectors (Ministry of Home Affairs, 2018, p.13).

In terms of the personnel management, Luangprabang province has evaluated and considered the situation for implementing the result of the VIII provincial personnel management as follows: A strategic plan was created to facilitate the work of upgrading and developing under the administration by providing educational support at various levels with responsibilities and in another local placement. Additionally, technology has been used in storing personnel biodata, account, and statistic management. This ensures the correct and systematic data, providing information for research, management, deployment conducive for the implementation of policy associated. The appointment, management, and deployment of personnel were also in responses to the needs and requirements of duties, positions of administration, action plans, appropriateness, abilities, agreement, and key personnel in alignment with party committees and self-administration.

Furthermore, the policy and social welfare works were practiced to ensure the effectiveness of staff-personnel, soldier-police as indicated in the law, regulations, especially the implementation of the salary system, support money, and other financial support on the basis of the current financial and economic situation of the country. This practice was also applied to appreciate, salary upgrade, retirement support as well as officials who greatly contributed to the protection and development of the country. Also, the staff who faced

challenges and difficulties, and deaths were also looked after and supported by the related organizations (Report on Improving and Upgrading Administration 5 years (2016-2020) and Future Directions 5 years (2021-2025) at the Meeting on Administration the VIII of Laungprabang, Date 16-17 December, 2021).

Souphanouvong University has performed and practiced its roles and responsibilities in accordance with the decree No.009/PO, dated on the 3<sup>rd</sup> of April 2009 by the Office of Personnel and Administration as well associated sections of the faculty levels, centres, and library who centrally collaborated about personnel administration. The administration in this sense followed the duty and scope of responsibilities stated in administration of the university which consists of: 1) educating political ideology, morality and regulations for staff, teachers, and students within the university, 2) conducting short trainings for staff of different sectors as required by society, 3) carrying out scientific research and developing technology of various sectors, 4) disseminating the research results which are beneficial for social and economic development of Lao PDR (Decree No. 009/PO, 2009).

Because of the above mentioned reasons, the researcher, an administrator at Souphanouvong University, was interested in investigating the current situation of the personnel administration by focusing on 7 components such as: planning, selecting, managing, developing, rewarding, evaluating, and retiring. The objectives of the present research were formulated on the basis of reviewing related literature and studies. Additionally, the objectives were drawn from the current situation of challenges and problems associated with the issue being examined. Therefore, the following objectives were formed. First, the present research was conducted to examine the current status of personnel administration of Souphanouvong University. It also aimed to develop a model for personnel administration. Third, it focused on evaluating the model in terms of feasibility, utility, propriety, and accuracy. Finally, it confirm the model of personnel administration for its potential implementation/practice.

The researcher is interested in the issue because personnel administration is important as it contributes to and ensure the effectiveness and efficiency of the education administration. The current practice of personnel administration of Souphanouvong University still faces a number of challenges such as a lack of proper planning and managing personnel staff. It was hoped that the findings provide suggestions and advice on enhancing personnel administration of the university and beyond.

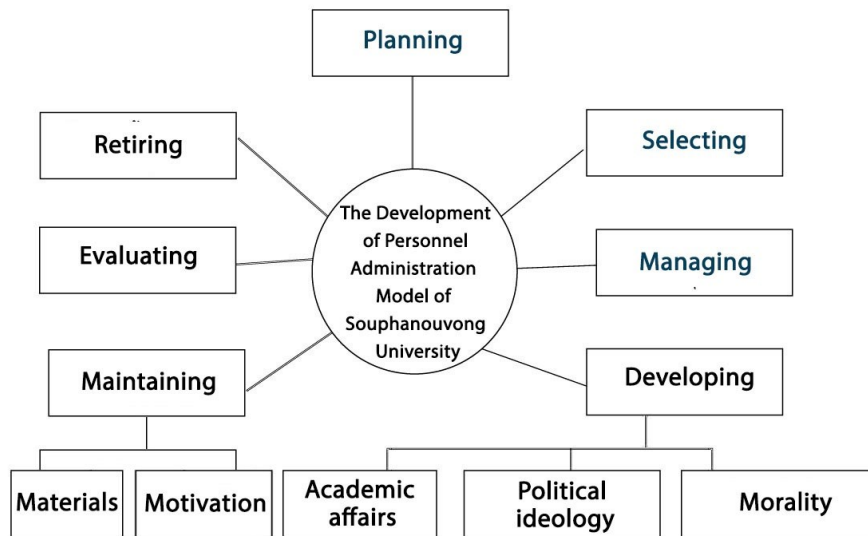
## **Methodology**

To fulfil the objectives, a research and development (R&D) method was adopted in this study (Godin, 2006) and it was divided into 4 phases as follows: Phase 1 investigated the current status of personnel administration. A document analysis and a survey questionnaire was used. 342 participants were selected. These include administrators, staff, and teachers. A purposive sampling method was used for the the participants selection. The data were analysed by using a computer program to find mean and standard deviation. The questionnaire was validated to ensure its reliability and congruency as follows. First, the questionnaire was evaluated to measure its content validity, construct validity, and item objective congruency (IOC). The IOC result of each item ranged from 0.80-1.0, indicating that the questionnaire is acceptable. The questionnaire was then piloted with a group of 60 academics who were not the participant of the main study. The pilot was run to find its reliability as suggested by Cronbach's Alpha Coefficient. The reliability is 0.89 which indicated that it is acceptable. Phase 2 developed a model of personnel administration by utilizing a Delphi Technique. The

questionnaire was employed in this phase to seek perceptions of 19 experts who were selected by using a purposive sampling method. These experts include deputy head of Department of Higher Education, deputy head of Personnel Department, deputy head of Laungprabang Education Department Office, deputy head of Provincial Personnel Division, vice-rectors of Souphanouvong University, deans and heads of university offices. They were selected due to the following criteria. First, they had at least 10-year experience of administration. Second, they had a 15 year of education institutions administration. Finally, they had a high administrative position in the field of education. The data were analysed by using percentage and content analysis (open-ended questions). The data were then analysed to find Interquartile-Range of each item and further suggestions. Phase 3 evaluated the feasibility, propriety, utility, and accuracy of the model. The target group was 9 experts, which include the president of the university, head of Higher Education Department, head of Personnel Department of Ministry of Education and Sports, head of Personnel Division of Laungprabang, head of Home Affairs Division of Languagprang, head of Lanngrabang Education and Sports Division, vice-president of the university who was responsible for personnel affairs, academic affairs, and dean of Faculty of Physical Education of National University of Laos. These experts were invited to a group meeting (Cohen, Manion, & Marrison, 2011) by using a method of Stufflebeam (2003) such as: utility, feasibility, propriety, and accuracy. The tool that was used in this phase was the rating scale questionnaire of 5 levels. 5 means strongly agree and 1 means strongly disagree. The data were computed to find means and standard deviation. Phase 4 confirmed the personnel administration model. The perception questionnaire, consisting of 7 components was administered to the target group to collect the data. The target group included administrators, staff, and teachers in total of 60 participants. The participants include deputy heads of offices, centres, institutes, personnel department, and concerned academics. They were selected by using a purposive sampling method. The underlying reason for utilizing the purposive and criteria sampling method was because this research focused on an in-depth exploration of the phenomenon of interest (Patton, 1990). For this reason, the participants who met these criteria were invited to participate in this study. In addition, the purposive sampling method allows for convenience and accessibility (Palinkas et al., 2015) while permitting the researcher to examine the issues of interest deeply.

## Results

The findings are presented in order to phases and objectives as indicated earlier. The overall result of the current status of personnel administration was at a high level, meaning that the current practice of the personnel administration is appropriate. The findings also show that the model of personnel administration consists of seven components: planning, selecting, managing, developing, rewarding, evaluating, and retiring. These components are vital for effective administration of the university. Additionally, the findings indicate that the evaluation of the model in the areas of feasibility, utility, propriety, and accuracy were perceived as the high level, indicating that the model can be taken into consideration for effective application. Finally, the results reveal that the model personnel administration was perceived as the high potential implementation in each aspect as indicators reveal. To conclude, this research yielded a significant knowledge for personnel administration, especially in terms of the seven components for Souphavounng University and beydong. Drawing from the main findings, key components of the model can be summarized as follows. planning, selection, managing, developing, rewarding, evaluating, and retiring. The model is illustrated in Figure 1 below.



**Figure 1** Model of personnel administration

## Discussions

Objective 1: The current status of personnel administration

The findings reveal that the current state of personnel administration of Souphanouvong University was perceived as good and appropriate. This means that, although some components were not fully practiced, the university had done quite well in terms of personnel management and administration. The problems, however, was that some key components were not fully focused on in real situations. This is due to various factors such as a lack of full attention, proper monitoring and evaluation, and corporate culture in the sense that it was indirect management and administration of the organization. An indirect way of discussing and giving feedback to those who violated the rules and regulations might reflect ineffective administration. This means that the administrators had the capability to plan, manage and take action in terms of personnel administration (Rajaratnam, 2007; Junboonnak, Ngamprakhon, & Ruangsanka, 2018).

Objective 2: The development of personnel administration model

The development of personnel administration model of Souphanouvong University, Lao PDR consists of 7 components such as: planning, selecting, managing, developing, rewarding, evaluating, and retiring. These components play a crucial role in the administration of the personnel. Planning is considered the first for effective administration. In this regard, proper and systemic planning is conducive to the success of personnel or general administration (Jeseviciute-Ufartiene, 2014). Selecting staff for work is also important to ensure the appropriateness. There is a criteria for recruiting and selecting staff which is mandated by the university. Once staff are selected, it is imperative that they are assigned with appropriate responsibility. Putting the right man for the right job is vital for the efficient work. To meet

this requirement, it is important to consider the qualification of the staff for right job (Boselie, Van & Veld, 2021). Developing personnel or human resource is another aspect to pay attention to for upgrading and building skills and knowledge of the staff. In-service professional training is one method that the university has conducted (Swanson, 2022). Another component is rewarding which plays a vital role in the process of personnel administration. Rewarding in this sense refers to the process of supporting and giving encouragement or the benefit of the staff. To maintain the staff within the organization, it is important for the university provide proper support and encouragement (Naqvi et al., 2022). What is also important for personnel administration is evaluating. Evaluating refers to the process of evaluating work performance. This is to ensure that staff have achieved their responsibilities and also to be used as a guide for staff evaluation and promotion. There are two types of evaluation: academic staff evaluation and administrative staff evaluation (Wang & Spitzer, 2005). In this regard, academic and administrative staff are required to keep portfolios of related documents. Retiring is also an important component of the personnel administration at Souphanouvong University. The process of managing this is in alignment with the guidelines of the Ministry of Education and Sports and Ministry of Home Affairs. The process, however, might not be properly practiced in the actual implementation.

Objective 3: The evaluation of the model of personnel administration of Souphanouvong University.

The evaluation of the model of personnel administration of Souphanouvong University was at the high level overall. This means that each aspect of the model was useful, appropriate, feasible, and accurate. To elaborate, each aspect/component of the model is perceived by the target group as the high level in terms of its possibility for improving and developing personnel administration of the university in particular. It is useful for other education institutions to consider using this model as a guide for their own sake of personnel development.

Objective 4: The confirmation of the model in terms its potential practice

The confirm of the personnel administration regarding its possibility of practice reveal a high level in each component. When considering from the highest to the lowest. First, the component about selecting was perceived as the highest, followed by managing, retiring, developing, planning, evaluating and rewarding respectively. Each of these aspect is discussed as follows.

Regarding selecting, seven indicators were found such as: 1) appointing a selection committee systematically, 2) the quotas given was managed according to the actual needs of each sector, 3) an announcement for recruitment should be done through various platforms such as newspapers, magazines, radio, television and social media, 4) indicating a selection criteria of applicants such as age, health, character, and morality, 5) designing a selection test that is suitable with nature of work, position, and qualification, 6) selection is made on the basis of criteria of honest, ethical and fair selection, and 7) the results of selection should be announced to the related persons and applicants. The practice of selection committees represented the administration which follows the step and system to ensure transparency and fairness for all sectors. This practice is in line with the decree on Personnel (2009) of the Lao PDR, No. 82/PO, Vientiane 19<sup>th</sup> of May 2003 which states that personnel are considered the Lao citizen who are allocated in central, local and international organizations and were received salary and other support from the government as indicated in Article 4 of the law on personnel management. Additionally, the selection process must be in alignment with the principles and unity between central and local administration. The findings here are also consistent with Mounikorn & Phousiri (1994, p.28) who stated that the process of selecting must be appropriate for the position and be fair for the applicants. This also related to Outthachack (2008, p. 45) who

pointed out that selecting is a process of finding out personnel who have knowledge, skills, ability and wisdom for the sake of the organization. There are two schools of thoughts in this regard. First, it was stated that personnel with wisdom and leadership skills can be trained to perform all types of work. Second, it was stated it is not possible for a personnel to be good at all things because different persons have different abilities, and experiences can be fostered during work and professional experiences.

With reference to managing, six indicators were found: 1) appointing was made on the basis of work nature, position, and academic major, 2) it was done on the basis of regulations and quotas given to each sector, 3) having orientation for new staff, 4) official appointment for new staff, 5) provide suggestions to new staff to help them understand their roles and responsibility by doing at one year internship, and 6) appointing existing staff to work, position and academic major as appropriate. This process should be consistent with the guidelines approved by the Ministry of Education and Sports (2020, p. 27), Decree of Prime Minister No. 117/GoL, dated on 5<sup>th</sup> June 2015 on higher education of Lao PDR, Section 6 is about teachers and personnel. Article 36 which states that teaching staff and teachers who work at the higher education institutions must be appropriate in terms of number, academics, knowledge, abilities and morality, meeting the conditions as indicated. This is consistent with Phetthavong (1996, p. 59) who stated that appointing personnel staff is a process of selecting staff who are capable of working and this also is consistent with Phommanimit and others (2003, p. 15) who wrote that appointing personnel is a process of recruiting applicants for government officials and managed for vacant positions.

With reference to retiring, four indicators were found: 1) considering to move according to the position and nature work stated in the regulations, 2) considering to abstain from work by receiving a compensation money as indicated in the regulations, 3) considering and approving requests to retire made by personnel, and 4) replacing personnel who has retired as indicated in the regulations. Generally speaking, Souphanouvong University had a number of personnel who were no longer hired each year, including moving, requesting for a compensation when quitting work and retirement in alignment with regulations. This is the responsibility of administrators, including consideration judgement of each sector which related to decree on teacher personnel, No. 177/GoL, article 27 on finishing teaching jobs in form of being sacked, resigning or other reasons. It can be stated that the reasons for finishing and retiring from work are as follows: official retirement, asking for leave absence from work, or was moved to another sector. This is consistent with Law on staff-personnel, No. 74/NA, article 64 on completing being personnel-government officials in the following conditions: leaving, lost of nationality, lack of responsibility, being sacked, disability, retirement, and deceased. In addition, article 65 of the law indicates that personnel-government officials can leave from work without being forced, but can request a permission and financial support. For those whose services are less than five years and leave of absence from work without an official permission are considered absent from work and no complementary money was considered. Article 66 of the law states that those who lost of nationality also considered finished the services. Article 67, leaving responsibility, points out that personnel who are absent from work more than one month without proper reasons are considered disqualified for continuing work. Article 68, sacking, states that those who violated the regulations and law or executed by court are expelled from work, article 69 also indicates that those who are disable and have mental problems and are no longer served as stated by medical doctors cannot work and will receive social welfare as indicated. Article 70 points out that those who meet the criteria and regulations of retirement are considered under the law and principles.

In terms of developing, 14 indicators were confirmed: political ideology: 1) providing the opportunity for personnel to take part in political training courses at various levels in both domestic and overseas countries, 2) providing the opportunity for personnel to have an orientation in political idealogy, policy, guidelines, regulations and orders from time to time, 3) providing the opportunity for personnel to have a study tour about administration and governance from various sectors, 4) allowing personnel to express ideas through implementing the policy, law and work, 5) supporting and fostering personnel in working, leading by examples with responsibilities for others, 6) supporting personnel to possess honesty, transparency, ethics, well organized plans, and without corruption, 7) supporting personnel to maintain solidarity by participating in various activities, 8) providing the opportunity for personnel to take part in extra organizations and party to become good leaders; academic affairs: 9) creating personnel development plans appropriate with a position and in consistency with an academic qualification, 10) seeking scholarhsips for peronnel to upggrade education in domestic and overseas institutions, 11) fostering an academic ability for personnel by conducting training, seminars and exchange programs on different topics, 12) supporting personnel to do scientific research, publication, and dissemination for society, 13) supporting personnel to write, compile textbooks and academic papers, and 14) supporting academic cooperation such as: developmental partnership. It can be seen that deveoloing personnel cannot be seperated from policy and political idealology which is consistent with a decree on personnel devlopment in 2017, section 2 which states the model of personnel development and training, article 7, orientation for new personnel about the roles and resonsibilities (Killian, 1989. As stated by Sourinthone (2010, p. 38), developing personnel is a process of fostering knowledge, ability and skills for staff, leading to increased responsibilty, effectiveness and efficacy. Additionally, organizations concerned should conduct training and support personnel in enhancing capacity, which is consistent with Saipinta (2011, p. 17) who stated that developing personnel is vital which cannot be underestimated although problems and obstracles exist. After all, this depends on the sacrifice and intent of the administrators and teachers to consider the personnel development.

In terms of planning, six indicators were found. 1) a reflective meeting at the administrative and academic level from time to time, 2) analysis of position and work data which is suitable for each sector, 3) planning the needs for personnel according to the nature of work, position and academic degree, 4) planing and indicating the target which is appropriate with the needs of each sector, 5) evaluating and improving personnel administration continously, 6) indicating academic degree with the nature of work and position in each sector. Due to the importance of the planning stage, Souphanouvong University should have a system for storing data and each sector should report the number of personnel. The plan should also focus on an important role and necessity in order to ensure the achievement of the plan. This is consitent with Castetter (1996) who pointed out that human resource management was the first step for personnel administration which was expected for recruting personnel in the future and should be consistent with three factors such as: 1) general knowledge of the personnel, 2) organizational knowledge, and 3) knowledge about a current and future direction of the organization. As Mondy, Noe, & Vongsarnsy (1997) stated, a definition of planning for personnel is the process of anticipating the needs of the organization, types of personnel require, education qualifications, numbers and other processes.

In terms of evaluating, three indicators were found: 1) appointing a committee to assign rights, responsibilities, and duties as indicated, 2) evaluating work performance of personnel in a systemtic, proper and continuous manner, and 3) taking notes of the data regarding teaching personnel and administrator in terms of the existing problems to improve

the system. Through involving various sectors, indicating a division of duty as well as ensuring credibility and fairness. Through this process, data were collected and results of evaluating can be used as a baseline data for improving and developing personnel. Ministry of Home Affairs (2018, p. 1-2) stated that evaluating personnel is to consider and measure the achievements that personnel has performed by focusing on the principles and agreement of the committees. It also allows for democracy, unity and growth to foster. If evaluation is guaranteed, it is important for the organization to maintain transparency, openness, fairness, accuracy and principles, leading to fostering solidarity and prosperity as expected and indicated. Furthermore, Phimkham (2018, p.44) said that evaluating work performance is to assess the success by considering the amount of work and its effectiveness. This is the responsibility of the administrators, following the principles and criteria set. In this regard, three main aspects should be focused on: characteristics or nature of work, ability to work and work commitment. The benefit of evaluating is that it allows personnel to know their performances and weaknesses that they can be improved in the future. It also a tool for administrators to consider a promotion and increase salary. This is related to Makornphone (2016, p.34) who stated that evaluation is to assess work performance of personnel within an organization by following the appointed committees, with the aim of finding out evidence and data for regarding and punishing in case of being found guilty. In addition, Thengpadit (2014, p. 23) pointed that evaluation is an activity of personnel administration to certify performances in terms of knowledge, ability and implementing work through using criteria and principles of evaluation set by the organization. This is also consistent with Herbert (1972) who found that work evaluation and assessment is a method for assessing personnel performance which can be done through observing and actions.

Regarding rewarding, there are eight indicators: materials, 1) providing salary and social welfare for personnel on time, 2) creating policy for teacher funds and funds for assisting each other to solve problems, 3) providing the conditions and opportunities for field work and academic services; motivation, 4) evaluating work performance according to the principles, regulations with transparency and a reliable evidence, 5) giving appreciations with medals and rewards for success and outstanding performances, 6) providing consultations in terms of work responsibilities and prevent absence from work and leave of absence from work, 7) creating a good environment which is conducive for working, and 8) fostering experiences and knowledge to ensure security and safety at work. It is obvious that supporting personnel with materials and motivation is important for fostering living conditions and daily situation of the staff as well as teachers. Additionally, receiving the opportunity to work in the field as well implementing duties allowed personnel to foster life skills and experiences. Also, it is important to consider academic degree to be consistent with the position, development, and promotion. This is to ensure that personnel are equipped with abilities and skills that are crucial for work. More importantly, administrators should assign work to the personnel whose knowledge is related, avoiding using power in the wrong way and those who are closely associated with them. As Jaming (2016, p.28) and Makornphone (2016, p.32) pointed out, the purpose of supporting personnel is to foster effective work and to enhance reliability, faith, and fairness within the organization. Fisher & Robert (1999) mentioned that most organizations are cautious about giving a safe and healthy environment of work place for personnel because this saves budget and follows the law of the country.

## Conclusion and suggestions

The present research was conducted to find out the current status of personnel administration, develop a personnel administration model, evaluate the model and confirm its potential practice for Souphanouvong University. A mixed method was employed and the findings provide significant results for personnel administration development. Drawing from the findings, following suggestions are made:

### Policy suggestions

1. The university should take the model into consideration as the guideline for human resource management and development.
2. The university should take the key role in developing the model to become the pilot model for all education institutions in Lao PDR and beyond by cooperating other related stakeholders.
3. The university should conduct follow up programs to monitor and support the implementation of the model.
4. State education institutions should cooperate with private education institutions in upgrading the processes and management of personnel administration.

### Suggestions for future research direction

Future research should focus on:

1. Developing a teacher administration model to provide guidelines for teacher professional development;
2. Fostering motivation for developing personnel administration model of the state and private education institutions;
3. Implementing the model and expectations of the teachers/staff; and
4. Investigating the possible policy for developing education administration models.

## New knowledge and the effects on society and communities

The present investigation was carried with the aim of forming new knowledge and finding out insights into the issue of personnel administration in the context of higher education, a university level, in Lao PDR. Although this research is limited to the context of Souphanouvong University, Lao PDR, it provides insights and useful data for academic discourse. Specifically, new knowledge and contributions can be suggested as follows. Firstly, this study identified and synthesized theories, concepts, and documents about personnel administration which is new area of study in the context of higher education in Lao PDR and beyond. Secondly, this study reveals key components of a personnel administration model such as: planning, selecting, managing, developing, rewarding, evaluating, and retiring. These components provide insights and knowledge to the area of education administration.

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## Metacommunication Versus Conversational Practices of Teaching Personnel at a Constituent Campus of a Southern Tagalog State University, the Philippines: A Study on Manifestation and Their Relationship

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### Abstract

This study examines the intricacies of metacommunication and conversational practices of an incidental sample of 106 teaching personnel engaged in remote teaching at a constituent campus of a Southern Tagalog state university, the Philippines. The primary objective of this study is to measure the extent to which teaching personnel manifest metacommunication across different forms of communication, including verbal, non-verbal, and written expressions, and how they exhibit conversational behaviors during pedagogic interactions. These behaviors encompass openness, empathy, positivity, immediacy, interaction management, and expressiveness. The research also endeavors to test if a significant relationship exists between metacommunication and these conversational practices. Employing a correlational research design, a survey questionnaire, and utilizing statistical tools such as mean, standard deviation, and Pearson  $r$  to analyze the quantitative data collected, the findings reveal heightened levels of metacommunication and a prevalent presence of conversational practices among educators in the higher education context. Furthermore, the research identifies a correlation between metacommunication and conversational practices. In light of these findings, it is recommended that educators proactively nurture a positive and professional classroom environment while considering individualized student assessments. This approach can foster more constructive pedagogic interactions within the higher education teaching community while enhancing the learning experience for both educators and students. The study also emphasizes the vital link between metacommunication and conversational practices in education while illustrating its impact on communication quality, learning experiences, and societal dialogue for enhanced empathy and positivity for broader societal benefits.

**Keywords:** Conversational practices, Higher education, Metacommunication, Pedagogic interaction, Positive classroom environment

## Introduction

In today's rapidly evolving world, effective communication is more crucial than ever for navigating the complexities of diverse interactions and resolving conflicts (Wiggill & van der Waldt, 2020; Tili & Barker, 2015; Reidhead, 2021; Alyammahi et al., 202). However, the exponential growth of digital platforms and globalization have exacerbated communication challenges. Misinterpretations and misunderstandings abound, leading to heightened tensions and fractured relationships across cultural and professional boundaries. Additionally, in an era plagued by rampant misinformation and disinformation, the ability to discern truth from falsehoods is increasingly challenging, further complicating effective communication.

Amidst the pandemic brought by COVID-19, the emergence of emergency remote teaching, aimed at providing reliable instructional support during crises, has thrust communication into an even more critical role. Face-to-face interactions have been temporarily replaced by technology-mediated communication. This shift from face-to-face interactions to technology-mediated communication has heightened the significance of effective verbal, non-verbal, and text-based communication (Shkurko, 2022; Eddy, 2019). This transition has brought to the forefront the complexities associated with interpreting signals accurately within virtual spaces; thus, aggravating the challenges inherent in organizing remote teaching during crises.

The transition to online learning has posed significant challenges for both students and teachers. While e-learning tools have played a vital role in maintaining continuity in education during the pandemic, adapting to the virtual environment requires effort and adjustment. Moving from traditional face-to-face courses to fully online “remote teaching” settings presents numerous challenges, not least of which is ensuring that students comprehend new materials and modes of communication (Goldman et al., 2022; Garcia-Vedrenne et al., 2020).

The exigency for development in remote teaching practices is underscored now more than ever. The persistent challenges in organizing remote teaching during the COVID-19 era have underscored the urgent need for innovative approaches that address the intricacies of virtual communication and learning. Central to this endeavor is the exploration of the potential of teachers' metacommunication and conversational practices to enhance learning outcomes effectively. By examining how verbal, non-verbal, and text-based communication intersect within virtual educational spaces, educators can devise strategies that facilitate comprehension and engagement, thereby fostering a more conducive learning environment.

Baltzersen (2013) illustrates metacommunication as a process of reflecting upon ongoing communication itself aside from focusing on the content of the message. This reflection serves several purposes, including clarification or appraisal of communicative messages. Through metacommunication, individuals can gain insights into the underlying intentions, meanings, or emotions behind the messages exchanged. Verbal metacommunication involves explicit statements that comment on the communication process, such as asking for clarification or expressing appreciation for effective communication. Non-verbal metacommunication encompasses gestures, facial expressions, and body language that convey additional layers of meaning beyond the verbal content, such as nodding to indicate understanding or frowning one's brow to signal confusion. Text-based metacommunication includes written messages or annotations that reflect on the communication process, such as adding comments to a document to highlight areas of agreement or disagreement or using emojis to convey tone or mood. By utilizing verbal, non-verbal, and text-based metacommunication,

individuals can enhance understanding, promote effective communication, and build stronger interpersonal connections.

In pedagogy, conversational practices are integral for effective communication and learning in large student groups. These practices encompass interpersonal skills that cultivate an environment conducive to student engagement and collaboration. Openness fosters trust and enables free exchange of ideas; empathy builds rapport by understanding students' perspectives; supportiveness nurtures student success through constructive feedback; positiveness maintains motivation; equality ensures fairness; confidence inspires trust; immediacy fosters personal connections; expressiveness enhances understanding; other-orientation promotes inclusivity; interaction management facilitates collaboration. These assets collectively enable educators to manage large classes effectively, fostering dynamic and engaging learning environments conducive to student achievement (DeVito, 2016).

Questions about the efficacy of online interpersonal communication compared to face-to-face interactions have arisen. Researchers are exploring novel methods, such as the use of emoticons, small capital letters, and repeated punctuation marks, to compensate for the absence of nonverbal cues (Wagner et al., 2023; Kotlyar & Ariely, 2013). Additionally, the research aims to promote positive pedagogic interaction in remote teaching through metacommunication and conversational practices.

Traditional pedagogy designed for face-to-face learning does not seamlessly translate to online education. Teachers lacking technological proficiency require proper training and professional development to navigate virtual classrooms effectively. Empirical evidence suggests that positive pedagogical interactions create effective learning environments and enhance learning outcomes (Müller & Wulf, 2022; Cardullo & Burton, 2016).

Given the increasing reliance on technology for communication, understanding metacommunication has become paramount. Metacommunication is categorized into textual and non-textual meaning, considering both the purpose and means of communication. Metacommunication skills are essential for effective interactions in the absence of face-to-face contact (Behrens & Kret, 2019).

Furthermore, effective teachers possess the ability to listen to students, convey ideas clearly, adapt communication methods to diverse learning styles, and make complex concepts accessible. They possess clarity of thought, adaptability, and presentation skills, fostering student motivation and comprehension (Macsuga-Gage et al., 2012).

Assessing the meaning and concept of communication is undoubtedly valuable, but the practical application is equally significant. Conversational practices are the cornerstone of successful interactions, contributing to academic success and improved social interaction skills among students (Bojesen, 2019).

In light of these scenarios, this study examined the metacommunication and conversational practices in pedagogical interactions within higher education. The research identified challenges faced by educators in fostering positive pedagogic interactions to create a conducive learning environment. It aimed to serve as a guide for educators, particularly in the teaching of English, the universal language, by developing activities to enhance their communication skills.

The decision to investigate communication, adaptation, and pedagogy is rooted in their direct relevance to the remote teaching environment adopted by teaching personnel. In this setting, characterized by the absence of face-to-face interaction, educators must adapt to technology-mediated communication for pedagogical interactions. This adaptation presents challenges, as effective communication is fundamental to successful teaching and learning. In the context of an increasingly digital world, communication barriers between teachers and

students are common, potentially impeding the learning process. By gaining insight into and enhancing communication strategies, educators can cultivate more engaging and inclusive learning environments.

This study can provide empirical evidence and insights into communication dynamics and adaptation strategies in remote teaching contexts. By identifying communication barriers, assessing the effectiveness of current strategies, and exploring the impact of technology-mediated communication on pedagogical interactions, it will offer practical solutions to enhance educators' communication skills and create more engaging learning environments.

### **Objectives**

The primary goal of this study is to examine the metacommunication and conversational practices in pedagogic interactions of teaching personnel at a constituent campus of a Southern Tagalog state university in the Philippines during the academic year 2021-2022. To achieve this goal, the study had the following specific objectives:

1. Determine the extent of manifestation of metacommunication among the incidental sample of 106 teaching personnel at a constituent campus of a Southern Tagalog state university in the Philippines focusing on verbal, nonverbal, and textual communication.
2. Describe the conversational practices of this incidental sample of teaching personnel engaged in pedagogic interactions along the different dimensions such as openness, empathy, positiveness, immediacy, interaction management, and expressiveness.
3. Test whether a significant relationship exists between teaching personnel' s metacommunication and their conversational practices within pedagogic interactions.

## **Methodology**

### **Research Design**

A descriptive correlational research design was employed in this study to investigate the relationship between teachers' levels of metacommunication and the conversational practices they employ when interacting with students in pedagogical settings. Creswell (2012) has described this research design as one that focuses on assessing the connections between two or more variables to gauge their mutual influence. This research approach was chosen for the study because it enables the exploration and understanding of the existing relationship between teachers' levels of metacommunication and their conversational practices during pedagogical interactions with students.

The study investigated the metacommunication and conversational practices among teaching personnel actively engaged in instructional activities throughout the academic year 2021-2022 at a Southern Tagalog state university. Quantitative data regarding teaching personnel's self-assessment of their metacommunication comprising of verbal, non-verbal, and textual communication was gathered via a researcher-designed questionnaire administered through Google Forms. Similarly, quantitative data concerning teaching personnel's self-assessment of their conversational practices during pedagogic interactions was obtained using the same questionnaire focusing on dimensions such as openness, empathy, and interaction management. The collected data on teaching personnel's self-assessment of their metacommunication and conversational practices were subjected to analysis using Mean and Standard Deviation to ascertain trends and variability in the quantitative data obtained. Meanwhile, the relationship between metacommunication and conversational practices in pedagogic interaction was examined by employing Pearson's correlation coefficient. This

statistical analysis aimed to discern the existence and strength of any significant relationship between these variables. By employing a quantitative empirical approach, the study sought to offer comprehensive insights into the metacommunication strategies and conversational practices adopted by teaching personnel within the context of pedagogic interactions.

### **Subjects of the Study**

The study focused on an incidental sample of 106 teaching personnel who were actively engaged in instructional activities during the academic year 2021-2022 at a constituent campus of a Southern Tagalog state university. This group of individuals was chosen as the research respondents based on their direct involvement in the promotion of remote teaching, a key criterion for selection. The individuals selected to participate in the study met specific practical criteria. They were chosen because they were easily accessible, available at designated times for data collection, and expressed a willingness to participate in the research. Furthermore, their informed consent to take part in the study was obtained. This approach aligns well with quantitative research studies that aim to gather data from a substantial population, ensuring that the selected respondents not only possess the relevant qualifications but also meet practical criteria that facilitate effective data collection and analysis.

### **Data Gathering**

The study employed a survey as its primary data collection method, utilizing a researcher-designed questionnaire. This questionnaire comprised two distinct parts. The first section was designed to gauge the respondents' levels of metacommunication manifestation, encompassing aspects of verbal communication, non-verbal communication, and textual communication. The second section delved into the respondents' conversational practices during pedagogical interactions, exploring dimensions such as openness, empathy, positiveness, immediacy, interaction management, and expressiveness.

To ensure the questionnaire's reliability and validity, a thorough validation process was executed. The questionnaire underwent validation by experts with more than a decade of experience in the academe: two communication experts, two educational management experts, and a registered psychometrician, who assessed its clarity, balance, appropriateness of item statements, practical applicability, relevance to the research problem, construct measurement, and related considerations. It was also pilot-tested on a group of 15 teaching personnel from another constituent campus who were not included as respondents of the study. The computed Cronbach alpha of 0.91 from the pilot testing of the questionnaire affirmed its reliability.

Having been proven valid, the researchers administered the questionnaire through Google Forms to collect the needed data. To aid in interpreting the computed mean, the following ranges and corresponding verbal interpretations were applied: 3.50-4.00 (Highly Manifested/Highly Practiced), 2.50-3.49 (Moderately Manifested/Moderately Practiced), 1.50-2.49 (Slightly Manifested/Slightly Practiced), and 1.00-1.49 (Least Manifested/Least Practiced).

### **Data Analysis**

Quantitative data collected from teaching personnel underwent thorough analysis employing Mean, Standard Deviation, and Pearson's correlation coefficient ( $r$ ) to investigate the relationship between metacommunication and conversational practices within pedagogical interactions. Mean and Standard Deviation were utilized to assess the central tendency and variability of the data, offering insights into the typical levels and consistency of metacommunication and conversational practices among respondents. Meanwhile, Pearson's

correlation coefficient provided a quantitative measure of the strength and direction of the relationship between these variables, allowing for the identification of significant associations between metacommunication and conversational practices.

## Results

### Teaching Personnel's Metacommunication

This section presents an analysis of the respondents' utilization of metacommunication in their verbal interactions. As observed in Table 1, the data reveals that the respondents consistently demonstrate a high degree of adherence to communication etiquette, as indicated by their impressive mean score of 3.83 and a standard deviation of 0.38. This finding highlights the respondents' commitment to maintaining a professional and courteous demeanor when engaging in conversations or instructing students. The presence of such etiquette in their speech within the educational context is noteworthy, as it serves to foster a conducive learning atmosphere. It encourages students to actively participate in discussions and fosters interactivity, thereby contributing positively to their academic achievement. It has been observed that teachers who effectively employ both verbal and nonverbal communication methods tend to enhance the overall effectiveness of their teaching, consequently resulting in increased academic success for their students. Students often evaluate these teachers favorably, appreciating their encouragement of classroom engagement, the utilization of interactive and student-centered teaching approaches, and the cultivation of an environment where students feel comfortable asking questions and expressing their doubts.

**Table 1** Metacommunication in terms of verbal communication

Indicators	Mean	S.D.	Interpretation
1. Use simple words in communicating and/or teaching	3.71	0.45	Highly Manifested
2. Clarify the meaning of jargon or unfamiliar terms	3.74	0.44	Highly Manifested
3. Monitor my verbal cues and avoid using filler words	3.46	0.62	Moderately Manifested
4. Practice the use of formal language discussion	3.54	0.54	Highly Manifested
5. Engage in informal communication outside the class	3.20	0.71	Moderately Manifested
6. Use technology to aid instructions	3.74	0.46	Highly Manifested
7. Provide feedback to students verbally participating in class	3.68	0.49	Highly Manifested
8. Engage in polite discourse with my students	3.75	0.50	Highly Manifested
9. Practice etiquette in speaking when teaching or conversing	3.83	0.38	Highly Manifested
<b>Overall</b>	<b>3.63</b>	<b>0.51</b>	<b>Highly Manifested</b>

*Legend: 3.50-4.00 (Highly Manifested), 2.50-3.49 (Moderately Manifested), 1.50-2.49 (Slightly Manifested), and 1.00-1.49 (Least Manifested)*

Conversely, it is worth noting that the respondents exhibit only moderate engagement in informal communication with their students. This is evident from the data, particularly statement five, which reflects the lowest level of manifestation among teaching personnel, with

a mean score of 3.20 and a standard deviation of 0.71. This suggests that respondents do not extensively engage in personal conversations with their students. Nevertheless, the study has garnered positive feedback from respondents regarding their preference for genuine communication. This preference extends beyond the scope of the practicum, indicating that a desire for authentic communication is present among the respondents.

The overall mean score for the respondents' manifestation of metacommunication stands at 3.63. This figure indicates that teaching personnel maintain a high level of verbal communication, even within the context of remote teaching. While the methods employed by teachers to facilitate discussions may have evolved in response to the remote setting, the fundamental importance of effective teaching remains evident. In light of this, teachers may make deliberate efforts to guide and capture students' attention through the skillful use of both nonverbal and verbal communication. By doing so, they can fully harness the benefits of an engaging and interactive learning environment, ensuring that students comprehend and actively engage with the lesson material.

Table 2 presents the respondents' self-assessment regarding the extent to which they manifest metacommunication, particularly focusing on non-verbal communication. The data within the table reveals intriguing insights into the teaching personnel's behavior and interaction patterns. Statement 9 emerges as the most prominent, with a mean score of 3.75 and a standard deviation of 0.43. This result indicates that the teaching personnel consistently maintained a formal and presentable demeanor when interacting with their students. Such behavior underscores the educators' commitment to serving as positive role models for their students. This is a noteworthy observation, as students keenly observe both verbal and non-verbal cues from their teachers, using them as templates for peer interactions and classroom conduct. Teachers who consistently exhibit positive behavior towards their students often become well-liked figures within the classroom.

**Table 2** Metacommunication in terms of non-verbal communication

Indicators	Mean	S.D.	Interpretation
1. Display proper body language, gestures, and signals	3.58	0.53	Highly Manifested
2. Express emotions through appropriate gestures	3.51	0.57	Highly Manifested
3. Project appropriate attitudes all the time	3.72	0.45	Highly Manifested
4. Provide signals to students every time they participate in class	3.62	0.52	Highly Manifested
5. Establish eye contact with students speaking in class	3.42	0.70	Moderately Manifested
6. Show agreement or disagreement through bodily movement	3.26	0.65	Moderately Manifested
7. Adjust the voice's tone or pitch and utterances in speaking or responding	3.57	0.50	Highly Manifested
8. Show my interest in the discussion by smiling	3.74	0.50	Highly Manifested
9. Face my students with formality and in a presentable manner	3.75	0.43	Highly Manifested
10. Prepare for appropriate camera angles all throughout the class	3.47	0.66	Moderately Manifested
<b>Overall</b>	<b>3.56</b>	<b>0.56</b>	<b>Highly Manifested</b>

Legend: 3.50-4.00 (Highly Manifested), 2.50-3.49 (Moderately Manifested), 1.50-2.49 (Slightly Manifested), and 1.00-1.49 (Least Manifested)

Conversely, statement six portrays a somewhat different picture, garnering a mean score of 3.26 and a standard deviation of 0.65. This suggests that teaching personnel moderately demonstrated the expression of agreement or disagreement through their body language. However, it is essential to consider that this moderation may be influenced by the technological limitations inherent in the remote teaching environment. Nevertheless, it remains crucial to emphasize the importance of non-verbal communication, particularly in the context of remote learning. Non-verbal cues play a vital role in sustaining student engagement, participation, and motivation during online lessons. They assist teachers in enhancing students' perceptions and maintaining a dynamic virtual classroom atmosphere.

In a broader perspective, the overall mean score for the respondents' manifestation of metacommunication through non-verbal cues stands at 3.56, with a standard deviation of 0.56. This result indicates that even in the remote teaching setting, the impact of teaching personnel's non-verbal communication remains relatively stable during online discussions. The use of cameras allows teachers to convey non-verbal cues to students, fostering motivation and engagement.

Table 3 illustrates the respondents' self-assessment regarding the extent of their metacommunication manifestation, with a specific focus on textual communication. In the context of remote teaching, the data highlights that teaching personnel consistently delivered announcements with a direct and concise approach. Statement nine, which pertains to this aspect, demonstrated a robust manifestation with a mean of 3.77 and a standard deviation of 0.52. These findings emphasize the educators' recognition of the paramount importance of providing students with clear and succinct instructions.

**Table 3** Metacommunication in terms of textual communication

Indicators	Mean	S.D.	Interpretation
1. Deliver my instructions in a clear and well-organized manner	3.76	0.45	Highly Manifested
2. Include appropriate emoticons in my messages	3.43	0.68	Moderately Manifested
3. Use proper spelling in making announcements	3.76	0.45	Highly Manifested
4. Filter words to use in conveying messages	3.65	0.52	Highly Manifested
5. Make immediate replies in the chat box	3.40	0.58	Moderately Manifested
6. Use proper punctuation marks	3.59	0.53	Highly Manifested
7. Refrain from using highfalutin words in messages	3.65	0.52	Highly Manifested
8. Avoid using jargon in sending announcements	3.58	0.55	Highly Manifested
9. Deliver announcements in a straight-forward manner	3.77	0.42	Highly Manifested
10. Avoid using Morse code in sending messages	3.68	0.47	Highly Manifested
<b>Overall</b>	<b>3.61</b>	<b>0.52</b>	<b>Highly Manifested</b>

*Legend: 3.50-4.00 (Highly Manifested), 2.50-3.49 (Moderately Manifested), 1.50-2.49 (Slightly Manifested), and 1.00-1.49 (Least Manifested)*

It is worth noting that clear and concise directions are a fundamental component of effective teaching. Such directions must be easily comprehensible, simple, and straightforward. Failing to deliver instructions in this manner can disrupt the learning environment significantly,

potentially leading to chaos and a loss of valuable instructional time. Therefore, the high manifestation score for this statement is indicative of the teaching personnel's commitment to maintaining a structured and efficient learning environment.

Conversely, Statement five exhibited a lower score, with a mean of 3.40 and a standard deviation of 0.58. This finding suggests that teaching personnel faced challenges in effectively balancing their work and personal lives within the online teaching setting. The mode of communication being primarily textual may have contributed to the struggle of instructors in separating their personal time from their working hours.

When considering the respondents' manifestation level in terms of textual communication, the data still indicates a high manifestation rate, with an overall mean of 3.61 and a standard deviation of 0.52. This result underscores the teaching personnel's continued commitment to maintaining effective textual communication, despite the challenges posed by the remote teaching environment.

### Teaching Personnel's Conversational Practices in Pedagogic Interaction

Table 4 in the study provides a comprehensive examination of conversational practices within pedagogic interactions, offering valuable insights into the performance of teaching personnel across various key indicators. Each indicator is accompanied by its computed mean score, standard deviation, and their respective interpretations, contributing to a deeper understanding of the results.

**Table 4** Conversational practices in pedagogic interaction

Indicators	Mean	S.D.	Interpretation
Openness	3.68	3.50	Highly Practiced
Empathy	3.73	0.46	Highly Practiced
Positiveness	3.69	0.48	Highly Practiced
Immediacy	3.67	0.49	Highly Practiced
Interaction management	3.67	0.49	Highly Practiced
Expressiveness	3.63	0.53	Highly Practiced

*Legend: 3.50-4.00 (Highly Practiced), 2.50-3.49 (Moderately Practiced), 1.50-2.49 (Slightly Practiced), and 1.00-1.49 (Least Practiced)*

The mean score for openness stands at 3.68, with a standard deviation of 0.50, indicating a notable proficiency in practicing openness within pedagogic interactions among the teaching personnel. This aspect is critical as it cultivates an environment where students feel encouraged to express their thoughts and concerns comfortably. The consistently high score suggests that educators excel in fostering open dialogues within the pedagogic context.

Empathy emerges as a prominent characteristic within pedagogic interactions, boasting a mean score of 3.73 and a remarkably low standard deviation of 0.46. This finding holds significant importance as empathy plays a pivotal role in comprehending and effectively addressing both the emotional and academic needs of students. The consistently elevated level of empathy exhibited by the teaching personnel underscores their unwavering commitment to cultivating a learning environment characterized by support and compassion.

Furthermore, the commitment to maintaining a positive tone is evident, with a mean score of 3.69 and a standard deviation of 0.48. This steadfast demonstration of positivity proves crucial in motivating and actively engaging students, creating an optimistic atmosphere conducive to effective learning.

Immediacy is another standout feature, represented by a mean score of 3.67 and a standard deviation of 0.49. This underscores the ability of educators to establish close and responsive connections with students, even within the challenges of remote or online teaching environments.

Interaction management, with a mean score of 3.67 and a standard deviation of 0.49, is another area of strength. Effective interaction management is pivotal for maintaining a structured and organized pedagogic environment, and the consistently high rating in this domain indicates the teaching personnel's adeptness in orchestrating meaningful interactions during instructional sessions.

Expressiveness garners a mean score of 3.63, accompanied by a standard deviation of 0.53, indicating its strong prevalence within pedagogic interactions. The capacity to convey ideas and information clearly and engagingly is fundamental to effective teaching, and this high score signifies that educators effectively communicate their instructional content with both enthusiasm and clarity.

### Relationship between Metacommunication and Conversational Practices in Pedagogic Interaction

To investigate the presence of a significant relationship between the respondents' metacommunication and their conversational practices within pedagogic interactions, the correlation between these variables was assessed employing Pearson's  $r$  formula. The results of this analysis are detailed in Table 5.

Table 5 unequivocally demonstrates the existence of a substantial relationship between the respondents' metacommunication and their conversational practices within pedagogic interactions. This relationship is substantiated by the calculated  $p$ -value, which takes into account Pearson's  $r$ . Furthermore, these findings strongly indicate that the respondents' metacommunication significantly influences their conversational practices during pedagogic interactions. It becomes evident that, as educators engage in pedagogic interactions, they increasingly recognize the inherent value of metacommunication and its role in shaping conversational practices during class discussions.

**Table 5** Relationship between metacommunication and conversational practices in pedagogic interaction

Variables	Computed $r$	Verbal Interpretation	$p$ value	Decision $H_0$	Interpretation
Metacommunication and Conversational Practices in Pedagogic Interaction	0.721	High Correlation	0.000	Reject	Significant

In the context of effective teaching, the transmission of ideas to students hinges largely on the proficiency of both learners and instructors in conveying information effectively. The comprehension of metacommunication is pivotal in this regard, as it suggests the need to distinguish between metacommunication as an integral component of transparent communication styles and metacommunication pertaining to collaborative aspects in instructional supervision.

## Discussions

The findings about metacommunication in verbal communication emphasize the importance of maintaining professionalism and courtesy in educational interactions. Educators' commitment to communication etiquette not only fosters a conducive learning environment but also enhances student engagement and academic achievement. This shows the critical role of metacommunication in shaping pedagogic interactions emphasizing the need for educators to reflect on and refine their verbal communication practices continuously (Stavholm et al., 2021; Ivaldi et al., 2021). By promoting respectful and effective verbal communication, educators can create inclusive learning environments where students feel valued and motivated to participate actively in classroom discussions (Simpson, 2016).

The analysis of metacommunication through non-verbal communication channels illuminates the significance of educators' ability to convey information effectively beyond verbal means. Despite the challenges posed by remote teaching environments, teaching personnel demonstrate proficiency in utilizing non-verbal cues to sustain student engagement and participation. This underscores the importance of incorporating non-verbal communication strategies into pedagogic interactions, as they play a vital role in enhancing instructional effectiveness and fostering dynamic virtual classroom atmospheres (Scott & Twyman, 2018; Fox, 1993). By enhancing non-verbal communication effectively, educators can create immersive learning experiences that captivate students' attention and facilitate meaningful pedagogic interactions.

The findings concerning metacommunication in textual communication highlight the importance of clear and concise communication practices among teaching personnel. Educators' commitment to delivering announcements with clarity and precision is crucial for promoting student comprehension and task understanding. Clear instructions foster a productive learning environment, enabling students to navigate learning tasks effectively. This underscores the significance of structured communication strategies in enhancing pedagogic interactions and facilitating student success. By prioritizing effective textual communication, educators can ensure that students receive information efficiently and are better equipped to engage with learning materials. Educators' commitment to delivering clear and concise announcements resonates with the findings of Corrales et al. (2018) and Ward & Darling (1996), who stress the importance of structured communication channels in educational settings. Clear instructions foster a productive learning environment, enabling students to navigate learning tasks effectively, as observed by Bahri & Williams (2017) and Baltzersen (2013). These findings underscore the significance of effective textual communication in promoting student comprehension and engagement.

The examination of conversational practices within pedagogic interactions reveals key indicators such as openness, empathy, positiveness, immediacy, interaction management, and expressiveness. These aspects are essential for creating a conducive learning environment where students feel supported, engaged, and motivated to participate actively. Educators who excel in these conversational practices foster a positive learning atmosphere and facilitate meaningful interactions that enhance student learning outcomes (Calvert et al., 2020; Simpson, 2016). This stresses the importance of pedagogic interactions characterized by empathy, positivity, and effective communication strategies in promoting student engagement and academic success.

The strong relationship between metacommunication and conversational practices underscores the integral role of metacommunication in shaping effective educational interactions. Educators who engage in metacommunication are better equipped to guide student learning and foster a supportive learning environment, aligning with the findings of Stavholm et al. (2021) and Ivaldi et al. (2021). Recognizing and leveraging this relationship can contribute to the professional development of educators and enhance instructional practices in educational settings. By integrating metacommunication strategies into teaching practices, educators can improve pedagogic interactions and ultimately enhance student learning outcomes.

### **Conclusion and suggestions**

Maintaining professionalism and courtesy in educational interactions through effective metacommunication, both verbal and non-verbal, is imperative. Educators may continuously reflect on and refine their communication practices to foster inclusive learning environments, enhance student engagement, and promote academic achievement.

Furthermore, integrating non-verbal communication strategies into pedagogic interactions, particularly in remote teaching environments, is essential for sustaining student engagement and creating dynamic virtual classroom atmospheres. Educators may capitalize on non-verbal cues to enhance instructional effectiveness and captivate students' attention, thus facilitating meaningful learning experiences.

Additionally, prioritizing clear and concise textual communication practices among teaching personnel is vital for promoting student comprehension and task understanding. Structured communication channels and clear instructions foster productive learning environments, enabling students to explore learning tasks effectively and engage with materials more meaningfully.

Moreover, fostering conversational practices characterized by openness, empathy, positiveness, immediacy, interaction management, and expressiveness is crucial for creating conducive learning environments. Educators who excel in these practices facilitate meaningful interactions that enhance student learning outcomes and contribute to a positive learning atmosphere.

Lastly, recognizing the strong relationship between metacommunication and conversational practices underscores the integral role of metacommunication in shaping effective educational interactions. Educators can enhance their instructional practices and professional development by integrating metacommunication strategies into their teaching, ultimately leading to improved pedagogic interactions and enhanced student learning outcomes.

### **New knowledge and the effects on society and communities**

One of the central findings of this study pertains to the substantial and statistically significant relationship between metacommunication and conversational practices within pedagogic interactions. This empirical evidence underscores the critical role of metacommunication in enhancing the quality of communication within educational settings. Such insights have far-reaching consequences, not only for educators but also for students, as they signify the potential for improved learning experiences. Enhanced communication skills

can foster a more inclusive and engaging classroom environment, positively impacting students' academic achievements.

Furthermore, the study's recognition of the multifaceted nature of metacommunication highlights its diverse applications within educational contexts. This insight prompts educators to consider metacommunication as a multi-dimensional tool for effective communication, encompassing transparent communication styles and collaborative aspects in instructional supervision. The adoption of such a holistic perspective on metacommunication can enhance not only the quality of classroom discourse but also the overall educational experience.

Considering the implications of this research for society and communities, it becomes evident that well-rounded communication skills are not only beneficial within the classroom but also extend to broader social contexts. Educators equipped with effective metacommunication skills can contribute to the development of individuals who are better prepared for diverse communication challenges in their personal and professional lives. Moreover, the emphasis on positivity and empathy in conversational practices highlights the potential for cultivating a more compassionate and understanding society, where respectful dialogue and active listening become the norm.

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## Applying DMAIC Methodology to Reduce Egg Breakage Rates in Small-Scale Production Enterprise in Mandalay Region

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### Abstract

This study employed the DMAIC methodology (Define, Measure, Analyze, Improve, Control) to investigate and minimize Unusable egg breakage (Completely broken eggs) at Golden Yolk farm. Data was collected using a triangulated approach that included direct observations of egg-handling processes, interviews with experienced farm personnel, and a review of historical breakage records in order to ensure reliability. Standardized checklists were also used, and initial analysis revealed a total defect rate of 0.74%, with Unusable breakage being the highest contributor at 0.47% among all types of defects. Qualitative tools like Pareto charts, FMEA, and Fishbone diagrams identified the main culprits of inadequate handling techniques and the absence of appropriate equipment. Subsequent interventions focused on implementing farm personnel training, standardized handling procedures, and introducing relevant equipment, significantly reducing Unusable egg breakage from 0.47% to 0.39%. This approach demonstrates the effectiveness of the DMAIC methodology for addressing Unusable egg breakage in the egg farm. These findings offer valuable insights for improving farm operations, ensuring consistent, high-quality egg production, and minimizing associated losses.

**Keywords:** DMAIC, FMEA, SIPOC, Pareto analysis, Fishbone diagram, Unusable egg breakage

## Introduction

The egg is the most popular food worldwide because of its nutritious value. It provides crucial micronutrients in the correct ratio of essential amino acids, vitamins, and minerals required to maintain good health. The egg industry is currently facing a significant issue of egg breakage. This problem not only harms the egg but is also associated with environmental threats at large. This issue not only represents wasted food but also raises environmental concerns. By minimizing breakage, families gain a cost-effective and sustainable protein source, while farmers potentially save money over time, which we hope would translate into lower grocery bills for everyone down the line. Beyond the prevention of broken eggs lies the more profound concern of good food for all, our communities, and neighborhood-scale sustainability.

Dr. Michael, a veterinarian committed to animal welfare, established The Golden Yolk Egg Farm as a small farm in Mandalay, Myanmar in 2008. The farm comprises 3 Acres (7 Rai) and 4 houses with the same operating system. There are about 100,000 hens on this farm, with each house containing around 25,000 hens. The farm aimed to create top eggs while caring for bird welfare first. Battery cage systems frequently use automated technology to enhance the efficiency and well-being of the birds. Automated feeders and waterers provide consistent access to resources, while climate control systems, such as large fans in each house, automatically regulate temperature, humidity, and ventilation to optimize egg production and bird health. However, the farm does not invest in technology for collecting eggs. Thus, it has 4 farm managers to oversee 40 workers daily. Yet despite their increased success at becoming an excellent farm, there's a significant problem with eggs breaking on the farm that is causing them distress and losing customers due to dissatisfaction. The core issue at the egg farm is that of egg breakages, which significantly impact the entire supply chain. This resulting problem leads to lost money and unhappy customers. From January to March 2023, the total egg production across the four houses was 6,968,552 eggs. During that time, according to the data, there were 51,684 eggs with defects, including unusable broken, large cracks, calcium deposits, wrinkles, pinholes, and weak shells. These defects represented about 0.74 percent of total eggs produced, highlighting the immediate need for addressing and reducing egg breakage in the operations.

### Research Objectives

1. To identify the key factors contributing to broken eggs in the egg production industry and develop improvement strategies using the DMAIC method to address the root causes of broken eggs.
2. To evaluate the effectiveness of methods and strategies in reducing the highest contribution of defects (Unusable egg breakage) by less than 0.47%.
3. To develop a monitoring system to sustain improvements and prevent future occurrences of broken eggs.

### Literature Review

Condé et al. (2023) stated that the DMAIC technique uses the study to investigate the causes of problems and suggest mitigation strategies. The researchers guided the project execution using a structured methodology known as Define-Measure-Analyze-Improve-Control (DMAIC).

According to Hakimi et al. (2018), the Define phase is the most crucial step in creating a business case for the issue. It forms the foundation for securing decision-makers support by highlighting the potential cost reduction associated with mitigating issues impacting profit. Tools like Pareto charts mentioned by Beheshti et al. (2018) help pinpoint the highest contributing factors to the problem, allowing focused problem-solving efforts. According to Samuel et al. (2019), Pareto analysis is a valuable technique for prioritizing improvement efforts when faced with numerous competing potential causes or courses of action. Additionally, Assis de Souza et al. (2022) used SIPOC (Supplier-Input-Process-Output-Customer) charts to map existing activities and key process elements visually.

Next comes the Measure Phase, Kumar et al. (2021) emphasized that it involves collecting and measuring the data using a reliable measurement system that assesses the process's status. Process maps, as advocated by Antonacci et al. (2021), can be instrumental in this phase. They enable the identification of areas for improvement, facilitate the streamlining of existing systems, and contribute to the creation of targeted measurements.

The Analyze phase delves deeper into the causes of egg breakage. According to Mittal et al. (2023), the Analyze Phase utilizes Pareto charts and fishbone diagrams to identify major defects and their root causes for quality improvement initiatives. According to Coccia (2015), fishbone diagrams (Ishikawa diagrams or cause-and-effect diagrams) display various causes of a specific event or phenomenon. For a more comprehensive analysis, Ionescu et al. (2022) described that FMEA (Failure Modes and Effects Analysis) systematically examines potential failures and their effects on a system, using a Risk Priority Number (RPN) to prioritize corrective actions.

Building on the Analysis Phase diagnosis, Milki (2022) emphasizes the Improve phase of DMAIC, which focuses on developing corrective actions to address the root causes identified earlier. Ali (2021) stated that the Control Phase safeguards sustained improvements by monitoring implemented solutions, ensuring adherence to revised processes, and potentially incorporating customer feedback through surveys to verify continued effectiveness.

## Methodology

The researchers used the DMAIC method to study egg breakage in the Golden Yolk Egg Farm. With the use of the DMAIC method, researchers confidently solved the issue of egg breakage and successfully identified and addressed the underlying causes. The result was a remarkable reduction in broken eggs throughout the production process.

### Collection Methods

1. Researchers directly observed the egg production process in all four houses, focusing on areas with suspected high breakage rates. Since the four houses utilize the same operating system, insights gained from one house could be readily applied to the others. Semi-structured interviews were conducted with farm personnel, including managers and workers, to gather their experiences with egg breakage during various production stages.
2. A broken egg checklist was developed to ensure consistent data collection across different areas and all four houses. This checklist would likely include factors such as rough handling practices, collisions with equipment, weak eggs entering the production line, improper tray stacking, and excessive vibration during transportation. By capturing data on 100% of observed defects, the researchers aimed to obtain a complete picture of breakage issues.

3. Brainstorming sessions were held to identify potential causes of egg breakage. These sessions involved farm owner, farm personnel and researchers. Their combined knowledge and experience from different areas of the production process were crucial in pinpointing potential causes.
4. Data collection included reviewing existing farm records. Specifically, researchers analyzed data sheets maintained by quality control inspectors at the end of the production line. This data provided valuable insights into the types and frequency of egg defects encountered during the final inspection. The DMAIC model was then implemented to structure the analysis and improvement efforts.

#### DMAIC:

The purpose was to establish the primary factors behind egg breakage and implement effective solutions to resolve this issue, as shown in Figure 1.

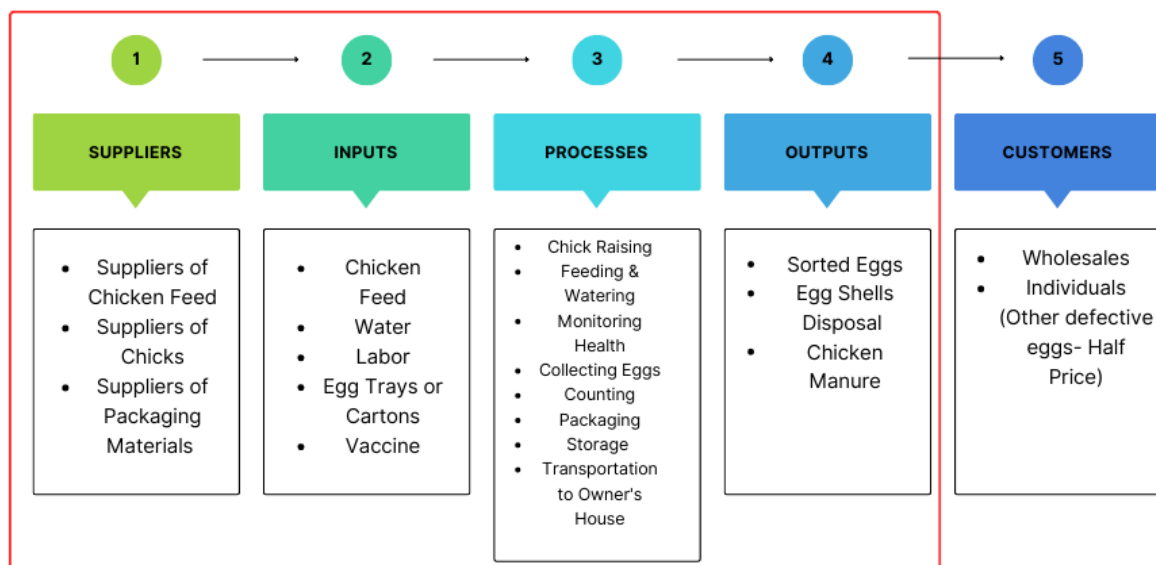


**Figure 1** The stages of DMAIC (Source: Researcher, 2023)

#### Define Phase:

Researchers at the egg farm started by meeting with workers to discuss egg breakage issues. Subsequently, a comprehensive review of the entire egg production process was conducted. Following the Define phase of the Six Sigma DMAIC model, the project focused on identifying the Critical To Quality (CTQ) characteristic—in this case, minimizing Unusable broken eggs—as the farm posed a significant financial burden and impacted overall production efficiency.

As shown in Figure 2, the SIPOC analysis is a useful tool that can provide a foundation for deeper investigation.



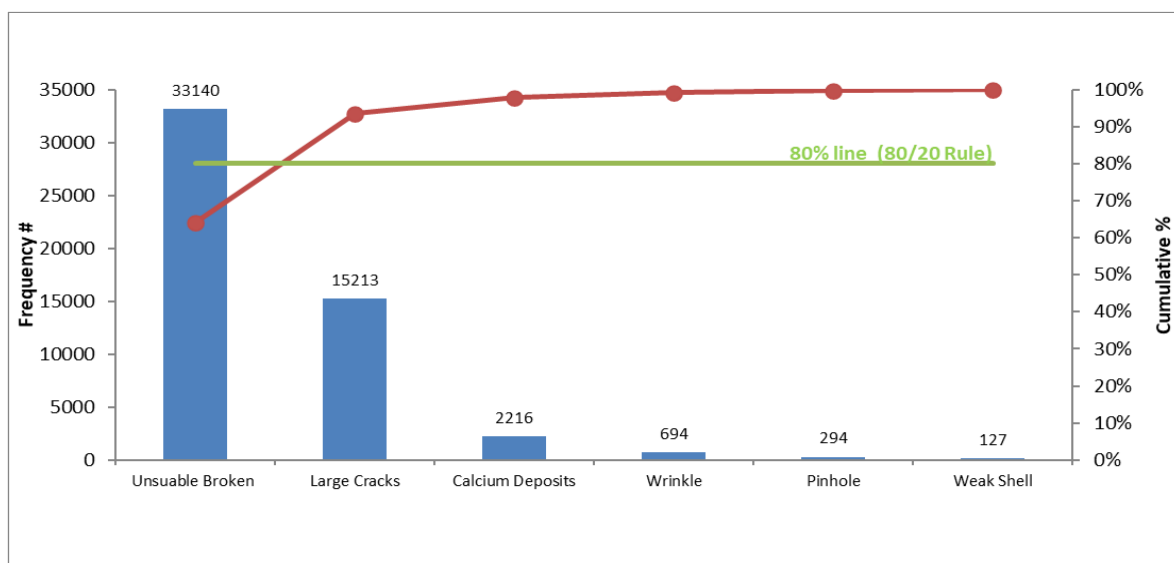
**Figure 2** SIPOC of the Golden Yolk Egg Farm (Source: Researcher, 2023)

Examining each process step, from the quality of chicken feed supplied by vendors to loading the eggs onto trucks for transport, potential breakage points can be identified (represented by the red box in Figure 2), signifying that the farm is responsible for any breakage from suppliers to outputs. By analyzing data on broken eggs collected at different stages of production, the farm can pinpoint areas most likely to break, allowing them to implement targeted improvements and ultimately minimize Unusable broken eggs.

The results of the farm data are presented in Table 1, highlighting the most frequently encountered types of defective eggs. The Pareto chart (Figure 3) underscores the significant impact of the Unusable Broken Eggs category, making it a central research focus. Unusable Broken Eggs are completely broken eggs that are unfit for consumption and sale. According to Table 2, The Unusable broken egg category, accounting for 0.47% (33,140 eggs) of the first quarter's 2023 production (6,968,552 eggs), is the primary focus of improvement efforts. While other defects such as Large Cracks, Calcium Deposits, Wrinkle, Pinhole and Weak shell allow for discounted sales, Unusable broken eggs represent a complete loss and require immediate attention. Importantly, focusing on solving the issue of Unusable Broken Eggs may also lead to a reduction in other types of defective eggs. Addressing the root causes of Unusable breakage has a positive ripple effect, ultimately improving the overall quality of the eggs produced.

**Table 1** Comparing Frequencies of Defective Eggs (Q1, 2023)

Categories	Frequencies	Percentage (%)	Cum. Relative Frequencies (%)
Unusable Broken	33,140	64.12	64.12
Large Cracks	15,213	29.43	93.56
Calcium Deposits	2,216	4.29	97.84
Wrinkle	694	1.34	99.19
Pinhole	294	0.57	99.75
Weak shell	127	0.24	100
<b>Total</b>	<b>51,684</b>	<b>100</b>	



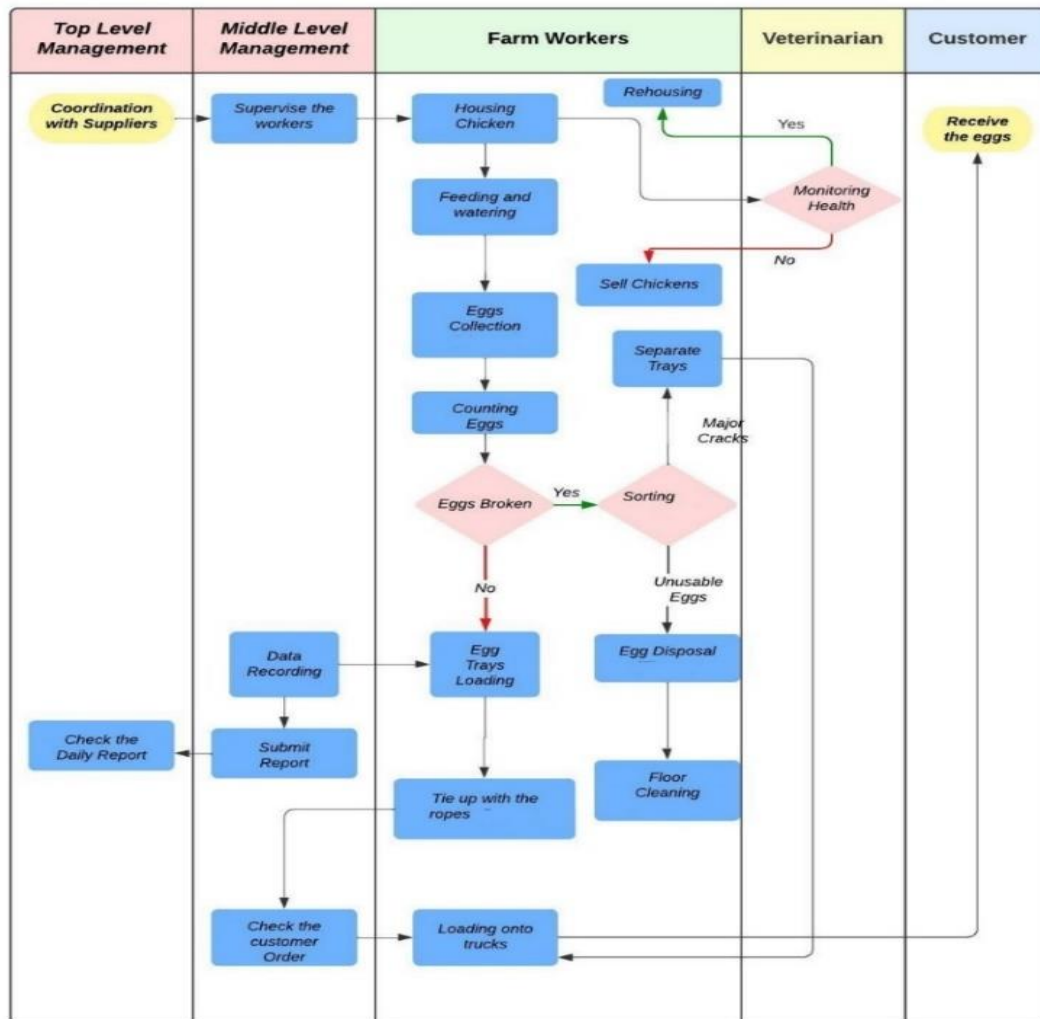
**Figure 3** Pareto Chart of Total Egg Defects (Source: Researcher, 2023)

**Table 2** Unusable Broken Eggs Frequency at Golden Yolk Farm (Q1, 2023)

Unusable Eggs		House A	House B	House C	House D	Total Broken	Total Production
Before	Jan	997	2,364	4,231	2,366	9,958	1,946,123
	Feb	1,953	921	5,177	2,400	11,724	2,445,293
	Mar	2,508	2,077	4,959	1,914	11,458	2,577,136
<b>Total</b>						<b>33,140 (0.47%)</b>	<b>6,968,552</b>

**Measure Phase:**

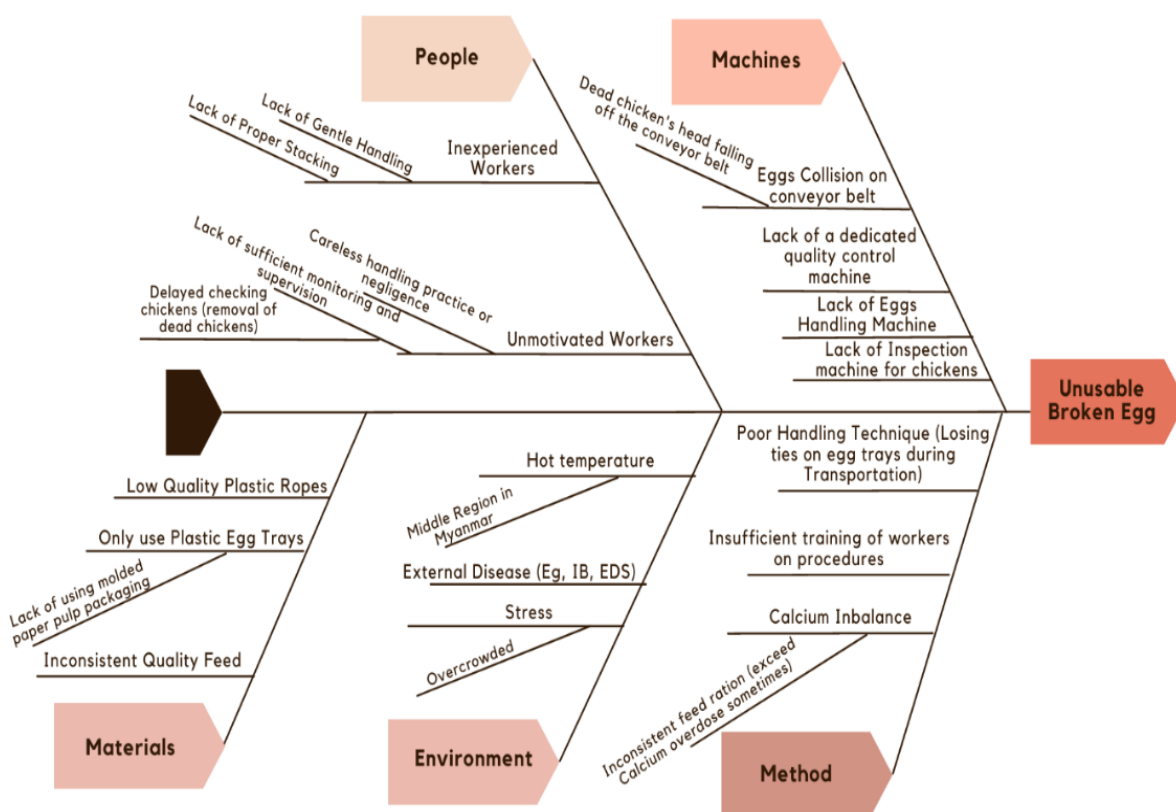
The researchers conducted interviews with the farm owner and collected information from various sources within four houses operating under the same farm. The farm uses its records, which include production, sales, inventory, chicken age, temperature, and egg counts tracked by monitoring systems in farm operations. The workers collecting eggs from the conveyor belt observed daily production in this study. The farm managers accurately recorded the daily egg production count using a standardized checklist to ensure consistent data collection and documentation. The researchers further enhance transparency through a detailed process map (Figure 4). This visual representation showcases the interconnectivity of the departments, highlighting the roles and responsibilities of each team member, from top-level management procuring resources to farm workers implementing quality control measures.



**Figure 4** Detailed Process Map of the Golden Yolk Egg Farm (Source: Researcher, 2023)

### Analyze Phase:

The primary objective of the Analyze phase of the egg farm project was to establish the underlying reason for egg breakage. Different tools and techniques can be used to analyze this issue. A Fishbone diagram is one of the tools commonly used in this study. Figure 5 of the Fishbone Diagram reveals several crucial factors contributing to the farm's egg breakage issue. First, a brainstorming session was conducted with farm owners, managers, and workers. Their combined expertise across different aspects of the production process provided valuable insights into potential causes of breakage. Second, observations were made throughout the production line, focusing on areas with suspected high breakage rates and equipment operation. Finally, data from production records was reviewed to identify trends and patterns in breakage incidents.



**Figure 5** Fishbone Diagram of Golden Yolk Egg Farm (Source: Researcher, 2023)

As depicted in Figure 6, Unusable egg breakage involved machine-related issues, inadequate quality control equipment, environmental conditions, material choices, staff handling methods, and human factors. Information for the analysis was gathered from various sources, including production records and interviews with farm owners, managers, and workers.



**Figure 6** Factors Contributing to Egg Breakage: Machinery and Worker Actions  
(Source: Researcher, 2023)

The connection between FMEA and Fishbone analysis lies in their complementary roles. Fishbone analysis helps us find the root causes, allowing us to address egg breakage and prevent it from happening in the first place. According to Table 3, FMEA helps us identify what could go wrong and prioritize issues based on their potential impact. We calculate a Risk Priority Number (RPN) for each potential failure mode, considering the severity, occurrence, and detection scores. By focusing on failure modes with the highest RPN scores, we can prioritize tackling the issues that pose the greatest risk to egg quality and farm efficiency.

To get the score, each expert who has worked with more than 10 years of experience was provided with a standardized scoring sheet and FMEA training materials. They independently rated the severity, occurrence, and failure mode detection on a scale of 1 (low) to 10 (high). For FMEA, during the discussion, each expert explained their reasoning behind the scores they assigned for each factor (severity, occurrence, and detection). This rationale-sharing helps the group understand the perspectives and considerations that went into each rating. The ultimate goal of the discussion is to reach a consensus on the final scores for each factor. This means they strive to agree on a single score for each factor (severity, occurrence, and detection) after considering their diverse perspectives and rationales.

**Table 3** FMEA (Failure Modes and Effects Analysis)

Item/Function	Potential Failure Mode	Potential Effects of Failure	S E V	Potential Cause	O C C	Current Process Control			Responsibility and Duration (From 1 <sup>st</sup> of May)
						Prevention/ Detection	D E T	R P N	
Inexperienced Workers	Poor handling, Lack of Knowledge	Increase egg breakage, Reduced productivity	9	Insufficient training on procedures	9	Supervised	4	32 4	Farm Managers/ Farm Workers (Within two months)
Unmotivated Workers	Careless handling practices, Low responsibility	Higher chance of egg breakage by mishandling	9	Unfavorable working conditions, lack of recognition	8	Supervised	5	36 0	Farm Managers/ Farm Workers (Within a week)
Low-Quality Plastic Ropes	Breaking, Losing Tie, Weak Support	Potential Damage to eggs	7	Not using better packaging	7	Regular Quality Check	4	19 6	Farm Manager (Within two weeks)
Plastic Egg Trays	Fragile, Stacking Issues	Increased risk of egg breakage	6	Poor quality control during procurement	6	Regular Quality Check	4	14 4	Farm Manager (Within two weeks)
Inconsistent Quality Feed	Varying nutrients level	Weakened eggshells, Lower egg quality	7	Unreliable Suppliers	5	Strict Supplier Quality Control	3	10 5	Owner (Within three months)
Hot Temperature	High heat exposure	Soften shells, Lower egg quality	6	External temperature, Electric Shortage	7	Solar system	2	84	Owner/Farm Manager (Within three months)
External Disease (e.g., IB or EDS)	Spreading Disease in the flock	Increased hen mortality and reduced eggshell quality	8	Improper disease preventive measures	5	Strict Biosecurity Protocols	3	12 0	Veterinarian/ Farm Workers (Within three months)
Stress	High-stress level hens	Reduced hen health and egg quality	6	Overcrowding and uncomfortable environment	4	Optimize Housing Conditions	3	72	Farm Workers (Within a week)
Egg Collision on Conveyor Belt	Eggs Colliding with each other	Increased risk of egg breakage	7	Hen's head fell off the conveyor belt	6	Regular Inspection	4	16 8	Inspector (Within a week)
Calcium Imbalance	Imbalanced levels in feed	Weakened eggshells and Increased breakage	7	Inconsistent Feed Formulation	4	Testing of Feed	2	56	Veterinarian (Within two months)

<b>Current Process Control</b>									
Poor Handling Techniques	Improper handling methods of eggs	Increased Egg breakage rate	8	Lack of proper training and procedures	7	Supervised	4	22 4	Farm Manager/ Farm Workers (Within a week)
Lack of Inspection Machine for Hens	Absence of specialized machines for egg inspection	Unaware of dead or diseased hens	5	Lack of investment in inspection Machine	4	Considering investing in an inspection machine	6	12 0	Owner (Within five years)
Item/Function	Potential Failure Mode	Potential Effects of Failure	S E V	Potential Cause	O C C	Prevention/ Detection	D E T	R P N	Responsibility and Duration (From 1 <sup>st</sup> of May)
Lack of Dedicated Quality Control Machine	Inadequate Quality Control Machine	Some unknown defect types (or) Undetected defects	5	Lack of investment in Quality Control Machine	3	Considering implementing a quality control machine	6	90	Owner (Within five years)
Lack of Eggs Handling Machines	Absence of specialized machines for Handling	Increased egg breakage, Inefficient handling, and sorting process	7	Not prioritizing investing in Handling Machine	8	Considering investing in handling machine	6	33 6	Owner (Within five years)

The highest RPN (Risk Priority Number) score was 360, and the lowest RPN score was 56. Inexperienced workers, unmotivated workers, lack of egg-handling machines, and poor handling techniques linked the failure modes with the highest RPN scores. Ensuring proper training for workers is crucial in preventing breakages. This emphasizes the need for additional training for those who lack the necessary skills. It's also essential to provide favorable working conditions and recognition to avoid demotivation among employees. This can have negative consequences that could affect the quality of work. Investing in egg-handling machines should be a priority to ensure efficient and effective egg handling. Proper handling techniques are essential to prevent issues arising from failure to follow correct protocols.

**Improve Phase:**

After using the Fishbone Diagram and FMEA, the researchers identified the factors that should be prioritized and searched for optimal solutions to resolve the egg-breaking problem at the farm. The primary focus of this study was to identify more efficient strategies to assist production teams in preventing egg breakage. The researchers explored innovative methods to decrease egg breakage, minimize losses, and enhance customer satisfaction. Additionally, the researchers examined ways to enhance the product and improve operational procedures, leading to improved overall performance of the egg farm.

Firstly, the owner and the managers organized weekly team meetings to promote collaboration, improve communication, and educate employees. These meetings provided an opportunity to share ideas, enhance skills, and stay updated with industry trends. A one-month on-the-job training program was implemented in May 2023. The training covered essential topics like farm policies, safety procedures, egg handling techniques, equipment operation and maintenance, and biosecurity measures. Through workshops and practical sessions, new workers learned to handle eggs gently, identify damaged eggs, pack them efficiently, and maintain proper storage conditions. This comprehensive training, led by a team of experts, including veterinarians, managers, technical trainers, and experienced workers, resulted in a demonstrably improved ability of the new hires to perform their tasks effectively. Phasouk et al. (2021) also stated that most farmers need more training skills and knowledge of raising chickens.

A standardized work instruction form was developed to promote consistency in task performance. This has resulted in a decrease in mistakes, improved operational excellence, and upheld quality standards. To enhance worker morale and productivity, a new schedule was implemented to ensure equal rest and revitalization opportunities for all employees. An incentive program was put in place that included bonuses and overtime pay that were dependent on performance. This serves as a motivation for employees to work in their respective roles. Worker evaluations were conducted individually to offer tailored feedback. This facilitated conversations about enhancing performance and pinpointing areas of strength and improvement. Suitable equipment, such as egg tray racks and rubber bands to tie the trays (instead of using plastic), was provided to ensure careful handling and transportation of eggs. This measure effectively reduced egg breakage and maintained hygiene standards. In order to maintain high standards and ensure smooth operation, the equipment, hens, and eggs were inspected three times daily. This allows workers to identify any sick hens, leading to improved early detection of issues and preventing dead chickens' heads from falling out and potentially causing egg collisions. (Figure 7)



**Figure 7** Illustration of a Potential Scenario of Egg Breakage  
(Source: Researcher, 2023)

**Control Phase:**

In the Control Phase of the DMAIC methodology for egg farming, the focus is on maintaining and reinforcing improvements made in the earlier stages. The critical elements in this phase are as follows:

**Standard Operating Procedures (SOP):** Consistency and efficiency in farming activities such as egg gathering, handling, sanitization, and preservation can be achieved by implementing transparent and standardized operating procedures (SOPs). These SOPs guide best practices, safety protocols, and quality assurance.

**Weekly Team Meetings:** Regular meetings are held by the farm team to assess progress and address issues and strategies for ongoing enhancements. Key stakeholders, such as owners, farm managers, and relevant staff, collaborate to review performance metrics and pinpoint opportunities for improvement.

**Visual Kanban:** Process control can be enhanced by incorporating visual controls such as Kanban systems. By utilizing visual cues, such as colored tags or labels on egg trays, workers can understand what to do, reinforcing the importance of careful handling. By assigning different colors to different egg categories, workers can efficiently categorize and manage them.

**Results**

By implementing these strategic actions, the farm attempts to maximize its efficiency. It continuously monitored performance to achieve the desired outcomes so that the farm could ensure long-term success by effectively managing and controlling the processes throughout the DMAIC journey.

**FMEA Action Result:** The researchers focused on enhancing the factors with the highest RPN after conducting the FMEA analysis (Table 3). The highest RPN scores were inexperienced workers, unmotivated workers, lack of egg-handling machines, and inadequate handling techniques. Despite the high RPN score associated with the lack of egg-handling machines, immediate action is challenging due to time constraints, budget limitations, and market demands. Nonetheless, it was noted that factors with lower RPN scores, such as low-quality plastic ropes, plastic egg trays, and egg collision on conveyor belts, also showed interconnectivity with these improvements. As a result, by focusing on the top three priority concerns, additional related problems could be resolved effectively. The action plans that were created are presented in Table 4.

**Table 4** FMEA Action Plan

Item/ Function	Previous RPN	Recommended Actions	Action Results				
			Action Taken	S E V	O C C	D E T	R P N
Unmotivated Workers	360	Provide incentives or rewards and implement motivation Strategies	Announce Scheduled Break Times, Implement Employee Reward and Incentives Programs, Conduct employee Surveys	9	4	2	72
Lack of Eggs Handling Machines	336	-	-	-	-	-	-
Inexperienced Workers	324	Enhance Training Program to improve their skills	Provide Clear Work Instructions Form, Conduct on-the-job Training, Conduct Team Meetings for Knowledge Sharing	9	3	3	81
Poor Handling Techniques	224	Improve Training and proper handling methods	Provide Proper Equipment for Handling, Conduct Regular Quality Inspection	8	3	2	48
Low-Quality Plastic Ropes	196	Source Higher Quality Packaging (Rubber Band)	Provide Proper Equipment for Handling- Rubber bands	7	4	3	84
Plastic Egg Trays	144	Replace with more Egg Trays Racks	Provide Proper Equipment for Handling- Eggs Racks	6	3	2	36
Egg Collision on Conveyor Belt	168	Worker Accountability and Follow the schedule with stricter inspection	Conduct Regular Quality Inspection	7	2	2	28

Based on the researchers' recommendations, it is imperative to implement incentives, surveys, and break time for unmotivated workers to achieve a highly engaged workforce. It is crucial to prioritize improved training to reduce breakage incidents and provide better instructions and equipment to increase effectiveness. The absence of egg-handling machines poses a high-risk issue that requires immediate attention. Unfortunately, financial constraints have prevented investment in new equipment, but this must be overcome to ensure a safe and efficient workplace.

As shown in Table 5, the initial defect rate of 0.47% was successfully reduced at the egg farm following the implementation of significant approaches to address and resolve the loss of 33,140 eggs. After the performance was completed, a decrease in the defect rate of 0.39% was observed. The loss of 30,175 eggs accompanied this result. In the second quarter, the loss incurred decreased by 7,355,156 Ks (or) 91,939 baht. (Note: As the optimal time for the chickens to lay eggs arrived, there was an increase in egg production.) The goal set for the chicken farm was to achieve at most 0.40% broken eggs. Therefore, the farm is moving towards this goal because of the effective use of the newly developed techniques, which a significantly reduced defect rate has aided. To ensure the improvement's continuous lifetime, the farm must

maintain constant awareness by tracking performance, identifying potential issues, and taking the necessary actions.

**Table 5** Before and After Implementation

Unusable Eggs		House A	House B	House C	House D	Total Broken	Total Production	Total Loss
<b>Before</b>	Jan	997	2,364	4,231	2,366	9,958	1,946,123	8,077,500
	Feb	1,953	921	5,177	2,400	11,724	2,445,293	Ks (or)
	Mar	2,508	2,077	4,959	1,914	11,458	2,577,136	100,973 Baht
<b>Total</b>						<b>33,140</b> <b>(0.47%)</b>	<b>6,968,552</b>	
<b>After</b>	April	2,506	2,160	4,611	1,983	11,260	2,577,158	7,357,500
	May	2,490	1,780	4,108	1,780	10,158	2,580,010	Ks (or)
	June	2,112	1,680	3,452	1,513	8,757	2,580,106	91,939 Baht
<b>Total</b>						<b>30,175</b> <b>(0.39%)</b>	<b>7,737,274</b>	

**The total goal is no more than 0.40% per production.**

According to Table 6, the loss amount for Unusable broken eggs is considered completely broken and unsuitable for consumption or selling. This calculation was based on the valuation of 1 kg of eggs at the full market price of 3,750 Kyats.

**Table 6** The detailed calculation of Unusable Eggs (Completely Broken)

	Total Loss	Kilogram (each egg has 65 grams approximately)	Selling price for 1 KG	The whole loss amount in Kyats
<b>Before</b>	33,140	2154 Kg	3750 Kyats	8,077,500 Ks (100,973 Baht)
<b>After</b>	30,175	1962 Kg	3750 Kyats	7,357,500 Ks (91,939 Baht)
<b>Loss Reduction Amount</b>				<b>720,000 Ks</b> <b>(9032Baht)</b>

## Discussions

Our study identified several factors contributing to egg breakage on farms, such as inexperienced or unmotivated workers, poor handling practices, and inadequate equipment. These findings align with previous work by Orr et al. (1977), who also identified similar vulnerabilities in egg-handling practices. However, it's important to acknowledge that a broader perspective is necessary to understand the issue of egg breakage fully.

According to research conducted by Mertens et al. (2006), the housing system in which hens are kept can impact the strength of their eggs. The study found that eggs from hens housed in aviary systems were stronger than those from battery-caged hens. This suggests that exploring alternative housing systems that promote animal welfare and egg quality could be beneficial in reducing breakage. The study also highlights the importance of proper handling and processing practices throughout the entire production chain, especially during grading and packing, which significantly affect breakage rates. Therefore, it's crucial to implement appropriate handling procedures and use suitable equipment at the farm level and across all stages of the production chain. Implement proper handling procedures and utilize appropriate equipment at the farm level and across all stages of the production chain.

In addition to the factors we have identified in our study, there may be other possible reasons for egg breakage. These could include factors such as the hens' age, nutrition, and genetics. To minimize egg breakage in various production systems, further research is necessary to fully understand the complex interplay of these various factors and develop comprehensive solutions.

## Conclusion and suggestions

The application of DMAIC led to measurable improvements in the egg production process, including reduced issues, better product quality, increased customer satisfaction, and greater efficiency. These accomplishments were achieved through systematic and strategic approaches, including but not limited to streamlining egg handling procedures, extensive worker training, and regular equipment inspections under constant supervision of management. Adopting the DMAIC approach reduced the defective egg rate from 0.47% to 0.39%, which shows notable improvement in sorting out broken eggs and associated losses. On the other hand, real-time data collection was complex, with egg production so fast that limited historical access to data, budget constraints, and time concerns around specific potential improvements were issues the study faced.

Due to financial constraints, farms may need more funds. Therefore, it is not possible to buy advanced egg-handling machines. Furthermore, investigating, choosing, and introducing suitable equipment may not be readily accessible because of ongoing farming activities and obligations. As a result, farms may need to prioritize other improvement strategies. These strategies must be more feasible within the current budget and time constraints. For example, a farm could prioritize existing machinery that might benefit from training programs to boost operator skill levels.

Investing in the proper technical setup and process optimization, including all environmental aspects, is critical to the long-term success, efficiency, and sustainability of Golden Yolk Egg Farm. Even though the farm has made significant progress, there is still room for improvement. One key point to tackle is capital expenditure on up-to-date egg-handling

machines. Although limited by tight budgets and consumer demand, the recognition of their longer-term payoffs is essential. The initial cash outlay for these machines can get excellent results quickly. In addition, automated machinery minimizes material waste and optimizes the process. And then, the farm needs to incorporate sustainability with waste management and recycling. Managing waste correctly can also reduce the environmental impact and improve the cleanliness of inhabited areas—proper disposal and recycling of egg cartons, packaging materials, and farm waste.

Lastly, the ethical aspect of Golden Yolk Egg Farm suggests the development of stress-free chicken farming practices from battery-caged chickens. Notorious for their narrow and restricted quarters, battery cages endanger hen welfare. These efforts improve chicken's welfare and are consistent with what consumers want. So, this change further emphasizes the commitment to sustainability and ethical responsibility. This involves focusing on the farm's vision and building customer loyalty with a shared mission to raise animals while ethically protecting land for long-term success.

### **New knowledge and the effects on society and communities**

The investigation into the egg-breaking incident is a transformation and possibly has national significance. Understanding the primary reasons why Unusable egg breakage has improved as a result of this study also critically discovered effective mitigation strategies. It is important to note that these outcomes support sustainability objectives by reducing resource consumption and waste during egg production. By preserving the environment, this sustainable approach benefits the neighborhood and society.

Breakage reduction measures can also be effectively implemented by adding more staff (or) farm workers. This could encourage local economic stimulation in relatively nearby areas. Furthermore, hiring more employees (or even farm staff) can have positive economic stimulus effects locally. It offers jobs in the local area, which means that the nearby region can get higher wages, thus upgrading living standards in the community.

Improving eggs' security and nutrient content benefits public health by ensuring consumers consistently access nutritious foods. Eggs are economical sources of essential nutrients, making them available to the many as foods that can be afforded even on tight budgets.

Sharing these research findings and implementing best practices can positively influence the exchange of knowledge within the industry. As this information spreads, it is pivotal in fostering trust in our food supply and significantly affects consumer choices. This study can raise egg quality, bolster economic sustainability, promote environmentally responsible practices, boost local employment, enhance public health, and boost consumer confidence in a more robust food production system.

In conclusion, the research in this field has the potential for wide-reaching and enduring impacts across various sectors, encompassing economics, public health, and the trust consumers place in the food they consume.

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## Assessment of Online Teaching for Skill Based- Topics in Online Physical Education Classes

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### Abstract

Technology is indeed helpful especially when teaching the students. The online class is just one way people teach and learn. In today's situation, technological advancements in Physical Education (PE) are highly utilized in teaching skill-based topics. This study aimed to assess the use of various digital teaching aids for skill-based topics to improve teaching and learning in online physical education. Furthermore, this study aimed to achieve the following objectives: determine the instructional materials utilized in teaching the skill-based topics; assess the extent of utilization of online teaching strategies of Physical Education teachers for dominantly skill-based topics; determine the challenges encountered by teachers in conducting online Physical Education; compare the assessments between the two groups of respondents; and lastly, propose digital teaching aids for skill-based topics in Physical Education courses. This study used a descriptive method with a researcher-made questionnaire via Google Form as the data-gathering instrument. Statistical tools used were weighted mean, composite mean, and T-test. The respondents of the study were 52 BPEd students and 29 Physical Education instructors from the Batangas State University Main 1. Findings reveal that both teachers and students effectively learn and teach physical education through the use of videos, presentations, and online platforms. The study also shows that the major problem encountered in online learning is the capability to use gadgets. As part of the recommendation, the researchers created digital teaching aids using films, presentations, and modules to improve the learning of skill-based topics for online physical education.

**Keywords:** Digital teaching aids, Instructional materials, Skill-Based topics, Teaching strategies

## Introduction

Physical education is a program that improves intellectual knowledge and different skills of the students. It is one of the most important subjects in current educational framework. It is a unique subject which helps students improve their overall aspects such as the motor skills, emotional and mental skills, and promotes collaboration and sportsmanship among the students. It also requires the students to elicit movement responses as part of their class participation. The subjects of Physical Education are dominated by the psycho-motor domain that involves movement skills and physical fitness. However, due to the threat of the Corona Virus, schools and institutions continue their classes through the use of online platform. It is one of the alternative ways to continue the teaching and learning process. As education is happening online, teachers and students are made to explore different online platforms for both learning and instruction. Online learning is an instructional practice that deeply helps the students. It has a wide range of educational strategies that are technology-enhanced. Online education or the digital classroom do not only change how the contents are delivered, but they provide many opportunities and they also redefine the 2 traditional educational roles for learning through digital learning, students can learn at home or anywhere by simply using their gadgets such as their smartphones, laptops, and computers as their tools for learning. Through digital learning, the work of teachers in terms of disseminating their lessons becomes easier. The digital classroom is already familiar to the students and teachers since it is part of the traditional education method. Education through online or the digital class inspires collaboration because students and teachers can use mobile phones and other devices to access information and connect with the class remotely. Both teachers and students are also obliged to find and sustain resources for internet connection in order to keep pace with the online mode of learning delivery. With the incorporation of online class in the education system, teaching and learning process also changes, most especially in Physical Education program. Face-to-face classes of Physical Education which typically take place on the field, gymnasiums, and covert courts are currently held through virtual class, and online learning spaces. Online classes of Physical Education produce individual-oriented experiences for students and reduce stress when it comes to doing rigorous body movements. Online learning likewise improves students' confidence making them more efficient and prepared for their classes. It can also enhance and improve their strategies and skills (McVicker, 2018). The students of Physical Education can express themselves more and the students become more confident in performing their tasks. The online learning modality introduces new concepts in education such as synchronous and asynchronous class or even a combination of both. In asynchronous class, it is the student-teacher interaction in virtual meeting or through audio and video conferences from different locations at the same time. Learning together gives the learners and teachers the engagement in the lesson and content for their learning experiences. On the other hand, asynchronous class is a self-paced learning for students that let them work and complete their activities on their own time. The teachers provide activities and tasks through the use of different learning materials that help the students to give their full independence to complete their learning activities. In the virtual classroom environment, knowing the students how to learn more effectively and efficiently is important by the help of the alternatives such as the asynchronous and synchronous class. Other relevant concepts involved in online learning are the different instructional materials applicable to a digital classroom. Using different instructional materials gives the teachers the potential in explaining new 4 concepts clearly and helping the students in understanding what is being taught. Students learn differently, though others prefer to learn

by watching videos and listening to audio or lectures. Some people learn by reading, collaborating, and doing hands-on activities. It is important for teachers to use the effective instructional materials for the students experience and motivation to learn and how to apply their understanding. The efficiency and quality of the teaching process are improved and expanded by analyzing the instructional materials and teaching strategies used by teachers for online instruction. Understanding the different instructional materials and teaching strategies of the teachers is very important as it helps in determining the impacts of their instruction to students' learning. Students' performance in physical education is also affected by the teacher's creativity in presenting the lesson online. As part of the course, teachers use online instructional materials in imparting knowledge and skills that students are expected to acquire. Students are on the other hand, held more accountable for their learning. Physical education must be given importance in this situation since it is one of the subjects that poses a lot of adjustments after switching to online class. Online physical education classes need to teach students great sense of independence for learning. Although online education renders a wide 5 range of learning resources made available and accessible anytime, classes are inefficient and ineffective if students are not actively responsible to participate. Teachers need to develop some educational strategies that will develop students' positive behavior or attitude toward online learning. Motivating and engaging the students in physical activities will help them to convey the value of physical education. In the new mode of learning, digital teaching aids are needed to help students learn effectively. With this, the researchers were prompted to conduct a study about the digital teaching aids for skill-based topics in online Physical Education. The researchers would like to determine the digital teaching aids to improve the teaching styles of the Physical Instructors in delivering their lessons. The researchers aimed to improve the teaching and learning situation for Physical Education via online platforms. The researchers assumed that through this research, students and teachers would be enlightened about the current situation of the new mode of learning.

## **Methodology**

This study concentrated on the use of digital teaching aids for skill-based topics in online physical education classes. The research employed a descriptive method, utilizing survey forms, interviews, and questionnaires to gather data and draw specific conclusions. According to McCombes (2020), descriptive research aims to provide an accurate and systematic description of a population, situation, or phenomenon, addressing questions such as what, where, when, and how, but not why. The descriptive method was chosen for this study because it involves gathering and collecting data and information to complete the study. The subjects of the study were Physical Education teachers, 2nd-year, and 3rd-year students of the Bachelor of Physical Education Program at the College of Teacher Education in Batangas State University-Main Campus 1. A total of 81 respondents were surveyed, including 29 Physical Education Instructors, 31 2nd-year BPED students, and 21 3rd-year BPED students, excluding the researchers. For data gathering, the researchers employed a self-constructed survey form as the data collection instrument, taking into consideration the requirements and standards for designing a good data collection instrument. The online survey form was administered through Google Forms and also distributed through messenger and email to the teachers and students. The survey responses from the Physical Education teachers and students were grouped according to the variables of the study. Scoring of responses was based on the frequency of responses, and verbal interpretations of the evaluated scores were provided.

Rank	Range	Verbal Interpretation
4	3.26 - 4.00	Always/Strongly Agree/Very Great Extent
3	2.51 - 3.25	Often/Agree/Great Extent
2	1.76 - 2.50	Sometimes Disagree/Moderate Extent
1	1.00 - 1.75	Never/Strongly Disagree/Least Extent

## Results

Assessments of students and teachers on instructional materials utilized in teaching skill-based topics reveal that these materials augment instruction, leading to the development of an effective teaching-learning condition. Table 1 presents the instructional materials used by teachers in conducting their physical education classes. This table further shows the students' and the teachers' responses regarding the instructional materials used in conducting online physical education classes.

**Table 1** Extent of Utilization of Online Instructional Materials for Skill-Based Topics

Instructional Materials	Students		Teachers	
	Weighted Mean	Verbal Interpretation	Weighted Mean	Verbal Interpretation
1. Printed Materials to be presented in the class are being used.	2.88	O	3.14	O
2. Still Pictures depicting figures of skill-based topics are used.	3.42	A	3.21	O
3. Presentation materials/slides that show step-by-step skill-based topics are used.	3.83	A	3.52	A
4. Films that show proper execution of skill-based topics are used.	3.69	A	3.45	A
5. Modules with topics that are skill-based are being utilized.	3.56	A	3.69	A
6. YouTube videos are being utilized.	3.67	A	3.55	A
7. Student-Created contents are being presented in class.	3.38	A	3.00	O
8. Simulations of a skill-based topic are being presented in the class.	3.35	A	3.31	A
9. E-Books about skill-based topics are being utilized in the class.	2.63	O	2.76	O
10. Real Objects such as balls, net, bats are being shown in the class.	2.75	O	3.00	O
11. Drawing and Illustrations that show the proper execution and steps in skill-based topics are being presented.	3.25	O	3.41	A
12. Tik-Tok videos are being utilized in presentations.	2.06	S	2.31	S
13. BMI - Calculator is being utilized in doing skill-based exercises.	2.71	O	2.83	O
14. Google Sites, Zoom, Google Meet, Schoology, etc. help present topics that are dominantly skill based.	3.79	A	3.69	A
15. Flip grid is being utilized in teaching skill-based topics.	2.63	O	2.83	O
<b>Composite Mean</b>	<b>3.17</b>	<b>O</b>	<b>3.18</b>	<b>O</b>

The table reveals that the 2nd and 3rd-year students of Bachelor of Physical education in Batangas State University agreed that presentation materials/slides are always used in teaching and learning skill-based topics for online physical education classes that got the highest weighted mean of 3.83. On the other hand, the use of Google Sites, Zoom, Google Meet Schoology, and other learning management systems in presenting skill-based topics is always used by the students in learning skill-based topics through online education is the second to the highest weighted mean of 3.79. In addition, Instructional materials such as BMI calculator is often used by the students in learning skill-based topics in conducting online physical education which is third to the lowest that got 2.71 weighted mean. E-Book and Flip-Grid is also often used in skill-based topics in Physical Education that got the weighted mean of 2.63. Moreover, instructional materials such as Tik-Tok application is also found to be used often by the students in learning skill-based topics in online physical education. This instructional material got the lowest weighted mean of 2.06. On the other hand, the table also reveals that the teachers of physical education teachers of Batangas State University always use module and Google Sites, Zoom, Google Meet, Schoology and other learning management systems in teaching skill-based topics for online physical education that got the highest weighted mean of 3.69. Moreover, instructional materials such as YouTube and films are always utilized in teaching skill-based topics in the conduct of online physical education that got the weighted mean of 3.55. In addition, instructional materials such as presentation materials/slides in conducting online physical education are always utilized in teaching skill-based topics is the third to the highest that got the weighted mean of 3.52 in the conduct of online physical education.

Instructional materials such as BMI Calculator and Flip-Grid are often utilized in teaching skill-based topics in the conduct of online physical education which is the third to the lowest that got 2.83 weighted mean. Moreover, instructional material such as E-Book is also often utilized in teaching skill-based topics for online physical education that got the weighted mean of 2.76. Meanwhile, instructional material such as Tik-Tok application is sometimes utilized in teaching skill-based topics in the conduct of online physical education which got the lowest weighted mean of 2.31.

**Table 2** Challenges Encountered Challenges in the conduct of online physical education classes

Indicators	Mean	Verbal Interpretation
1. Capability of using gadgets such as smartphones and laptops in conducting lessons.	3.48	SA
2. Tools and equipment to be used in demonstrating a skill-based topic in the class are insufficient.	3.45	SA
3. Diversity of the students makes it hard to teach skill-based topics	3.28	SA
4. Slow internet connection while presenting a lesson in the class.	3.17	A
5. Some traditional approach in teaching is not applicable in the online class.	3.17	A
6. Problem in giving feedback to the students due to the new mode of teaching.	3.14	A
7. Limited activities and exercises in the class.	3.10	A
8. Limited reliable sources for topics.	3.10	A
9. Lack of capability to demonstrate a specific skill-based topic because of limited space at home.	3.07	A
10. Lack of knowledge and skills in troubleshooting gadgets if there are problems such as lagging and hanging.	3.07	A
11. The class is monotonous.	3.03	A
12. Certain parts of the module are unclear and hard to demonstrate.	3.03	A
13. Lack of knowledge about different teaching strategies.	2.93	A
14. Lack of motivation for students to participate in the class.	2.93	A
15. The class time is not enough to demonstrate and explain any skill-based topics.	2.97	A
16. Trouble in conceptualizing a pedagogy in teaching any skill-based topic.	2.97	A
<b>Composite Mean</b>	<b>2.90</b>	<b>A</b>

Table 2 showed results on the challenges encountered by Physical Education teachers in conducting their physical education classes. As seen from the results, the teachers strongly agreed that the capability of using gadgets such as smartphones and laptops in conducting lessons affects the teaching process that got the highest weighted mean of 3.48. In addition, the teachers strongly agreed that the insufficiency of tools and equipment used by teachers in conducting their lesson in online physical education also affects the teaching process which got 3.45 of weighted mean. Moreover, the teachers strongly agreed that the diversity of students affects their teaching process that gained 2.28 weighted mean.

The teachers strongly agreed that the lack of knowledge and skills in troubleshooting gadgets if there are problems such as lagging and hanging as well as the lack of capability to demonstrate a specific skill-based topic because of limited space at home affect the teaching process which is third to the lowest that got 2.93 weighted mean. The teachers agreed that the lack of motivation of the students to participate in the class and the lack of knowledge about different teaching strategies affects the teaching process which is second to the last gaining

2.93 weighted mean. For the lowest that got 2.97 weighted mean, teachers agreed that the having trouble in conceptualizing pedagogy in teaching physical education affects the teaching process and also the class time which is not enough to teach the lesson in physical education that got 2.97 weighted mean.

**Table 3** Challenges in the conduct of online physical education classes

<b>Challenges Encountered</b>		
<b>Indicators</b>	<b>Mean</b>	<b>Verbal Interpretation</b>
1. Capability of using gadgets such as smartphones and laptops in conducting lessons.	3.48	SA
2. Tools and equipment to be used in demonstrating a skill-based topic in the class are insufficient.	3.45	SA
3. Diversity of the students makes it hard to teach skill-based topics	3.28	SA
4. Slow internet connection while presenting a lesson in the class.	3.17	A
5. Some traditional approach in teaching is not applicable in the online class.	3.17	A
6. Problem in giving feedback to the students due to the new mode of teaching.	3.14	A
7. Limited activities and exercises in the class.	3.10	A
8. Limited reliable sources for topics.	3.10	A
9. Lack of capability to demonstrate a specific skill-based topic because of limited space at home.	3.07	A
10. Lack of knowledge and skills in troubleshooting gadgets if there are problems such as lagging and hanging.	3.07	A
11. The class is monotonous.	3.03	A
12. Certain parts of the module are unclear and hard to demonstrate.	3.03	A
13. Lack of knowledge about different teaching strategies.	2.93	A
14. Lack of motivation for students to participate in the class.	2.93	A
15. The class time is not enough to demonstrate and explain any skill-based topics.	2.97	A
16. Trouble in conceptualizing a pedagogy in teaching any skillbased topic.	2.97	A
<b>Composite Mean</b>	<b>2.90</b>	<b>A</b>

Similar to the traditional teaching-learning condition, conducting online classes is also faced with several challenges. Table 3 shows the results on the challenges encountered by physical education teachers in conducting their physical education classes. The items are based on the real-life experiences and as well as from the studies of other researchers. This portion was only answered by the teachers. As seen from the results, the teachers strongly agreed that the capability of using gadgets such as smartphones and laptops in conducting lessons affects the teaching process. This implies that teachers' implementation of online class is greatly affected by their limited abilities to use certain devices. The use of online technology is quite challenging due to the variety of information and functions. The study is supported by Goad & Jones (2017), in which Online Physical Education (OLPE) has become more challenging in the use of online platforms while meeting the same benchmarks, same curriculum, and the standards for assessment of the traditional courses. At this time, some limited studies and

researchers investigate how Physical Educators are trained formally in delivering their content online. In addition, the teachers strongly agreed that the insufficiency of tools and equipment used by teachers in conducting their lesson in online physical education also affects the teaching process. It suggests that due to the online class situation, the teachers are having problems about the tools and equipment to use in conducting their lesson. The students study alone in their houses and if the tools are insufficient then they cannot learn easily and quickly. This finding is supported by the study of Dyrud (2000), wherein students who often alone may feel isolated lacking social and physical communication. Thus, they are not provided with the avenue to practice and perform the lessons verbally and with contact with others. Moreover, the teachers strongly agreed that the diversity of students affects their teaching process. This implies that due to the differences of the students, the teachers are having a hard time teaching the lesson. The online platform or the online class makes it harder for them to teach because online learning gives gap between teachers and students. This finding is supported by the study of Gillett-Swan (2017), wherein the diversity or the differences of the learners in their own learning and experiences in assessments adds to the difficulty level of implementing virtual classes. Moreover, the teachers strongly agreed that the lack of knowledge and skills in troubleshooting gadgets if there are problems such as lagging and hanging as well as the lack of capability to demonstrate a specific skill based topic because of limited space at home affect the teaching process. It implies that some teachers are having some difficulties utilizing other gadgets. This is supported by the study of McVicker (2018), wherein incorporating technology into physical education classes produces an individually oriented experience for students who feel reluctant about the subject. In addition, the teachers strongly agreed that the limited reliable sources and limited activities in the class affect the teaching process. It implies that if the teachers have limited sources of information, then teachers will fall short in teaching the topics and skills need to be delivered in an online class. If the class has a few activities, then the teachers also have limited sources of possible activities. This finding is supported by the study of Ahmed (2017), in which the availability of materials and other learning resources affects teachers' ability to facilitate an online class. Meanwhile, the teachers agreed that the having trouble in conceptualizing pedagogy in teaching physical education affects the teaching process. This implies that in teaching physical education, teachers must know what strategy to use in order for the students to learn more. If the teacher continues to practice those strategies and pedagogy then they will be able to teach students easily. This finding is supported by the study of Burne et al. (2018), that through self-study of their practice, students learn that digital technologies that can potentially enhance learning only when certain conditions are met. Furthermore, the teachers agreed that the class time which is not enough to teach the lesson in physical education also affects the teaching process. It implies that the given time is not enough for them to teach skill-based topics since it needs time to execute a specific skill. Currently, this may even be aggravated by the weak internet connectivity of the teachers and students alike. Due to the slow internet of some teachers, class time is reduced to a certain extent. This finding is supported by the study of Keengwe & Kidd (2010), wherein slow internet connection, incompatibility of the hardware and software, and lack of orientation for the students are some of the problems occurring in online learning. In addition, the teachers agreed that the lack of motivation of the students to participate in the class and the lack of knowledge about different teaching strategies affects the teaching process. It implies that the teachers are faced with the challenge of strategizing to make the students participate the class. Since it is online class, the teachers are still experimenting different strategies in physical education. This is supported by the study of Hyun & Wi-Young (2020), stating that physical education teachers from lack the expertise to teach skill-based topics online resorting

to trial-and-error methods. This will affect the learners' knowledge and understanding regarding a specific topic. In addition, the teachers agreed that some parts of the module are unclear for them, that is why it is hard to teach a specific lesson to the class as well as the class being monotonous also affects the teaching process. It implies that modules have unclear discussion about the topic. Online instructions can be used to give students the manual and the steps in doing certain activities and performances. In addition, online instructions or simulations increase the understanding and knowledge of students through open-ended and interactive questioning (Lamb & Annetta, 2013). For classes being monotonous, the teacher must adopt new style of teaching in order to give excitement to the class. If the teachers are plainly explaining the topic, then students will soon lose their interest to participate in online class. The teachers must also give insights and feedback to the students to initiate interaction. Furthermore, the teachers also agreed that the problems in giving feedback to the students due to the new mode of teaching also affects their teaching process. It implies that feedback is important in the class, the teacher must give feedback to the class to avoid confusion to the students. This finding is supported by the study of Hyun & Wi-Young (2020), wherein it is conceivable that the lessons in online physical education are more effective if the student gets and accepts feedback in observing the actions of their colleagues. In addition, the teachers agreed that the slow internet connection while presenting a lesson in the class and some traditional approaches in teaching also affect the teaching process. This finding is supported by the study of Keengwe & Kidd (2010), stating that slow internet connection, challenges the conduct of online learning. This is also supported by Fuegen (2012), wherein that the use of gadgets or devices can improve the experiences in online learning by the improvement of the communication. Additionally, traditional methods may be found not suitable for conducting online class especially if such method requires in-person activities.

**Table 4** Comparison of Assessments of the Two Groups of Respondents. Difference in the Utilization of Instructional Materials and of Online Teaching Strategies as Assessed by Teachers and Students

Utilization	tc	pvalue	Decision on H <sub>0</sub>	Verbal Interpretation
Instructional Materials	0.043	0.966	Do not Reject	Not Significant
Online Teaching Strategies	-0.053	0.958	Do not Reject	Not Significant

df = 79     $\alpha = 0.05$

Table 4 showed that there is no significant difference on the assessments of the students and the teachers regarding the utilization of instructional materials. This implies that both students and the teachers have the same perspective regarding the effectiveness of instructional materials used in conducting online physical education. In the same way, there is also no significant difference on the assessment between teachers and students regarding the utilization of online teaching strategies.

## Discussions

Physical education teachers often utilize various instructional materials in teaching skill-based topics for online physical education. This implies that physical education teachers must improve the instructional materials used in teaching skill-based topics in online physical education. With the improvement of the instructional materials, the teachers will be more capacitated to teach skill-based topics and help students learn the necessary competencies for physical education the teachers agreed that there are several challenges affecting the physical education teachers' conduct of online classes. It implies that it is difficult to teach skill-based topics if there are challenges hampering the effective implementation of physical education online classes. These challenges need to be addressed in order to ensure successful conduct of physical education online sessions. Generally, the teachers agreed that there are several challenges affecting the physical education teachers' conduct of online classes. It implies that it is difficult to teach skill-based topics if there are challenges hampering the effective implementation of physical education online classes. These challenges need to be addressed in order to ensure successful conduct of physical education online sessions. This also implies that both students and teachers have their same perspective regarding the teaching strategies used in conducting online physical education. It is safe to conclude that teachers and students provide a positive assessment toward the effectiveness of utilizing various instructional materials and teaching strategies in teaching skills-based topics for physical education online classes.

## Conclusion and suggestions

Based on the findings of the study, the following conclusions are drawn: 1) BPEd students can learn skill-based topics easily by the use of presentation materials/slides as an instructional material while the teachers of physical education usually use Module and Google Sites, Zoom, Google Meet, Schoology, etc. as their instructional materials in conducting skill-based topics. 2) PE students can acquire knowledge about online teaching strategy through the use of demonstration and performance assessment of the skills-based topics whereas 3) PE teachers greatly consider the use of module presentation as an effective online strategy for teaching skill-based topics via online. 4) Teachers' capability of using gadgets, insufficiency of the tools and equipment to be used in demonstrating a skill-based topic in the class, and the diversity of the students are the most commonly encountered challenges in teaching skills-based lesson in online Physical Education classes. 5) There is no significant difference between the teachers and students' assessment regarding the utilization of online teaching strategies. 6) The proposed digital teaching aids are aimed at assisting students and teachers alike under Physical Education Program in learning and teaching skills-based topics and conducting online physical education classes effectively. As for the recommendation, the respondents recommend the following: 1) the proposed digital teaching aids may be utilized by both Physical Education students and teachers in learning and teaching skills-based topics during online Physical Education classes. 2) A webinar on the use of various digital application tools may be conducted to capacitate Physical Education teachers in facilitating virtual PE classes and teaching skills-based lessons more effectively. 3) Other alternative learning modalities may be explored so as to address issues on internet connectivity. 4) Follow-up researches encompassing other variables may be conducted to ensure validity and reliability of the results obtained in this paper.

## **New knowledge and the effects on society and communities**

**Access to Quality Education:** Digital teaching aids can potentially improve access to quality education in physical education for students, including those in underserved areas. This technology allows students to access resources and instruction from skilled teachers and experts worldwide. Community and social interaction while online education can sometimes be seen as isolating, it can also facilitate the creation of virtual communities. Students can connect with peers and instructors through discussion forums, live video sessions, and social media platforms. As the integration of digital teaching aids in online physical education classes continues to evolve, it's important for educators, institutions, and policymakers to be aware of the potential benefits and challenges associated with this shift. Addressing issues of accessibility, inclusivity, and the development of best practices for online physical education instruction will be critical for ensuring that these tools have a positive impact on society and communities also in future of online physical education: **Hybrid Learning Models:** The future may see a blend of in-person and online physical education, where digital teaching aids can serve as supplementary tools for both remote and in-person instruction. **Continuous Innovation:** Technology is constantly evolving. The future of online physical education will likely incorporate innovations like virtual reality, augmented reality, and artificial intelligence to enhance the learning experience. **Health and Wellness Integration:** As part of online physical education, there is an opportunity to educate students about holistic health and wellness, promoting a balanced lifestyle, nutrition, and mental health.

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## Self-Efficacy and Mathematics Learning Experience Using 5Es Model among Pre-service Teachers

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### Abstract

This study employs a descriptive-correlational design, using both qualitative and quantitative approaches, to investigate the self-efficacy levels of pre-service mathematics teachers in relation to their exposure to the 5Es instructional phases. Data was gathered from 106 pre-service mathematics teachers at Batangas State University Campuses during the academic year 2020-2021 using a researcher-made questionnaire and focus group discussions. Mean, Standard deviation, Pearson r, and Thematic Analysis were used to analyze the data. The results reveal a strong correlation between pre-service teachers' self-efficacy in mathematics and their exposure to the 5Es instructional phases. Additionally, it suggests the potential effectiveness of a researcher-made mathematics learning guide in enhancing students' self-efficacy in mathematics. This research underscores the importance of diverse learning strategies for mastering mathematical concepts, encourages instructors to innovate and adapt their instructional practices based on the 5Es model to enhance students' self-efficacy in mathematics, and calls for future research to explore additional factors that influence students' self-efficacy when exposed to 5Es instructional phases.

**Keywords:** Self-efficacy, Mathematics, Learning experience, Higher education

## Introduction

The primary objective of 21st-century education was to prepare students to meet the demands of the contemporary world. Rapid and diverse advancements in science and technology had elevated urban living standards and increased expectations for the modern educational system. This necessitated the replacement of conventional teaching methods and outdated curricula in educational institutions, leading to improvements in instructional models and curricula through research explorations and empirical studies.

Alongside these curriculum shifts, there was a transition in instructional methodologies from teacher-centered learning to learner-centered erudition. In the former, the teacher played an active role in curriculum transmission, whereas the latter involved active learner participation in the learning process.

The introduction of a constructivist approach to education encouraged critical thinking skills and elevated engagement at multiple levels. Learning in this framework actively involved the development and construction of new ideas (Hussain, 2012). Additionally, the constructivist philosophy could be incorporated into the curriculum (O'shea & Leavy, 2013), allowing teachers to create conducive learning environments for students to construct their own understandings.

Teaching and understanding mathematics remained a significant challenge (Beswick, 2012). To address this complexity, teachers devised effective instructional methods and materials. However, the COVID-19 pandemic revealed the need for additional motivation to ensure a strong mathematical foundation and prevent difficulties at higher levels (Rahiem, 2021). Mathematics instructors aimed to motivate students through engagement and supervision, employing various instructional models, including the 5Es learning cycle, based on experiential learning theories (Kolb & Kolb, 2012).

Bybee (2015) outlined the five stages of the 5Es model: Engagement, Exploration, Explanation, Elaboration, and Evaluation. Notably, self-efficacy and mathematics anxiety significantly impacted students' college mathematics grades (Czoher et al., 2020). Thus, educators sought to enhance students' mathematical self-efficacy and reduce mathematics anxiety, factors critical to their persistence and success in advanced disciplines (Griggs et al., 2013). Student motivation, as influenced by self-efficacy and teacher support, played a key role (Skaalvik et al., 2015).

As college mathematics instructors responded to the need to promote mathematics literacy, the value of students' mathematics self-efficacy gained increased attention (Mesa, 2012). Higher self-efficacy was associated with increased motivation and perseverance in tackling challenging tasks. The four primary sources of self-efficacy—mastery experience, vicarious experiences, social persuasion, and physiological states (Bandura, 1997)—became key elements.

In the context of learning mathematics, students' self-confidence played a crucial role. Determining and comprehending students' self-efficacy is vital for encouraging academic performance, perseverance and motivation, improving psychological health, creating successful educational interventions, and cultivating a lifelong learning mentality. Meanwhile, the 5Es instructional model combined various methods to provide a unique mathematics learning experience, aiding students in developing a strong knowledge foundation through active participation. The increased exposure to the 5Es model was seen as a means for teachers to innovate their instructional delivery, while simultaneously enhancing students' self-efficacy and boosting academic engagement and performance.

## Theoretical Framework

The current study is anchored on the foundational principles of self-efficacy theory found between the locus of control (Rotter, 2011) and social cognitive theory by Albert Bandura. The idea that humans, themselves, control over actions that affect their lives are the common elements of these theories (Zee & Koomen, 2016; Bandura, 1977). Rotter theorized locus of control as a set of expectations that each individual develops through interaction and experiences with their environment in the form of reinforcements. Rotter then categorized locus of control into two, external and internal. When people perceived whether outcomes were result of luck, fate or kindness of other people, it is categorized as external. On the other hand, when people perceived those outcomes were result of their own actions such as hard work, dedication and discipline, it is categorized as internal. Hence, those who adopted an external locus of control considered themselves as a beneficiary of a friendly environment.

In contrast, in internal locus of control, a person credits good grade or promotion with competence, hard work, and perseverance. Credit poor grades and missed promotions and opportunities when there is lack of preparation or failing to meet expectations. According to Rotter, an individual becomes happier, more self-motivated, tend to easily adapt to changes, overcome obstacles easily, and become more successful when successes and failures are being attributed into their own actions (Rotter, 2011).

Building on Rotter's theory, Albert Bandura on the other hand argued that people are not only motivated by general expectancies. Bandura claimed that people were also influenced by what they perceived as their capabilities and made a clear distinction between response-outcome expectancies and self-efficacy expectations. Bandura defined response-outcome expectations as individuals' estimates wherein a given behavior leads to certain outcomes (Bandura, 1977).

With self-efficacy theory, Bandura (1977) argues that an individual may know that a given action or behavior may lead to positive result. Hence, the primary cause of human behavior is personal self-efficacy.

People with higher level of self-efficacy set challenging goals and maintains strong commitment to them. In the face of inhibiting failure, they persevere, increase and sustain efforts in order to become successful. Threatening situations are being faced with confidence so as they can have control over them. According to Bandura (1977), this type of outlook in life helps to reduce and lower stress and depression, respectively.

## Objectives

The study aimed to determine the manifestation of self-efficacy and its relationship to mathematics learning experience using 5Es model of the mathematics pre-service teachers in BatStateU Campuses under the program Bachelor of Secondary Education major in Mathematics during the academic year 2020-2021.

Specifically, it aimed to:

1. Determine the level of manifestation of self-efficacy of mathematics pre-service teachers in terms of:
  - 1.1 mastery experience;
  - 1.2 vicarious experience;
  - 1.3 verbal persuasion;
  - 1.4 somatic and emotional state.
2. Assess mathematics learning experience in terms of the respondent's degree of exposure following 5Es instructional phases:
  - 2.1 engage;

- 2.2 explore;
  - 2.3 explain;
  - 2.4 elaborate;
  - 2.5 evaluate.
3. Correlate the respondents' assessments on level of manifestation of self-efficacy and the degree of exposure to 5Es instructional phases.
  4. Identify the pre-service teachers' discourses on self-efficacy through exposure on 5Es.
  5. Propose a mathematics learning guide.

## Methodology

### Research Design

The researcher utilized descriptive-correlational design in the study. According to Stangor & Walinga (2014), the purpose of this design is to describe and measure relationship between or among relevant variables. In this method, the researcher does not seek to control or change the variables in this design, as in an experiment; instead, they relate using correlation statistics.

### Respondents

This study considered three campuses in Batangas State University offering Bachelor of Secondary Education major in Mathematics. There were a total 145 mathematics pre-service teachers. The researcher used the Raosoft calculator, at 5 percent margin of error, to identify the sample size of 106. The number of respondents per campus was selected using stratified random sampling with proportionate allocation. Pre-service teachers were chosen as respondents since they were considered to be the most credible representative for this group. It is assumed that pre-service teachers are well-equipped with the knowledge and skills of mathematics learning experience using 5E's model as they manifest mathematics self-efficacy which can help their future students to develop positive attitude towards mathematics.

### Data Gathering Tool

The major data collection instrument for this study was a researcher-made questionnaire separated into three components. The first section of the test assessed respondents' level of manifestation of self-efficacy in terms of mastery experience, vicarious experience, verbal persuasion and somatic and emotional states with a total of 46 indicators. The second part of the survey determined the respondents' degree of exposure to 5E's instructional phases as to engage, explore, explain, elaborate and evaluate comprising a total of 54 items. Additionally, the third part is composed of four guide questions utilized in the focus group discussion to identify the discourses on self-efficacy through exposure on 5E's. The item statements and guide questions are based on the pre-survey questionnaire made by the researcher.

Cronbach alpha coefficient was computed to assess the internal consistency of the item statements along pre-service teachers' manifestation level of self-efficacy as exposed to 5E's instructional phases. The computed values of 0.940 for respondents' level of manifestation of self-efficacy and 0.987 for their assessment on the degree for their exposure to 5E's instructional phases are greater than 0.70 affirming the questionnaire as sufficiently reliable.

The responses in the questionnaire were given in a fixed alternative format. A four-point rating scale was used as options for the responses. The following scale continuum and corresponding VIs are given as follows:

<b>Numerical Value</b>	<b>Mean Ranges</b>	<b>Interpretation</b>
4	3.50 - 4.00	Highly Manifested / Highly Exposed
3	2.50 - 3.49	Manifested / Exposed
2	1.50 - 2.49	Slightly Manifested / Slightly Exposed
1	1.00 - 1.49	Least Manifested / Least Exposed

### **Data Collection Procedure and Treatment**

The final version of the questionnaire was administered to the target respondents once its validity and reliability were established. The researcher sought the approval of the higher authorities for the administration of the questionnaire. Test questionnaire distribution was done in online mode since this study was conducted during challenging time caused by a pandemic. Focus group discussion was also done in online mode through google meet.

Upon the development of the questionnaire, it was replicated to collect necessary data. Through a letter of request, the researcher obtained approval from Vice Chancellor for Academic Affairs of Batangas State University campuses and deans of College of Teacher Education. After getting the approval, the researcher distributed the questionnaire to the respondents who agreed to participate in the study to understand its substance and aim.

Google Forms and Google Meet were used to administer the questionnaire and conduct focus group discussion. The data obtained from the questionnaire replies were tallied, tabulated, processed, evaluated, and provided anonymously as grouped data by the researcher in accordance with the country's data privacy laws.

The gathered qualitative data were analyzed using weighted mean and standard deviation and Pearson Product Moment Correlation. Whereas, through a comprehensive analysis of the qualitative data, the researchers were able to empower students pursuing teacher education, encouraging them to consider and employ diverse learning strategies for mastering mathematical concepts. This approach aimed to enhance their self-efficacy in mathematics.

## Results

The collected data were analyzed to create and demonstrate the tables below. These are intended to point out and clarify the findings in accordance with the study's objectives. They provide the findings in an organized and easily comprehensible manner.

### 1. Level of Manifestation of Self-efficacy

#### 1.1. Mastery Experience

**Table 1** Level of Manifestation of Self-Efficacy in Terms of Mastery Experience

Table 1 shows the pre-service teachers' level of manifestation of self-efficacy in terms of mastery experience. Also, it displays how the pre-service teachers share knowledge during discussions in mathematics classes, concentrate on complex mathematical problems until finding the correct answer and figure out mathematical problems like dividing up a restaurant bill when hanging out with friends.

Item Statements	Mean	Standard Deviation	Verbal Interpretation
1. Understanding mathematical concepts easily	3.10	0.58	Manifested
2. Sharing knowledge during discussions in mathematics classes	3.22	0.68	Manifested
3. Solving mathematical problems before other do	2.99	0.65	Manifested
4. Helping classmates with complex mathematics problems	3.17	0.67	Manifested
5. Concentrating on complex mathematical problems until finding the correct answer	3.22	0.65	Manifested
6. Identifying the given problem and easily solves the problem	3.06	0.71	Manifested
7. Receiving good grades in mathematics courses	3.06	0.70	Manifested
8. Passing mathematics examinations with exemplary scores	2.91	0.71	Manifested
9. Demonstrating ability to think and work abstractly and see mathematical patterns and relationships	3.05	0.64	Manifested
10. Figuring out mathematical problems like dividing up a restaurant bill when hanging out with friends	3.20	0.70	Manifested
11. Identifying proper heuristics to be used in solving mathematical problems	3.02	0.68	Manifested
12. Accomplishing given mathematical tasks easily	3.02	0.65	Manifested
<b>Overall</b>	<b>3.08</b>	<b>0.50</b>	<b>Manifested</b>

It implies that the students boost their mastery with collaborative learning and able to understand difficult problems. This is supported in the study of Bernacki et al. (2020), studying through collaboration shows benefits specifically memory increase and utilization of knowledge in real-life scenario. In addition, educators, academicians, and policymakers all understand the value of small-group collaboration in promoting student learning.

## 1.2 Vicarious Experience

Table 2 reveals the respondents' level of manifestation of self-efficacy in terms of vicarious experience. As observed, pre-service teachers have strong levels of self-efficacy when watching video recorded lectures to grasp mathematical ideas, observing a teacher answer a problem quickly, and seeing other students perform well in mathematics.

This implies that students are able to understand mathematical concepts while observing how others perform. This supports the idea of Hoover et al. (2012), that the benefits of vicarious observational learning over direct experience sequencing appeared to be quite consistent. Observational learning is a good way to acquire and improve particular skills and strengths.

**Table 2** Level of Manifestation of Self-Efficacy in Terms of Vicarious Experience

Item Statements	Mean	Standard Deviation	Verbal Interpretation
1. Noticing other students sharing their knowledge and idea on a certain topic motivates to do the same.	3.47	0.60	Manifested
2. Seeing other students perform well in mathematics gives motivation to do better as well.	3.53	0.59	Highly Manifested
3. Watching other students listen attentively to the teacher gives encouragement to focus more on the discussion.	3.48	0.64	Manifested
4. Perceiving some classmates participate in mathematics activities gives encouragement to be active in class.	3.38	0.68	Manifested
5. Having some friends working on tough mathematics problems boosts confidence to solve the same problems.	3.52	0.64	Highly Manifested
6. Looking at the teacher solve a problem easily is inspiring to learn the lesson well.	3.56	0.65	Highly Manifested
7. Seeing other students doing an advance study is an influence to do the same.	3.29	0.70	Manifested
8. Observing friends' success in mathematics increases the belief to learn the lesson well.	3.45	0.65	Manifested
9. Noticing how other students solve mathematics problems is an influence to try solving the same problem.	3.40	0.63	Manifested
10. Seeing other students volunteer in doing mathematics activities is encouraging.	3.29	0.77	Manifested
11. Watching video recorded lectures to understand mathematical concepts.	3.58	0.55	Highly Manifested
<b>Overall</b>	<b>3.45</b>	<b>0.48</b>	<b>Manifested</b>

### 1.3 Verbal Persuasion

Receiving positive verbal feedback while performing a difficult task convince a person that they have the necessary skills and ability to succeed. Shown in Table 3 is the pre-service teachers' level of manifestation of self-efficacy in terms of verbal persuasion.

**Table 3** Level of Manifestation of Self-Efficacy in Terms of Verbal Persuasion

Item Statements	Mean	Standard Deviation	Verbal Interpretation
1. Gaining compliment from teachers for being good at learning mathematics	3.23	0.71	Manifested
2. Receiving praise from other people for having talent in doing mathematics	3.25	0.70	Manifested
3. Getting commendation for having good mathematics performance	3.18	0.73	Manifested
4. Obtaining admiration from family members for being a good mathematics student	3.30	0.73	Manifested
5. Being praised by other students for being good at learning mathematics	3.15	0.79	Manifested
6. Being commended for being active participant in mathematics class helps to become more motivated	3.11	0.82	Manifested
7. Hearing uplifting words from teachers increases self-motivation in learning mathematics	3.42	0.69	Manifested
8. Receiving encouragement from friends to take higher level mathematics courses	3.32	0.75	Manifested
9. Getting praise to do well in a mathematics test increases confidence in solving mathematics problems.	3.31	0.72	Manifested
10. Receiving word of encouragement during a board work in mathematics is very motivating.	3.47	0.59	Manifested
11. Attaining admiration after having good grades in mathematics	3.32	0.63	Manifested
<b>Overall</b>	<b>3.28</b>	<b>0.58</b>	<b>Manifested</b>

The results reveal that receiving words of encouragement during a board work heightens students' self-efficacy, hearing uplifting words from teachers increases self-motivation, receiving encouragement from friends to take higher level and attaining admiration after having good grades in mathematics. This means that hearing words of affirmation encourages students to perform well in mathematics class. It is related to the study of Tabibnia (2020) which emphasize that self-affirmation activates the reward centers in your brain, according to a study published in the journal *Social Cognitive and Affective Neuroscience* (1). It is supported also by Dutcher & Creswell (2018) that hearing affirmations can engage your brain's reward system, which can affect how you deal with both emotional and physical pain.

**Table 4** Level of Manifestation of Self-Efficacy in terms of Somatic and Emotional States

Table 4 shows the respondents' level of manifestation of self-efficacy in terms of somatic and emotional state.

Item Statements	Mean	Standard Deviation	Verbal Interpretation
1. Worrying for being unsure of the mathematics concepts used in problem solving	3.17	0.75	Manifested
2. Getting nervous when being asked to answer questions in mathematics class	3.16	0.73	Manifested
3. Worrying for not being able to answer in mathematics course	3.18	0.75	Manifested
4. Being afraid to give incorrect answer during discussion in mathematics class	3.12	0.79	Manifested
5. Feeling uncomfortable when preparing and taking mathematics test	2.90	0.82	Manifested
6. Worrying for lacking knowledge on mathematics to do well in future mathematics courses	3.14	0.71	Manifested
7. Worrying for underachieving to get good grade in mathematics course	3.03	0.77	Manifested
8. Feeling anxious when preparing for a performance task in math	2.96	0.82	Manifested
9. Worrying for having insufficient mathematical knowledge in future career	3.08	0.79	Manifested
10. Getting nervous when applying mathematical concepts	2.97	0.79	Manifested
11. Being anxious when given unfamiliar mathematical problem	3.14	0.77	Manifested
12. Feeling nervous when leading groupmates in doing performance task in mathematics	3.00	0.85	Manifested
<b>Overall</b>	<b>3.07</b>	<b>0.61</b>	<b>Manifested</b>

The findings show that students worry when they are not able to answer in mathematics courses, for being unsure of the concepts used in problem solving and gets nervous when being asked to answer questions in mathematics class. This implies that the students are having anxiety when tasked to participate in mathematics teaching and learning process. As supported by the study of Daneshamooz & Alamolhodaie (2012), mathematics anxiety is a serious negative emotional reaction to mathematics. "A sensation of tension and anxiety that interferes with the manipulation of numbers and the solving of mathematical issues in everyday life and academic contexts," as it is defined.

## 2. Degree of Exposure to 5E's Instructional Phase

### 2.1 Engage

Table 5 displays the respondents' degree of exposure to 5E's instructional phase as to engage. It demonstrates that the pre-service teachers are paying attention in class, showing interest in the topic by participating actively, and interacting well with the rest of the class during a math activity.

This indicates that the students are eager to learn mathematics interactively. When viewed through a mathematical lens, engagement occurs when students enjoy learning mathematics Rimm-Kaufman et al. (2014). Students place a high importance on mathematics education when they see links between the math they learn in school and the math they use in their daily lives.

**Table 5** Degree of Exposure to 5E's Instructional Phases as to Engage

Item Statements	Mean	Standard Deviation	Verbal Interpretation
1. Demonstrating interest in the lesson by listening attentively in the discussion	3.50	0.56	Highly Exposed
2. Asking questions to satisfy curiosity about the lesson	3.29	0.72	Exposed
3. Responding to questions with enthusiasm	3.14	0.75	Exposed
4. Raising hand in order to answer questions	3.15	0.79	Exposed
5. Making connections to other ideas and offer insights accordingly	3.21	0.74	Exposed
6. Showing interest in the topic by participating actively in the discussion	3.36	0.68	Exposed
7. Providing definitions and answers when being asked	3.17	0.72	Exposed
8. Interacting well with the rest of the group during an activity in math class	3.35	0.65	Exposed
9. Thinking toward the learning outcomes of current activities	3.23	0.67	Exposed
10. Expressing understanding of the topic based on prior knowledge	3.32	0.61	Exposed
11. Sharing own thoughts and ideas in class after listening to other answers	3.19	0.78	Exposed
12. Suggesting ways on how to better understand the lesson	3.21	0.73	Exposed
<b>Overall</b>	<b>3.26</b>	<b>0.54</b>	<b>Exposed</b>

## 2.2 Explore

**Table 6** Degree of Exposure to 5E's Instructional Phases as to Explore

Item Statements	Mean	Standard Deviation	Verbal Interpretation
1. Determining which pieces of information are useful. Thinking how information can be applied in real-world context.	3.29	0.57	Exposed
2. Addressing more questions related to the topic	3.11	0.76	Exposed
3. Thinking freely but within limits of the activity	3.28	0.63	Exposed
4. Sharing ideas and observations with the group	3.35	0.65	Exposed
5. Collaborating with others to work on alternative solutions	3.42	0.58	Exposed
6. Analyzing or checking for patterns that may be present	3.36	0.56	Exposed
7. Investigating the given questions using known methods to eventually share and expand the results in class	3.15	0.70	Exposed
8. Translating the given questions in a way it can be understood better	3.41	0.69	Exposed
9. Investigating the problem based on what is known	3.39	0.59	Exposed
10. Analyzing patterns that occur during the teaching and learning process	3.35	0.60	Exposed
11. Investigating which proper heuristics can be used in solving given problems	3.25	0.69	Exposed
<b>Overall</b>	<b>3.31</b>	<b>0.50</b>	<b>Exposed</b>

Shown in Table 6 is the respondents' degree of exposure to 5E's instructional phases as to explore. The respondents are exposed to cooperating with others to work on alternate solutions, studying the problem based on what is known, and evaluating or looking for patterns that may be present, as can be observed. This suggests that pre-service teachers value investigating solutions to a given problem. As emphasized in the study of Gurat (2018), problem-solving is especially important in mathematics. The basic purpose of teaching mathematical problem-solving is for students to be able to build a general aptitude to solve real-life problems and apply mathematics to real-life scenario.

### 2.3 Explain

**Table 7** Degree of Exposure to 5E's Instructional Phases as to Explain

Item Statements	Mean	Standard Deviation	Verbal Interpretation
1. Defining the given terms based on one's own understanding for better comprehension	3.30	0.65	Exposed
2. Using illustrations for better understanding of the given problem	3.38	0.62	Exposed
3. Discussing possible solutions with others	3.38	0.52	Exposed
4. Explaining terms and concepts in one's own words	3.25	0.69	Exposed
5. Demonstrating what was learned by sharing thoughts and ideas on a specific topic	3.27	0.66	Exposed
6. Using recorded observations in giving explanations	3.11	0.81	Exposed
7. Referring to previous activities to clarify an idea	3.35	0.62	Exposed
8. Asking the validity of different explanations heard	3.22	0.72	Exposed
9. Listening to and trying to comprehend the teacher's explanation	3.48	0.54	Exposed
10. Listening critically to others' explanations	3.46	0.60	Exposed
<b>Overall</b>	<b>3.32</b>	<b>0.49</b>	<b>Exposed</b>

Respondents' degree of exposure to 5E's instructional phases as to explain is displayed in Table 7. As can be seen, the pre-service teachers are listening to and trying to grasp the teacher's explanation, critically listening to others' interpretations, utilizing illustrations to better understand the problem, and discussing possible solutions with others. The findings reveal that respondents pay close attention to the topic at hand, share information with others and listen intently to better understand it. Likewise, pre-service teaching practice good listening skills. A competent listener demonstrates readiness and the capacity to turn sound into words and their meaning in context Sadiku (2015). The good listener then connects the meanings offered to other experiences, sharing responsibility with the speaker. When a student can listen more efficiently, he learns more effectively.

## 2.4 Elaborate

As can be observed, Table 8 shows the respondents exposure to elaboration stage of the 5E's instructional phases. It can be seen that pre-service teachers use previous information to probe, ask questions and make reasonable judgments, apply what was learned to new and unfamiliar situations and give examples based on real-life situations to better understand the lesson. It is in the sense that respondents are able to make connections to understand the relationship of what were familiar and unfamiliar to them. Murata et al. (2012) stated that making connections allows students to grasp how mathematical topics are interconnected and gives them the opportunity to apply number concepts to other areas. Students gain a better understanding of mathematics and regard it as a valuable and exciting subject to study as a result of these linkages.

**Table 8** Degree of Exposure to 5E's Instructional Phases as to Elaborate

Item Statements	Mean	Standard Deviation	Verbal Interpretation
1. Extending one's understanding of the new terms, concept/ problems to new situations	3.30	0.60	Exposed
2. Using previous information to probe, ask questions and make reasonable judgments	3.38	0.61	Exposed
3. Drawing reasonable conclusions and solutions by offering proofs and evidences	3.11	0.67	Exposed
4. Expressing own ideas on a given topic by looking for its connection to real-world context	3.26	0.65	Exposed
5. Using new knowledge and continue to explore its implications	3.22	0.68	Exposed
6. Making connections to other related concepts	3.32	0.66	Exposed
7. Applying what was learned to new and unfamiliar situations	3.36	0.56	Exposed
8. Applying new labels, definitions, explanations and skills in new but similar situations	3.26	0.62	Exposed
9. Integrating gained knowledge to other courses	3.30	0.69	Exposed
10. Drawing reasonable conclusions from gained concepts	3.27	0.66	Exposed
11. Giving examples based on real-life situations to better understand the lesson	3.34	0.65	Exposed
<b>Overall</b>	<b>3.28</b>	<b>0.51</b>	<b>Exposed</b>

## 2.5 Evaluate

**Table 9** Degree of Exposure to 5E's Instructional Phases as to Evaluate

Shown in Table 9 is the exposure of pre-service teachers to 5E's instructional phases as to evaluate. It demonstrates that pre-service teachers use think, pair, and share with classmates to determine the scope of what was studied, summarize concepts/ideas to determine if lessons were learned and understood, and engage in activities that prompt reflection on what has been done, what has been learned, and what remains to be done.

Item Statements	Mean	Standard Deviation	Verbal Interpretation
1. Using think, pair and share with classmates to see the extent of what was learned.	3.42	0.73	Exposed
2. Summarizing the concepts/ideas to see if lessons were learned and understood	3.41	0.64	Exposed
3. Answering open-ended questions by using observations, evidences, and previously accepted explanations	3.40	0.67	Exposed
4. Providing reasonable responses and explanations to given questions	3.29	0.70	Exposed
5. Demonstrating understanding of the concept through models and performance tasks	3.31	0.71	Exposed
6. Asking related questions that encourage future investigations	3.21	0.78	Exposed
7. Reflecting and providing evidence of new understanding of the material	3.28	0.73	Exposed
8. Engaging oneself in activities that prompt to think about what have been done, what have been learned, and what still need to do	3.41	0.60	Exposed
9. Trying to connect and relate the topic to real-world context to see its importance	3.35	0.66	Exposed
10. Providing multiple representations to check better understanding of the learned concepts	3.34	0.66	Exposed
<b>Overall</b>	<b>3.34</b>	<b>0.57</b>	<b>Exposed</b>

This concludes that pre-service teachers place a high emphasis on self-evaluation to ascertain whether or not they have grasped the topic. Sharma et al. (2016) focused on the impact of self-assessment by students on their learning. Students' enthusiasm and motivation for subjects can be increased through self-assessment, resulting in improved learning and academic achievement, as well as the development of critical abilities for analyzing their own work.

### 3. Relationship between the Respondents' Level of Manifestation of Self-efficacy and the Degree of Exposure to 5E's Instructional Phases

Table 10 reveals the relationship between the respondents' level of manifestation of self-efficacy and the degree of their exposure to 5E's instructional phases.

The table shows that when the respondents' level of manifestation of self-efficacy were correlated with the degree of their exposure to 5E's instructional phases, the computed Pearson's  $r$  value is 0.81 and the probability value of 0.000 revealed that there is adequate evidence at 0.01 level of significance to reject the null hypothesis and confirm that the respondents' manifestation level of self-efficacy and exposure to 5E's instructional phases are related.

**Table 10** Relationship between the Respondents' Level of Manifestation of Self-efficacy and the Degree of Exposure to 5E's Instructional Phases

Variables	Computed Pearson $r$	p value	Decision $H_0$	Interpretation
Self-efficacy and 5E's Instructional Phases	0.81	.000	Reject $H_0$	Significant
$\alpha = 0.01$				

This finding implies that the respondents' manifestation level of self-efficacy is significantly related to the degree of exposure to 5E's instructional phases. This indicates that as the degree of students' exposure to 5E's instructional phases increases, their manifestation level of self-efficacy also increases.

### 4. Discourses on Self-Efficacy through Exposure on 5E's

Students' attention and focus are improved when they are actively involved in the learning process. They are also motivated to practice higher-level critical thinking abilities and have more meaningful learning experiences. Instructors that use a student-centered approach to instruction boost student engagement, which helps everyone achieve the course's learning objectives more successfully. To determine the discourses on self-efficacy through exposure on 5E's instructional phases, selected participants underwent a Focus Group Discussion (FGD). Themes and subthemes emerged from the text data are presented in Table 13.

The analysis of the participants' responses on the conducted interview reveals three major themes. These themes include mathematics learning experiences, factors affecting self-efficacy and exposure to 5E's. Participants perceived mathematics as a challenging subject as they reflect on their mathematics learning experiences. However, even though it is challenging, they found it thrilling, fulfilling and engaging. A participant describes his learning experiences in mathematics as follows:

**Table 11** Discourses on Self-Efficacy through Exposure on 5E's

The table summarizes the key findings from a focus group discussion, which revolves around three main themes related to mathematics learning experiences and self-efficacy. The first theme, "Mathematics Learning Experiences," is divided into two subthemes: "Mathematics is challenging" and "Mathematics is engaging." Under "Mathematics is challenging," participants express their perception that learning mathematics is difficult, but they also find it fulfilling and engaging. They note that competent teachers and various learning methods, such as online group discussions and YouTube video tutorials, can make mathematics an engaging experience. The second theme, "Factors Affecting Self-Efficacy," includes two subthemes: "Correct answers" and "Incorrect answers." Participants highlight the positive impact of getting the right answers, which leads to fulfillment, satisfaction, and increased motivation to solve more problems. They also recognize the value of incorrect answers as opportunities for growth, increased motivation, and reflection on their learning. The third theme, "Exposure to 5E's," relates to a teaching approach characterized by five phases: Engage, Explore, Explain, Elaborate, and Evaluate. This approach is seen as highly interactive, student-centered, and conducive to active learning, which, in turn, enhances self-efficacy by encouraging student participation at every stage of the learning process. These findings provide valuable insights for educators and curriculum designers looking to improve mathematics education and boost students' confidence in the subject.

Themes	Subthemes	Exemplar Texts
Mathematics Learning Experiences	Mathematics is challenging	1. Learning mathematics is challenging but fulfilling. [P1] 2. Math is challenging but thrilling to learn, especially when the teacher is competent. [P2]
	Mathematics is engaging	3. Use of google meet for online group discussion. [P10] 4. Watching youtube video tutorials to further understand the lesson. [P6] 5. Familiarization with problem-solving formulas and processes through collaborating with peers. [P3]
Factors affecting self-efficacy	Correct answers	1. Being able to get the right answer gives fulfillment and satisfaction. [P4] 2. heightens motivation to answer more related problems. [P1]
	Incorrect answers	3. Incorrect answers give motivation to strive harder. [P5] 4. Allows for additional exploration in order to gain a better understanding. [P8] 5. Opens door to evaluate and reflect on one's learning. [P7] 6. Gives more thrill in solving problems. [P3]
Exposure to 5E's	Increased self-efficacy	1. Highly interactive and student-centered. [P9] 2. Gives emphasis to learning as an active process and value student engagement. [P6] 3. Learning is strengthened since occurs in every phase. [P5] 4. Develops active participation among students which heightens students' self-efficacy. [P3]

## **Proposed Mathematics Learning Guide**

Mathematics learning guide is presented as an output of the study for evaluation and utilization of mathematics instructors in exposing students to the 5E's instructional phases in order to improve their self-efficacy in mathematics. Students' metacognition, or awareness of and knowledge of their own learning, as well as their capacity to better regulate their learning, are aided by this learning guide. It is a useful piece of knowledge that can assist students in the learning process by providing them with information, allowing them to govern their learning, and enabling them to regulate their activities.

## **Mathematics Learning Guide**

### **Introduction**

Mathematics, as perceived by many, is challenging to teach and understand. Nevertheless, teachers are the most essential influence in student achievement inside the school system. Teachers who have mastered effective ways and strategies for teaching and designing learning activities in mathematics can assist students in improving their mathematical knowledge and outcomes. Thus, effective mathematics teaching creates defined goals for students' learning of mathematics, places goals inside learning progressions, and uses the goals to guide instructional decisions.

Using the 5E instructional phases to teach and design learning activities in mathematics allows educators to provide students with a unique learning experience. Teachers that can implement instructional models like the 5E Model into their classrooms help students create a firm foundation of knowledge by engaging them in active learning. They emphasize possibilities to tailor learning through this method. Because students are actively involved in the teaching and learning process and have the opportunity to collaborate with peers, they are more at ease when learning mathematical ideas, resulting in a more conducive learning environment that reduces fear of math and enhances self-efficacy.

### **Parts of the Learning Guide:**

The mathematics learning guide is designed for instructors seeking to enhance students' self-efficacy in mathematics through exposure to the 5E instructional phases. It comprises the following parts:

#### **Engage:**

Initiate discussions or activities related to the upcoming math lesson.

Provide opportunities for students to observe and wonder about mathematical concepts.

#### **Explore:**

Facilitate experiences that allow students to explore mathematical concepts or skills.

Aim for a common experience that students and teachers can later refer to when explaining new concepts.

#### **Explain:**

Present the topic or skill during this phase.

Encourage students to articulate their understanding, with teacher support as needed.

#### **Elaborate:**

Enable students to extend their understanding and apply concepts to new situations.

Foster collaboration to address misunderstandings and deepen comprehension.

#### **Evaluate:**

Assess student learning at the end of the unit.

Conduct formative assessments throughout each phase, with summative assessment at the conclusion.

## Discussions

The respondents' level of self-efficacy in terms of vicarious experience is highest, followed by verbal persuasion, mastery experience, and somatic and emotional state (Villas, 2019). This implies that individuals in the studies had the most confidence in their ability to perform tasks when they observed others successfully completing similar tasks (vicarious experience). Verbal persuasion, such as receiving encouragement or positive feedback, also played a significant role in boosting self-efficacy. Mastery experience, which refers to personal achievements and successes, was another important factor influencing self-efficacy.

Moreover, the findings suggest that individuals' beliefs about their own capabilities are influenced by various factors, and understanding these sources of self-efficacy can have implications for educational practices and interventions.

On the other hand, pre-service teachers value the use of 5Es instructional phases in delivering instruction in mathematics as they actively involve themselves in the teaching and learning process. It recognizes the significant role these phases play in fostering their engagement and understanding of mathematical concepts.

## Conclusion and suggestions

Considering the above results, the pre-service teachers' level of manifestation of self-efficacy is significantly related to the degree of exposure to 5Es instructional phases. It emphasizes the pivotal role that the 5E's instructional approach plays in shaping their self-confidence and competence in mathematics education. Also, it reveals a direct and influential connection between the students' confidence in their mathematical abilities and their active engagement with the 5E's instructional model.

The following were made based on the finding of the study:

The researcher-made mathematics learning guide may be tried and be utilized to see how effective it is at increasing students' self-efficacy in mathematics.

Pre-service teachers may contemplate and utilize varied learning strategies to master mathematical concepts so as to boost their self-efficacy in mathematics and instructors may consider innovation and modification of instructional practices in delivering instructions and designing learning experiences based on 5E's model that will help boost students' self-efficacy in mathematics.

Future researchers may conduct similar studies to further identify other factors that may influence student's self-efficacy as exposed to 5E's instructional phases.

## New knowledge and the effects on society and communities

The recent research findings shed light on the multifaceted nature of self-efficacy. The study revealed that self-efficacy is most pronounced when individuals observe others successfully completing similar tasks, a phenomenon known as vicarious experience. Following closely, verbal persuasion, which involves receiving encouragement and positive feedback, was identified as a substantial contributor to self-efficacy. Moreover, the research emphasized the significance of mastery experience, encompassing personal achievements and successes, as an influential factor in bolstering one's self-efficacy.

These findings hold significant implications for society, particularly in the realm of education and personal development. Recognizing the sources of self-efficacy can inform educational practices and interventions, ultimately aiding individuals in their pursuit of tasks and goals. By understanding the interplay of these factors, educators and counselors can better support and nurture the self-efficacy of students and individuals, enabling them to thrive and overcome challenges in various domains.

In the domain of education, the research also uncovered the value of the 5Es instructional phases for pre-service teachers when delivering mathematics instruction. These phases actively engage educators in the teaching and learning process, highlighting their pivotal role in facilitating comprehension and engagement with mathematical concepts. Consequently, this approach has the potential to enhance the quality of mathematics education.

Furthermore, the study demonstrated that pre-service teachers' self-efficacy in mathematics can be significantly improved by incorporating the 5E's Instructional phases with the aid of a researcher-made mathematics learning guide. This presents an exciting opportunity to empower future educators and, in turn, positively impact the learning experiences of students. By equipping teachers with effective tools and strategies, the research has the potential to enhance the overall quality of math education in local communities and beyond. In essence, these findings illuminate a pathway towards fostering a more confident and engaged generation of educators and learners.

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## Factors Influencing Visitors' Desire to Visit a First Class Temple on Rattanakosin Island, Bangkok, Using Regression Tree

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### Abstract

Visitors' desire to visit a first-class temple on Rattanakosin Island in Bangkok is analysed in this quantitative study. We used closed-ended questions along with Likert scales (1-5) to survey 974 respondents. The questionnaire served as a research instrument, and the sample was chosen randomly through accidental sampling methods. The data was analysed using computer programs. The pull factor analysis demonstrates that the model effectively predicts outcomes with significant predictive capacity (MSE: 0.48, RMSE: 0.219, MAE: 0.170, MAPE: 50.84%, R2: 0.952). The push factor analysis also shows high explanatory power (MSE: 0.040, RMSE: 0.200, MAE: 0.157, MAPE: 46.08%, R2: 0.962). The study identifies key pull factors, including place identity, sacred sites, and adherence to COVID-19 guidelines. Push factors comprise connecting with the divine, purifying the mind, and discovering new things.

A key strategy for enhancing the appeal of Bangkok's royal temples is to preserve and promote significant landmarks, integrate educational and cultural experiences, prioritise health and safety measures during COVID-19, and provide exceptional customer service. Furthermore, the study recommends incorporating Dharma practices and preserving sacred sites to facilitate merit-making opportunities. By focusing on these recommendations, religious sites can increase their appeal to visitors and contribute to their overall well-being.

**Keywords:** Regression tree, Motivation, First-Class royal temple, Bangkok

## Introduction

Tourism plays a significant role in the global economy, contributing to GDP and employment (WTTC, 2022). Thailand, celebrated for its vibrant cultural heritage and breathtaking landscapes, draws millions of tourists annually. As the tourism sector continues to evolve, integrating physical, Thai art, and cultural data is crucial for sustainable development and efficient resource allocation (UNESCO, 2020). By harnessing these datasets, a comprehensive understanding of visitor preferences, behaviour, and the influence of physical features on their choices can be achieved. Bangkok, the capital of Thailand, has traditionally been a popular destination, attracting a large number of visitors annually (Kariyapol & Agarwal, 2020). Countries heavily reliant on tourism, like Thailand, are especially vulnerable to the adverse effects of the pandemic (Behsudi, 2020).

The temples in Bangkok, such as Wat Arun, Wat Pho, and Wat Pra Kaew, have a unique appeal to visitors, offering spiritual experiences, cultural immersion, and historical exploration (Timothy & Boyd, 2006). The sacred atmosphere, intricate architecture, and religious rituals captivate and fascinate visitors (Smith, 2010). Tourism planners, marketers, and policymakers must identify the motivations that drive visitors to visit temples in Bangkok. However, the absence of visitors due to the pandemic has significantly affected the financial stability of these temples, which heavily rely on entry fees and donations (Mroz, 2021). Moreover, the emotional and spiritual factors influencing visitors' motivation to visit a temple in Bangkok have not been adequately explored. Understanding visitors' experiences is crucial for the success and long-term development of tourist destinations (Wang & Li, 2023). Currently, there is a lack of specific information about segmenting visitors' motivations for exploring temples in Bangkok.

The Royal Monastery of the First Rank, situated on Rattanakosin Island in Bangkok, is surrounded by the historic city of Bangkok and Thailand. Currently, there are several places of national historical value, including palaces, temples, religious sites, bridges, canals, and various architectural structures, particularly temples. This island, located to the east of the Chao Phraya River, covers an area of approximately 2,588.75 rai and is surrounded by water. The district administration divides the territory of Phra Nakhon District (Vejasongserm, 2022). Utilising segmentation techniques to categorise visitors based on their unique characteristics and motivations can enhance our understanding of the factors that attract individuals to this remarkable place. However, there is a noticeable gap in the literature regarding the motivations of visitors to this specific monastery. The research can uncover critical issues that may have been previously overlooked, such as the impact of cultural events on visitor preferences, the role of local art in shaping visitor experiences, or the influence of natural landscapes on visitor behavior. By addressing these issues, Thailand can continue to be a premier destination for visitors while maintaining its rich cultural heritage and natural beauty.

Understanding visitors' motivations is essential for developing effective marketing strategies and enhancing the visitor experience (Kim & Fesenmaier, 2008). Researchers have undertaken a comprehensive examination of the factors that draw visitors to the royal monastery and have identified a range of motivations that contribute to their desire to visit this revered site. These motivations include cultural interest (Kim & Fesenmaier, 2008), spiritual fulfilment (Qiao et al., 2021), leisure (Zhou et al., 2022), socialisation (Bigné et al., 2019), and education (Tsaur et al., 2015). Segmenting the visitor based on these motivations can help tailor marketing strategies, improve visitor satisfaction, and encourage revisits (Zhou et al., 2022). Understanding the motivations behind temple travel in Bangkok can provide valuable insights for tourism planners, marketers, and policymakers. This information can be used to

design targeted marketing strategies, highlight unique temple experiences, preserve cultural heritage, and ensure a positive visitor experience (Bigné et al., 2019). By employing classification analysis techniques, this research can contribute to the understanding of visitor motivations for temple travel in Bangkok. Segmenting visitors into distinct groups based on their motivations allows destination marketers and policymakers to develop targeted strategies, create tailored experiences, and allocate resources effectively, ultimately enhancing the overall visitor experience in temple travel in Bangkok.

### **Research objective**

The objective of the research is to analyse the factors influencing visitors' desire to visit first-class temples on Rattanakosin Island in the capital of Thailand. By employing advanced research methodologies and statistical tools, the study seeks to uncover quantitative insights that can inform relevant strategies and policies.

### **Literature Review**

Religious tourism is a vital aspect of cultural exploration, influencing various facets of individuals' lives (Poria et al., 2003). As an integral component of the tourism industry, it encompasses visits to religious monuments and engagement with religious culture, expanding beyond the confines of religious believers to cater to the general public (Nyaupane et al., 2015). Pilgrimage remains a prevalent form of religious tourism, particularly in religions like Buddhism and Catholicism (Kocyigit, 2016).

The search results provide a range of literature on push and pull factors in tourism, including religious tourism. Push factors are internal motivators that drive individuals to travel, such as the desire for escape, adventure, relaxation, and self-exploration. Pull factors are external factors that attract individuals to a particular destination, such as the attractiveness of the destination, cultural heritage, and temple architecture (Said & Maryono, 2018; Piramanayagam et al., 2021). The literature suggests that push and pull factors are interrelated and can influence each other. For example, the desire for spiritual fulfilment and the need for relaxation can both be push factors that motivate individuals to visit religious destinations, while the cultural heritage and beauty of the destination can be pull factors that attract visitors (Liro, 2021).

The research on push and pull factors in religious tourism highlights the importance of understanding the diverse motivations of visitors and tailoring offerings and communication strategies accordingly. For instance, promoting the unique cultural heritage and beauty of a religious destination can enhance its appeal to visitors, while providing opportunities for spiritual fulfilment and relaxation can cater to the intrinsic motivations of visitors (Ghaffari et al., 2022).

Motivations and attractions vary across different tourist destinations and activities, necessitating a comprehensive understanding of push and pull factors for effective market segmentation (Camilleri, 2022). The recognition of these motivations leads to improved products and heightened customer satisfaction during travel experiences (Camilleri, 2022). Examining the literature on motivation for travelling to sacred places reveals early attempts to categorise types of travellers and, more recently, a focus on specific groups such as golfers, health enthusiasts, and divers (Voigt et al., 2011; Ong & Musa, 2012). Understanding the motivations of these distinct groups contributes to the development of targeted marketing strategies, acknowledging the diverse needs of various visitor segments (Katsikari et al., 2020).

## Methodology

### Sampling Method

The survey instrument used in this study was developed based on contributions from various authors in the field of tourism research who have extensively studied different aspects of visitor motivations and destination choices. The survey included components related to push factors (Smith & Kelly, 2006) and pull factors (Giddy, 2018). The aim was to include the most commonly used and relevant variables for the analysis. Participants rated different elements on a Likert scale ranging from 1 (strong dismotivation) to 5 (strong motivation) (Hair et al., 2019).

The study examines an unspecified number of visitors visiting the four first-class royal temples in Bangkok, acknowledging their substantial size. While the population number ( $N$ ) remains unknown, the study centres on the population mean ( $\mu$ ). To address this, the researcher utilised a sample size of 974, determined through a computer programme (Soper, 2022). This considered an expected effect size of 0.3, 24 latent variables, 7 observed variables, a significance level of 0.05, and a power of 0.80 (Westland, 2010). Data quality procedures included cross-verification, outlier removal, and cleansing. Expert evaluations determined average question scores. The Index of Congruence evaluated expert opinions on question consistency, retaining those between 0.50 and 1.00 and revising others below 0.50 (Turner & Carlson, 2003). Questions with an IOC value of 0.86 were determined to be suitable for use, as the value exceeded the threshold of 0.5. Questions with an IOC value lower than 0.50 will be reviewed for potential improvement or elimination (Turner & Carlson, 2003).

To ensure ethical practices in research involving human participants within the tourism sector of Thailand, a controlled sampling technique was employed. This approach followed internationally recognised guidelines for considering ethical aspects in human research. Adhering to these guidelines is crucial for maintaining integrity and protecting the rights and well-being of individuals involved in the studies. Participants were selected through a random sampling process and were provided with a comprehensive explanation of the research objectives. They were also given strict assurances of confidentiality before providing their informed consent. These procedures were carried out in accordance with the approved protocol by the Institutional Review Board (COA 091/2023).

### Data Collection

An initial survey was carried out at multiple locations in Ayutthaya city, resulting in the collection of 30 questionnaires. Following data analysis, specific questions were eliminated, and the remaining ones were refined to shape the final survey instrument, which consists of three sections. The first section comprises six questions focused on gathering demographic information, including gender, age, education level, occupation, marital status, and monthly income of the respondents. The second section, aimed at understanding visitors' behaviour patterns, contains seven items. The third and concluding section explores push and pull motivations through 31 questions. A proportional sampling technique was utilised to ensure a representative sample. The data collection period spanned from May 1st to August 31st, 2023, specifically at four first-class royal temples in Bangkok—Wat Arun, Wat Phra Chetuphon, Wat Mahathat, and Wat Suthat. These temples were chosen strategically due to their high visitor volume, facilitating efficient primary data collection.

## Data Analysis

The quantitative survey data underwent classification analysis to categorise respondents based on their motivational factors. In contrast to conventional regression models, this study utilised regression tree techniques, a departure from previous approaches that segmented visitors based on specific characteristics (Legoh  rel et al., 2015). Unlike traditional regression models that rely on predetermined relationships, regression trees employ recursive binary splitting to unveil causal links between covariates and the dependent variable (Sela & Simonof, 2012). This approach avoids making assumptions about the phenomenon, marking a departure from standard econometric analysis (Kuhn et al., 2014).

The utilisation of a hierarchical tree structure serves as a visual representation of variable interactions, offering a deeper understanding that goes beyond conventional econometric analysis (Pagliara et al., 2020). In this study, the Classification and Regression Tree (CART) algorithm, following the methodology outlined by Breiman (2017), is employed. This algorithm employs recursive binary splitting, where each parent node splits into left and right child nodes. Further splits occur at internal nodes, while terminal nodes represent the end points and contain class assignments. The splitting process is concluded when an impurity decrease threshold of 0.01, as suggested by Montella et al. (2012), is reached. For the analysis of visitor heterogeneity at the Bangkok royal temples, JASP version 0.17.3, a statistical software that possesses regression tree classification capabilities, will be utilized. This technique aims to objectively segment visitors based on their key motivating attributes.

## Results

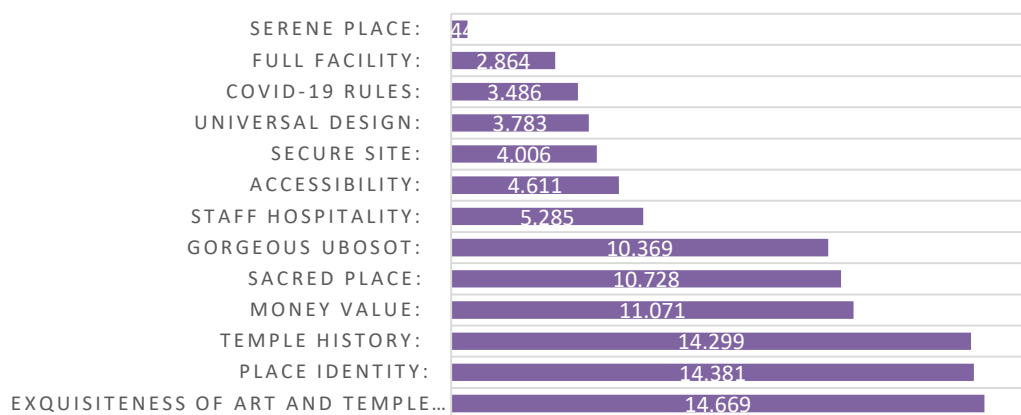
A decision tree grouped Royal Temple visitors. Pull factor model performance was assessed. Model evaluation yielded favorable results (Table 1). MSE of 0.048 indicated low prediction error. RMSE of 0.219 represented average error magnitude. MAE of 0.170 reflected high accuracy. MAPE of 50.84% suggested reasonable accuracy.  $R^2$  of 0.952 demonstrated strong predictive ability with over 95% variance explained. Collectively, metrics showed the model predicted values with low error and high explanatory power. The push factor model was evaluated using five metrics (Table 1). MSE was 0.040 indicating average squared prediction errors. RMSE of 0.20 represented average magnitude of errors. MAE of 0.157 reflected average absolute errors. MAPE of 46.08% quantified average percentage errors.  $R^2$  was 0.962, suggesting a strong ability to predict outcomes, with over 96% of variance explained. Lower MSE, RMSE, MAE and MAPE with higher  $R^2$  indicate a good model fit to the data.

**Table 1** Evaluation metrics

Pull factor index	Value	Push factor index	Value
MSE	0.048	MSE	0.040
RMSE	0.219	RMSE	0.200
MAE / MAD	0.170	MAE / MAD	0.157
MAPE	50.84%	MAPE	46.08%
$R^2$	0.952	$R^2$	0.962

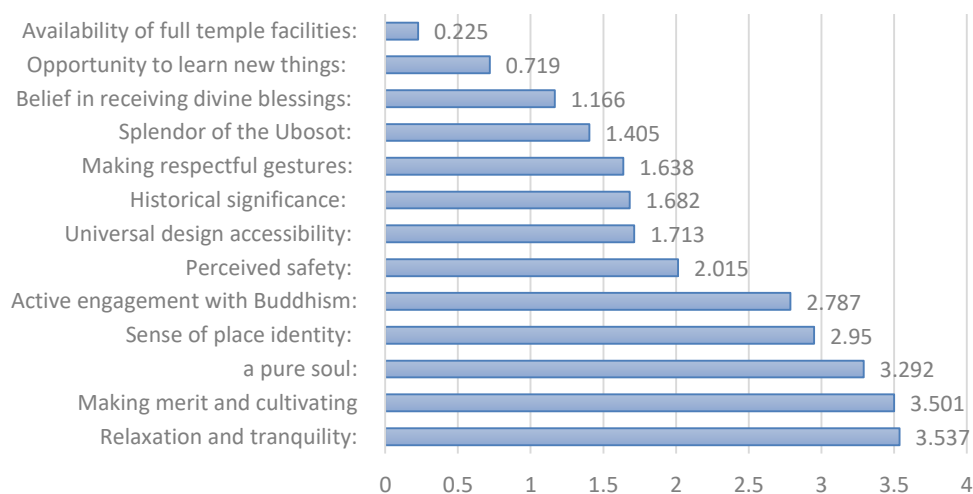
The pull factor data provided includes relative importance scores for various features. The exquisiteness of art and temple culture ( $\bar{x} = 14.669$ ), place identity ( $\bar{x} = 14.381$ ), and temple history ( $\bar{x} = 14.299$ ) have the highest importance scores. These characteristics are thought to be the most influential. Following them are money value ( $\bar{x} = 11.071$ ), sacred place ( $\bar{x} = 10.728$ ), and gorgeous Ubosot ( $\bar{x} = 10.369$ ). Staff hospitality ( $\bar{x} = 5.285$ ), accessibility ( $\bar{x} = 4.611$ ), secure site ( $\bar{x} = 4.006$ ), universal design ( $\bar{x} = 3.783$ ), COVID-19 rules ( $\bar{x} = 3.486$ ), full facility ( $\bar{x} = 2.864$ ), and serene place ( $\bar{x} = 0.448$ ) are all rated relatively low. The importance scores reflect each feature's relative importance in the pull factor data, with higher scores indicating more significance.

## PULL FACTORS



**Figure 1** Pull factor (Source: Researcher, 2023)

## PUSH FACTORS



**Figure 2** Push factor (Source: Researcher, 2023)

The following are the major push factors that motivate visitors to Bangkok's most visited royal temple. For starters, some visitors are drawn to the temple grounds because they want to relax and find tranquility ( $\bar{x} = 3.537$ ). Furthermore, the opportunity to make merit and cultivate a pure soul ( $\bar{x} = 3.501$  and  $\bar{x} = 3.292$ ) serve as motivators for some visitors. The temple's sense of place identity ( $\bar{x} = 2.950$ ) and active engagement with Buddhism ( $\bar{x} = 2.787$ ) contribute to the attraction for some visitors. The temple's perceived safety ( $\bar{x} = 2.015$ ) and universal design accessibility ( $\bar{x} = 1.713$ ) also play a role in influencing visitors to choose this destination. Other, less influential factors include the temple's historical significance ( $\bar{x} = 1.682$ ) and the desire to make respectful gestures within the temple ( $\bar{x} = 1.638$ ). The splendor of the Ubosot ( $\bar{x} = 1.405$ ) and the belief in receiving divine blessings ( $\bar{x} = 1.166$ ) are two other factors that draw visitors to the temple. Factors such as the opportunity to learn new things ( $\bar{x} = 0.719$ ). Finally, the availability of full temple facilities ( $\bar{x} = 0.225$ ) is a less significant push factor for visitors.

### Tree Analysis

Figure 5 shows a decision tree breakdown of push motivation factors for visitors. The overarching factor for the majority (n=653) was making merit, splitting into two branches. The first branch was purifying the mind (n=160). The second, discovering new things (n=493), split further into connecting with divines (n=293) and purifying the mind (n=200). Purifying the mind split again into worship/ blessings (n=125) and family time (n=168). Worship/blessings then split into subgroups (n=39, n=86). Discovering new things split into Buddhism activities (n=113) and relaxing/discovering (n=160). Buddhism activities split again into (n=61, n=52). Relaxing/discovering split into relaxing (n=102) and discovering (n=58), becoming terminal nodes. A subgroup did not consider Buddhism activities (n=47). Additional terminals existed for relaxing (n=27, n=75) and discovering (n=16, n=42).

Figure 6 depicts the primary pull motivation factors influencing visitors using a decision tree. Place identity emerged as the overarching factor of greatest importance, splitting into two sub-branches. The first branch, sacred place (n=269), further split based on an appreciation for the beauty of art and culture (n=131) versus a preference for full facilities (n=138). The art and culture sub-group outpaced those prioritizing facilities (n=37 vs n=101). The second branch considered COVID-19 rules (n=359), splitting by staff friendliness (n=163) and accessibility (n=139). More visitors noted staff friendliness (n=51) than accessibility (n=88). However, a sizeable group (n=196) were not significantly influenced by COVID protocols. Universal design was also a consideration, with some visitors noting its importance (n=107) and others not (n=24).

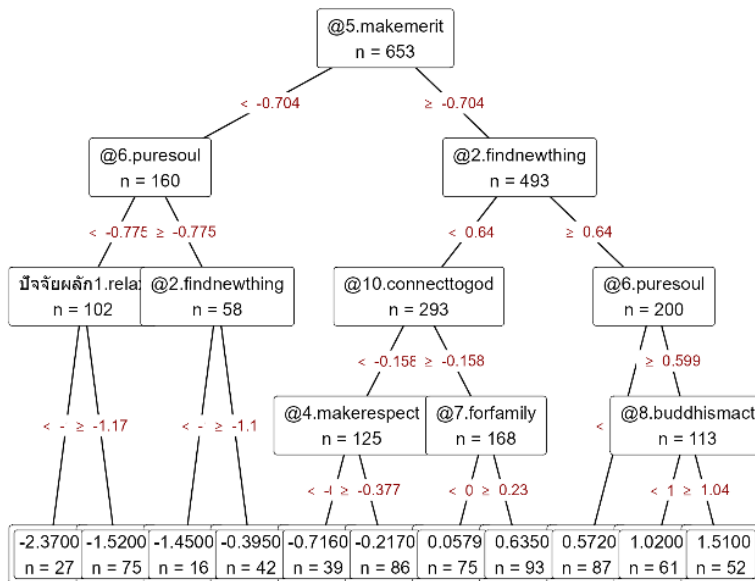


Figure 3 Decision tree plot, Push factor (Source: Researcher, 2023)

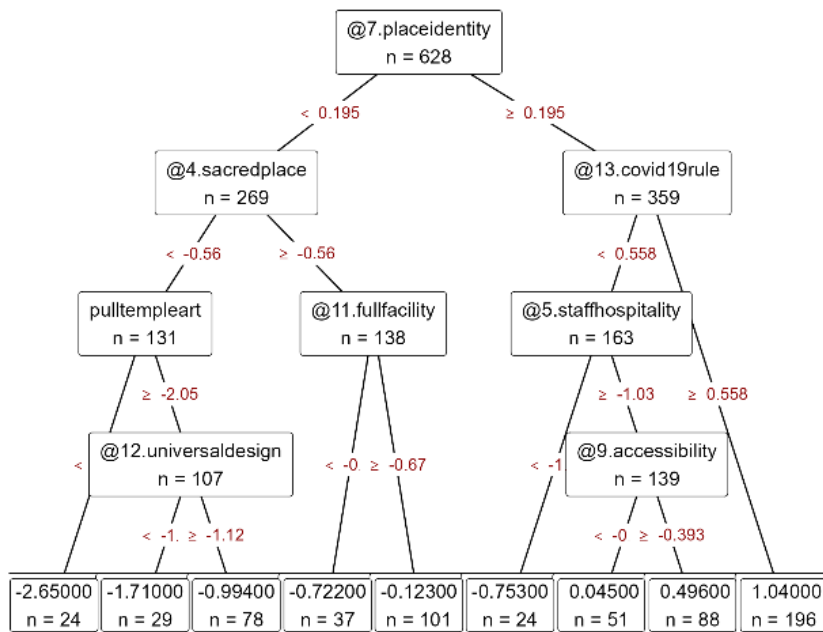


Figure 4 Decision tree plot, Pull factor (Source: Researcher, 2023)

## Discussions

The royal temple in Bangkok attracts visitors for various spiritual, cultural, and experiential reasons. At its core, the sanctuary provides an opportunity for visitors to fulfill spiritual needs through worship, meditation, and connectedness with higher powers (Harrad et al., 2019; Prabnok, 2020). Its peaceful ambiance, created through sacred symbols and spaces for reflection, enhances this experience (Lee et al., 2012). Beyond its spiritual significance, the temple appeals through its architectural splendors, alluring sculptures, and overall serene atmosphere (Singh et al., 2023). Religious activities can positively impact physical and mental well-being by reducing stress (DeRossett et al., 2021). Visitors also value the staff's warm hospitality and service quality, feeling welcomed, comfortable and appreciated (Saengsutho & Supinit, 2016). Further, its COVID safety measures assure community health through precautions like mask-wearing (Sisti et al., 2023). The rich cultural and historical significance is another major draw, as visitors appreciate learning about traditional art forms and historical artifacts that showcase the temple's heritage (Prabnok, 2020). When considering its spiritual, cultural and experiential offerings, alongside value for money, it is not surprising the temple attracts a strong visitor base looking to enrich their travel experience.

### Decision tree

This comprehensive study delved into the motivational forces behind religious tourism by drawing from influential works on push-pull factors and place identity formation (Antara & Prameswari, 2018). Visitor motivations and experiences play a transformative role in shaping identities (Katsikari et al., 2020). Place identity encompasses the socio-cultural and environmental dimensions that religious sites take on due to their historical and cultural significance, and how this contributes to their appeal (Ginting et al., 2022). Sacred sites hold immense educational, cultural, and spiritual value for religious visitors seeking truths, enlightenment, and divine connections (Terzidou et al., 2018). During crises, individuals often turn to faith and sacred locations that symbolize miracles, divinity, and hope (Terzidou et al., 2018). However, the COVID-19 pandemic significantly impacted visits through restrictions and safety protocols (Mróz, 2021).

Visitors experience a profound sense of sacredness through emotional and spiritual connections to the divine, while also engaging with socio-historical narratives (Singh et al., 2023). This research provides strategic guidance by offering deep insights into the psychological and contextual forces that shape spiritual tourism motivations and place attachments.

The friendliness of staff is a crucial factor in shaping visitors' experiences and satisfaction, making it an essential aspect of service quality (Chen et al., 2020). Particularly in the hospitality industry, positive interactions with staff have a significant impact on customer satisfaction (Chen et al., 2020). Sacred sites serve as destinations for religious tourism, offering various rituals and performances that enhance spiritual and cultural immersion. They also attract visitors through art, architecture, and historical significance, catering to both religious and non-religious interests (Aulet & Vidal, 2018). Ensuring accessibility is vital in these sites to accommodate individuals with disabilities and create inclusive spaces. Accessible sacred sites not only meet the specific needs of all individuals but also foster broader cultural and spiritual connections, contributing to spiritual sustainability (Aulet & Duda, 2020). The implementation of universal design principles aims to create inclusive and accessible spaces for worshippers of all abilities, following principles such as equitable use, flexibility, simplicity, perceptible information, and low physical effort (Tsironis, 2022).

Religious tourism has evolved beyond traditional pilgrimage- focused travel to encompass a wider range of activities. Božić et al. (2016) note that contemporary religious tourism includes not only pilgrimages but also visits to religious sites for sightseeing, personal growth, and recreation. In Buddhism, the pursuit of happiness involves understanding the interdependence of all things and reducing suffering. Kittiprapas (2019) explains that this process requires developing right views, cultivating a clear and purified mind, and engaging in self-cultivation practices such as meditation. These practices are not exclusive to monks and nuns but are embraced by all Buddhist practitioners. Dharma, a devotional tradition, holds significance for all Buddhists, and undertaking pilgrimages to sacred sites deepens one's connection and commitment to the teachings (Geary & Shinde, 2021). The physical act of prostration, as mentioned in the Pali Canon, along with meditation practices, serves as a means to purify the body, speech, and mind from negative karma and progress towards enlightenment (Geary & Shinde, 2021).

Research indicates that religious tourism has a positive impact on relaxation and well-being. Engaging in religious visitor activities can calm the mind, alleviate stress, and promote overall health (Behere et al., 2013). Religion and spirituality emphasize meaning and purpose in life, with studies showing that religious affiliation is associated with lower alcohol consumption, anxiety, and self-esteem (Behere et al., 2013). Both public and private religious practices can contribute to maintaining mental health, preventing mental illnesses, and coping with anxiety, fears, frustration, anger, and feelings of inferiority (Moreira-Almeida et al., 2006). Cultural and historically rich destinations play a significant role in religious tourism, allowing visitors to explore new facets and engage their minds. Lopes et al. (2021) suggest that visitors are motivated to learn about the destination's history, culture, and traditions while discovering new dimensions of their faith. Activities with religious relevance strengthen community bonds, reinforce values, and preserve traditions. Ceremonies and customs provide guidance and contribute to spiritual well-being (Antara & Prameswari, 2018), fostering stronger devotion and belief systems among followers.

Throughout history, people have had a strong desire to connect with the divine and show reverence to their gods, saints, prophets, and deceased loved ones. According to Martin (2021), individuals hold diverse conceptual beliefs about the divine, encompassing its existence, nature, involvement in human affairs, and the potential for communication. Research suggests that people may interpret certain events as divine messages, such as spontaneous thoughts, significant life events, and acts of kindness from others (Wilt et al., 2021). In times of seeking help or after experiencing loss, individuals may be inclined to seek divine messages or reassurance, often considering supernatural explanations (Rahtz et al., 2021).

In Buddhism, the focus lies on cause-and-effect relationships and the law of karma, rather than concepts of blessings or divine favor. As explained by Tanaka (2018), Buddhists believe that every action carries consequences, and the effects of our actions determine our future experiences. However, many Buddhists still engage with sacred objects and places to fulfill their desires, reflecting the syncretism of local traditions with influences from ancient Indus Valley civilization, Brahmin, and Vedic cultures. Buddhist worship, aimed at improving one's self-image, is associated with religiosity, considering the inherent human inclination towards fulfillment (Mair & Blofeld, 2006).

Undertaking a pilgrimage as a family creates enduring memories and strengthens one's connection to their faith (Trono et al., 2021). It provides an opportunity for spiritual growth and reinforces familial bonds (Tsironis, 2022). Traveling together to religious sites reinforces shared values and beliefs, contributing to a heightened sense of family identity. Prior research suggests that conducting research on religious sites before the trip enhances the educational

aspect of the experience (Trono et al., 2021). Religious tourism, including pilgrimage, holds a rich historical background and represents one of the earliest forms of tourism, with religious motives being the oldest form of non-economic travel. Researchers have explored the motivations, expectations, and contributions of religious tourism, shedding light on various concepts within this domain (Rybina et al., 2021). Therefore, religious tourism continues to shape cultural experiences, spirituality, and personal growth for individuals and communities alike.

## Conclusion and suggestions

The results of regression tree showed that the model performed well in the pull factor evaluation,  $MSE = 0.048$ ,  $RMSE = 0.219$ ,  $MAE = 0.170$ , and  $MAPE = 0.952$ , and  $R^2 = 0.952$ . The push factor, the results showed  $MSE = 0.040$ ,  $RMSE = 0.20$ ,  $MAE = 0.157$ ,  $MAPE = 44.08\%$ , and  $R^2 = 0.962$ . Overall, the model's performance is reasonable and supports its use in various business and economics applications.

The pull motive components grouped into eight distinct nodes. The pull factor relating to the place's identity is the highest importance for visitors, followed by sacred sites and COVID-19 guidelines. Staff friendliness and accessibility are other essential considerations. The splendor of arts and culture, as well as complete facilities, can be found at the sacred place. Consider the universal design pull factor as well. Push factor components are organized into ten distinct nodes. The motivating element associated to alms-giving was the highest priority, followed by spiritual purification and discovery. There is also a discovery something new. connection with God and mental purification. Pay your respects to the Buddha while spending time with family or relatives. Some visitors consider participating in religious activities and purification of their minds. Therefore, to relax and discover new things.

### Theoretical Implication

The implications drawn from this study bear significant theoretical relevance for government agencies, tourism organisations, and the management of the temple. The identified pull motives, categorised into eight distinct groups, underscore the pivotal role of a destination's identity in attracting visitors. This suggests that visitors are primarily drawn to the destination's unique characteristics and cultural significance. The presence of sacred sites and adherence to COVID-19 guidelines also hold considerable importance for visitors. Additionally, factors such as staff friendliness and accessibility contribute to the overall allure of the destination. The study further reveals that the aesthetic richness of arts and culture, coupled with the availability of comprehensive facilities, contributes to the attraction of visitors to the sacred place. Notably, the study advocates for the consideration of universal design principles, emphasising inclusivity and accessibility for individuals with diverse needs. On the other hand, the identified push motives, organised into ten distinct categories, highlight the foremost motivating factor as almsgiving. This suggests that visitors are primarily motivated by the desire to engage in acts of generosity and contribute to the well-being of others. Strong motivating factors also include spiritual purification and the opportunity for discovery. Visitors express a desire to explore and learn new things, establish a connection with God, and undergo mental purification. Paying respects to the Buddha while spending time with family or relatives is considered important by some visitors. Engaging in religious activities and seeking mental purification are also mentioned as motivations. Ultimately, visitors aspire to relax and derive meaningful experiences while discovering new aspects of themselves and the world around them.

### **Practical Implication**

The study highlights the importance of focusing on the unique aspects of religious sites to establish a compelling identity that attracts visitors. Understanding the factors that shape place identity, such as history, culture, and engaging interactions, can guide the creation of products and marketing strategies for the temple or relevant tourism organisations.

Investing in the preservation, promotion, and accessibility of significant landmarks can enhance the appeal of religious tourist destinations. Government agencies and tourism organisations play a crucial role in coordinating these efforts.

Incorporating sacred sites into offerings and ensuring health and safety practices during the COVID-19 pandemic are essential for building trust among potential visitors. Government agencies, tourism organisations, and temple management should work together to implement and communicate these measures effectively.

Providing exceptional customer service and accessibility for individuals with impairments are critical aspects that should be prioritized by government agencies, tourism organizations, and temple management to shape visitor experiences and satisfaction.

The study also provides practical guidance for religious tourism by recommending the promotion of merit-making opportunities and the incorporation of Dharma practices for personal development. Government agencies and tourism organisations can support and promote these initiatives.

Preserving sacred sites, maintaining cleanliness and serenity, and providing information about their value require coordinated efforts from the temple and tourism organisations.

Collaborating with healthcare professionals to offer wellness programmes, such as meditation retreats and mindfulness seminars, can enhance mental and physical well-being. This initiative involves the temple, tourism organisations, and healthcare experts working together.

### **New knowledge and the effects on society and communities**

The research findings shed light on the first-class royal temple's strong sense of place identity and its active participation in Buddhism, aligning seamlessly with the broader context of religious tourism and the push-pull factor framework. These aspects have a significant impact on the Thai temple's soft power, influencing visitors' perceptions and choices. The temple's well-established place identity emerges as a crucial factor in visitors' decision-making processes, as it fulfils their spiritual and cultural expectations. Active engagement with Buddhism reflects intrinsic motivations, which align with the concept of push factors in the tourism industry.

Additionally, the research indicates that visitors are greatly influenced by the temple's perceived safety, universal design accessibility, and diverse learning opportunities. These elements demonstrate the complex interaction of push and pull factors, contributing to the overall attractiveness of religious destinations. From a policy standpoint, strategically promoting the temple's unique characteristics, for example, its cultural heritage, universal design accessibility, and educational offerings, can enhance the visitor experience and support sustainable development initiatives. This approach allows policymakers and stakeholders to leverage the temple's soft power, capitalising on the growing interest in religious tourism for the benefit of local communities and economies. Furthermore, the research underscores the importance of understanding the diverse motivations that underlie religious tourism, encompassing both spiritual and secular interests.

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## The Effects of Persuasive Message Reading and Supportive Writing on Juveniles' Readiness for Protective and Evasive Actions against Domestic Violence in the Community

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### Abstract

Domestic violence has physical and psychological impacts, as well as a negative effect on the well-being of juveniles in the family. Hence, this experimental research explored the interaction between persuasive message reading, supportive writing, types of punishment, as well as well-being and the juveniles' readiness for protective and evasive actions against domestic violence in the community. The research was based on a Post Test Only with Control Group Design, dividing into 4 experimental groups with random assignment. The sample was 450 juveniles in Northern communities within 3 provinces including Lamphun, Lampang, and Nan. The research instruments in this research consist of the articles of 1) persuasive message on "the readiness for protective and evasive actions against domestic violence" and 2) control message on "the importance of English learning" the worksheets of 1) supportive writing on "the readiness for protective and evasive actions against domestic violence" and 2) control writing on "the importance of English learning" the assessment on 1) types of punishment, 2) well-being, 3) the readiness for protective and evasive actions against domestic violence, and 4) biosocial background. For the 10-item well-being assessment, the range of t value = 4.27-7.39, the range of r value = 0.34-0.67, and reliability = 0.78. For the 15-item assessment on the readiness for protective and evasive actions against domestic violence, the range of t value = 5.32-9.21, the range of r value = 0.28-0.56, and reliability = 0.81.

The findings revealed that 1) the juveniles who read persuasive messages, were physically punished, and rarely had a sense of well-being were readier to perform protective and evasive actions against domestic violence than the juveniles who did not read persuasive messages, were psychologically punished, and had a sense of well-being. This was mostly found among the juveniles who spent a lot of time with their families. 2) The juveniles who wrote supportive writing and rarely had a sense of well-being were readier to perform protective and evasive actions against domestic violence than the juveniles who did not write supportive writing and had a sense of well-being. This was mostly found among the juveniles who consulted other people. The results led to suggestions and practices to develop and encourage juveniles' readiness for protective and evasive actions against domestic violence in the future.

**Keywords:** Message reading, Supportive writing, Domestic violence, Community, Juveniles

## Introduction

A family is a major institution to refine and improve family members. The family institution requires to be strong and able to effectively take care of the members within the family. Globally, there are many issues and obstacles to strengthening a family, such as poverty, education problems, readiness problem, and, especially, violence (Scott, 2015). Thailand has recognized the importance of the family institution, as shown in the 12th National Economic and Social Development Plan which aims for well-being. Families play an important role in cultivating their children to grow into high-quality citizens. (Office of the National Economic and Social Development, 2018)

According to the survey research of the National Human Rights Commission (2020), males usually committed violent acts while females were the victims. Over half of the violence acts (64%) were physical abuse, followed by psychological abuse (32%) and sexual abuse (4%). The causes were drug addiction, alcoholism, gamble, and stress over economic situations due to Covid-19. The majority of the violence (88%) is domestic violence (Ministry of Social Development and Human Security, 2021).

Therefore, juveniles should protect themselves against and avoid domestic violence which results from economic, social, and political issues, whether it is physical or psychological abuse. To prevent the affects of violent acts on juveniles, every department and sector should integrate families, schools, temples, and communities into the process of taking care of, helping, and protecting juveniles because domestic violence is not a problem of a certain family. It is every sector's responsibility to care for and be aware of its future effects on the juveniles in the community. They need to prevent domestic violence against juveniles by understanding the context and violence records of each family, parents' stress, the relationship in the family, and the communication among family members (Wacharasin et al., 2018).

To effectively and appropriately solve domestic violence, persuasive messages and supportive writing (Bhanthumnavin, 1988) are beneficial to juveniles while the types of punishment and well-being are significant indicators of the protective and evasive acts against domestic violence.

## Objective

The research is to study the interaction between persuasive message reading, supportive writing, types of punishment, as well as well-being and the juveniles' readiness for protective and evasive actions against domestic violence in the community.

## Literature Review

### The readiness for protective and evasive actions against domestic violence

Academicians such as (Good, 1973) defined readiness as the ability to act based on maturity, experience, and emotions; therefore, readiness is about enabling people to perform a certain activity. (Thatcher, 1970) mentioned that readiness is the state or quality of preparation resulting from arrangement, aptitude, satisfaction, and enthusiasm while (Lefrancois, 1988) explained that readiness is physical qualifications, wisdom maturity, foundational knowledge, experience, or motivational state. Moreover, (Downing & Thackrey, 1971) divided readiness into 4 components: 1) physical components, 2) intellectual components, 3) emotional, motivational, and characteristic components, and 4) environmental components. The protective and evasive actions against domestic violence breaks down into 5 components: 1) protective

actions against the violence caused by social conditions, 2) protective actions against the violence caused by economic conditions, 3) protective actions against the violence caused by social media, 4) evasive actions against the violence caused by addiction, and 5) evasive actions against the violence caused by lifestyle. All in all, readiness for protective and evasive actions against domestic violence refers to the actions or practices to protect oneself against domestic violence and the choice of performing or not performing domestic violence behaviors.

### **Persuasive message reading and supportive writing**

Persuasive message is a method to change personal attitudes through articles, words, or media that can convince the person so that the person will integrate the obtained knowledge into their feelings, leading to the change in attitudes. And readiness is an element of attitude (Wiboonsawat, 1985). Persuasion can be divided into 2 parts: comforting message and threatening message. Comforting messages contain only beneficial contents whereas threatening messages indicate the disadvantages of not doing something (Bhanthumnavin, 1988). Lastly, supportive writing involves noting down advantages or benefits of the readiness for protective and evasive actions against domestic violence.

### **Well-being**

Well-being refers to the acceptance of the conditions of life in various dimensions under the current circumstance ( Promphakping, 2012; Jongudomkarn, 2018) . Additionally, academicians defined well-being as the desired family conditions where every member live together with purposes, play their roles well, have a good relationship, are self-dependent, can adapt to the changing society, and contribute to the society (Kotchabhakdi et al., 2001). Hence, well-being is a desirable state. Kotchabhakdi et al. (2002) studied and summarized that the indices of well-being in terms of family life contain 5 elements: 1) the components and types of family, 2) roles, 3) relationship, 4) self-dependence, and 5) social contribution. Phuphaibul et al. (2019) stated that family well-being consists of 9 aspects: 1) relationship, 2) roles, 3) economy, 4) self-sufficient lifestyle, 5) unity and safety in the community, 6) spiritual development, 7) healthcare, 8) education, and 9) security and dependency.

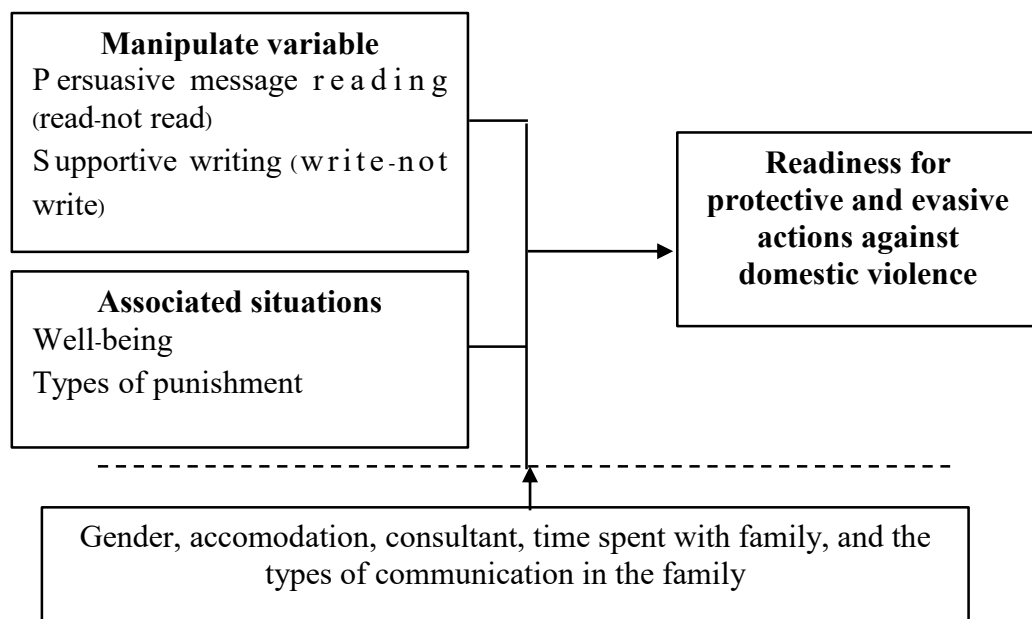
### **Types of punishment**

Academicians classified different types of punishment. For example, Bhanthumnavin (1981) categorized punishment into 2 types: 1) physical punishment which is the abuse of physical power to punish and hurt someone physically by pinching, slapping, hitting, kicking, etc. while using few or none of verbal reprimand and 2) psychological punishment which involves verbal reprimand, negligence, apathy, denial of some privileges, or threat. Chantharasakul & Keartibutra (1987) divided punishment into 1) a punishment through negative stimuli when someone exhibits undesirable behaviors and 2) a punishment through a denial of the existing positive reinforcement when someone displays undesirable behaviors. In addition, Iamsupasit (2000) stated that there are several techniques and methods of punishment: 1) physical abuse such as hitting, 2) reprimand through words or sentence to stop a certain action, such as “don’ t”, “stop”, and “don’ t do it”, 3) time out which refers to the denial of positive reinforcement, 4) fining, and 5) overcorrection. There are also many types of punishment to juveniles such as lashing, probation, study suspension, verbal warning, transfer to new school, cutting marks, termination of student status, standing in front of flagpole, and doing activity for behavioral adjustment (Phisitsakulchai et al., 2022)

Figure 1 presents the conceptual framework of this study. Based on the literature review, the researchers have developed the research hypotheses as follows:

H1: The juveniles who read persuasive messages, were physically punished, and rarely had a sense of well-being were more ready to perform protective and evasive actions against domestic violence than the juveniles who did not read persuasive messages, were psychologically punished, and had a sense of well-being.

H2: The juveniles who wrote supportive writing and rarely had a sense of well-being were more ready to perform protective and evasive actions against domestic violence than the juveniles who did not write supportive writing and had a sense of well-being.



**Figure 1** The Conceptual Framework for the Study (Source: Researcher, 2023)

## Methodology

### Sample

The sample in this research is as follows: 1) 151 juveniles in Tha Pla Duk and Tha Sop Sao Subdistricts, Mae Tha District, Lamphun, 2) 160 juveniles in Hang Chat and Nong Lom Subdistricts, Hang Chat District, Lampang, and 3) 139 juveniles in Nongdang and Nam Phang Subdistricts, Mae Charim District, Nan. Among them, there are 172 males (38.20 percent) and 278 females (61.80 percent). 344 participants (76.40 percent) live with their fathers/mothers and 106 (23.60 percent) live with other people. 243 participants (54.00 percent) consult their fathers/mothers and 207 (46.00 percent) consult other people. 314 participants (69.80 percent) spend less time with family and 136 (30.20 percent) spend more time with family. 336 participants (74.70 percent) communicate with reasoning and 114 (25.30 percent) communicate with emotions.

**Table 1** The Sample Size for the Study

Province	District	Subdistrict	Size
Lamphun	Mae Tha	Tha Pla Duk	78
		Tha Sop Sao	73
Lampang	Hang Chat	Hang Chat	86
		Nong Lom	74
Nan	Mae Charim	Nongdang	87
		Nam Phang	52
<b>Total</b>			<b>450</b>

### Research Design

Quasi-experimental research by post-test only with control group design was conducted (Campbell & Stanley, 1963) and divided the juveniles into 4 groups via random assignment in which the characteristics and ages of the members were close and the districts and communities they lived in where similar. In this way, the experimental and control groups would be characteristically the same. The randomization was performed by counting; the researcher counted the numbers 1, 2, 3, and 4. Then, the participants assigned as 1 were to read persuasive message and write supportive writing. The participants assigned as 2 were to read control message and write supportive writing. The participants assigned as 3 were to read persuasive message and write control writing. The participants assigned as 4 were to read control message and write control writing.

### Experimental Process

When the juveniles were seated, the researcher distributed the arranged assessment row by row. There were 4 sets of assessment (Table 1) based on 4 groups of participants. They were arranged and ordered as (1, 2, 3, 4, 1, 2, 3, 4,...). For this research, the researcher conducted the experiment with the samples for one manipulate variable.

In group 1, 120 juveniles received Assessment 1 containing manipulate variables which are persuasive message reading on “the readiness for protective and evasive actions against domestic violence” and supportive writing on “the readiness for protective and evasive actions against domestic violence” (100 percent).

In group 2, 114 juveniles received Assessment 2 containing manipulate variables which are control message reading on “the importance of English learning” and supportive

writing on “the readiness for protective and evasive actions against domestic violence” (50 percent).

In group 3, 108 juveniles received Assessment 3 containing manipulate variables which are persuasive message reading on “the readiness for protective and evasive actions against domestic violence” and control writing on “the importance of English learning” (50 percent).

In group 4, 108 juveniles received Assessment 4 containing manipulate variables which are control message reading on “the importance of English learning” and control writing on “the importance of English learning” (0 percent).

**Table 2** Research design

Group	N	Random Assignment	Persuasive message reading	Supportive writing	Control message reading	Control writing	Action examination	Assessment on biosocial factors and associated situations
Group 1	120	√	√	√	x	x	√	√
Group 2	114	√	x	√	√	x	√	√
Group 3	108	√	√	x	x	√	√	√
Group 4	108	√	x	x	√	√	√	√

### Research Instrument

The research instruments in this research consist of the articles of 1) persuasive message on “the readiness for protective and evasive actions against domestic violence” and 2) control message on “the importance of English learning”

the worksheets of 1) supportive writing on “the readiness for protective and evasive actions against domestic violence” and 2) control writing on “the importance of English learning”

the assessment on 1) types of punishment, 2) well-being, 3) the readiness for protective and evasive actions against domestic violence, and 4) biosocial background.

### Quality of Research Instrument

The articles of persuasive message and control message, the worksheets of supportive writing and control writing, types of punishment, and biosocial background were examined for content validity. The experts in the fields of community development and behavioral sciences were asked to validate whether the instruments used in this research covered the topics of the study and contained the content specified by the operational definition of the variables. They also checked the suitability of the language usage so that the researcher can improve the assessment before distributing it for data collection. For the assessment on well-being and the readiness for protective and evasive actions against domestic violence, the quality analysis for each item was performed through 2 types of statistical analyses. 1) The analysis of Item Discrimination was applied with Independent Sample t-test to identify the t-ratio based on the 30% technique. The items would be selected if the t value was at least 2.00. 2) The analysis of the correlation coefficients between the score per item and the total score without the item was also performed based on the criterion that the r value must be over .20, and then the confirmatory factor analysis was carried out.

For the 10-item well-being assessment, the range of t value = 4.27-7.39, the range of r value = 0.34-0.67, and reliability = 0.78. The confirmatory factor analysis revealed that Chi-square= 42.54, df= 29.20, p-value= 0.34, RMSEA= 0.04, CFI= 0.96, and GFI= 0.97.

For the 15-item assessment on the readiness for protective and evasive actions against domestic violence, the range of t value = 5.32-9.21, the range of r value = 0.28-0.56, and reliability = 0.81. The confirmatory factor analysis revealed that Chi-square= 67.31, df= 33.18, p-value= 0.12, RMSEA= 0.05, CFI= 0.97, and GFI= 0.97.

### **Ethical Considerations**

This research was approved by the Ethical Committee of the Uttaradit Rajabhat University, Thailand on June 25, 2021 (URU-REC No. 037/64)

### **Results**

The data were analyzed with three-ways ANOVA. When the interaction between independent variables were found, the means of each pair were compared through Scheffé's method. The data analysis was performed on both the entire sample group and subgroups:

H1: The juveniles who read persuasive messages, were physically punished, and rarely had a sense of well-being were readier to perform protective and evasive actions against domestic violence than the juveniles who did not read persuasive messages, were psychologically punished, and had a sense of well-being.

**Table 3** the result of three-ways ANOVA on the readiness for protective and evasive actions against domestic violence based on persuasive reading message, types of punishment, and juveniles' well-being

Group	N	F value display						
		Persuasive message reading (A)	Types of punishment (B)	Well-being (C)	(A)x(B)	(A)x(C)	(B)x(C)	(A)x(B)x(C)
Total	450	.872	.036	23.008***	16.163***	.188	.435	.021
Male	172	3.717	.053	16.033***	.302	1.048	2.273	.225
Female	278	.095	.804	10.391**	17.361***	.602	.056	.034
Lived with their fathers/mothers	344	.338	.102	20.035***	16.681***	.335	.000	.022
Lived with other people	106	.846	.774	2.819	.955	.002	.796	.025
Consulted fathers/mothers	243	.420	.327	9.792**	4.803*	.093	.043	.224
Consulted other people	207	.477	.608	12.532***	11.619**	.036	.215	.302
Spent less time with family	314	.790	.052	21.298***	6.348	3.149	1.687	1.966
Spent more time with family	136	8.085**	.158	6.481*	15.499***	4.464*	.367	5.734*
Communicated with reasoning	336	.014	.136	18.342***	12.270**	.230	.380	.067
Communicated with emotions	114	4.613*	.251	2.812	8.546**	4.058*	1.529	.043

Note: \* p&lt;.05; \*\* p&lt;.01; \*\*\* p&lt;.001

**Table 4** The result from the comparison of the means of the readiness for protective and evasive actions against domestic violence based on persuasive message reading, types of punishment, and well-being of the juveniles who spent more time with family

Persuasive message reading	Types of punishment	Well-being	N	Code	Mean	112	221	211	212	122	111	121
Not read	Psychologically	Low	24	222	78.96	1.13	4.11	4.76**	7.83**	8.46**	8.85**	11.90**
Read	Physically	Low	18	112	77.83		2.98	3.63	6.70**	7.33**	7.72**	10.77**
Not read	Psychologically	High	39	221	74.85			0.65	3.72	4.35	4.74**	7.79**
Not read	Physically	High	10	211	74.20				3.07	3.70	4.09	7.14**
Not read	Physically	Low	8	212	71.13					0.63	1.02	4.07
Read	Psychologically	Low	12	122	70.50						0.39	3.44
Read	Physically	High	9	111	70.11							3.05
Read	Psychologically	High	16	121	67.06							

Note: persuasive message reading 1=read 2=not read, types of punishment 1= Physically 2= Psychologically, well-being 1=high 2=low

The analysis indicated that the readiness for protective and evasive actions against domestic violence varied based in the three-way interaction between persuasive message reading, types of punishment, and well-being (Table 2). The result was found in the following subgroup: juveniles who spent more time with family. The comparison of the means of each pair through Scheffe's method (Table 3) revealed the important results that 1) the juveniles who were physically punished, rarely had a sense of well-being, and read persuasive messages were more ready to perform protective and evasive actions against domestic violence than the juveniles who did not read persuasive messages; 2) the juveniles who read persuasive messages, rarely had a sense of well-being, and were physically punished were more ready to perform protective and evasive actions against domestic violence than the juveniles who were psychologically punished; and 3) the juveniles who read persuasive messages, were physically punished, and rarely had a sense of well-being were more ready to perform protective and evasive actions against domestic violence than the juveniles who had a sense of well-being.

H2: The juveniles who wrote supportive writing and rarely had a sense of well-being were readier to perform protective and evasive actions against domestic violence than the juveniles who did not write supportive writing and had a sense of well-being.

**Table 5** The result of three-ways ANOVA on the readiness for protective and evasive actions against domestic violence based on supportive writing, types of punishment, and juveniles' well-being

Group	N	F value display						
		Supportive writing (A)	Types of punishment (B)	Well-being (C)	(A)x(B)	(A)x(C)	(B)x(C)	(A)x(B)x(C)
Total	450	8.531**	4.740*	6.967**	1.624	.343	.002	.259
Male	172	3.592	2.917	9.316**	1.877	.002	1.160	.010
Female	278	.615	.564	11.395**	.092	.150	.043	.012
Lived with their fathers/mothers	344	.000	.138	5.441*	.403	.121	.222	.414
Lived with other people	106	6.341*	3.935*	2.162	.916	.005	.691	.145
Consulted fathers/mothers	243	1.355	.035	7.730**	.029	1.941	1.178	1.175
Consulted other people	207	6.006*	5.829*	1.683	.854	4.272*	.815	1.800
Spent less time with family	314	4.529*	1.403	4.414*	.115	.496	.003	1.237
Spent more time with family	136	9.447**	4.971*	3.899*	4.951*	.738	1.588	.024
Communicated with reasoning	336	.592	.077	9.017**	.002	.996	1.630	.445
Communicated with emotions	114	13.893***	.261	.248	.374	7.869**	.418	1.105

Note: \* p<.05; \*\* p<.01; \*\*\* p<.001

**Table 6** The result from the comparison of the means of the readiness for protective and evasive actions against domestic violence based on supportive writing and well-being of the juveniles who consulted other people

Supportive writing	Well-being	N	Code	Mean	22	21	11
Write	Low	55	12	75.05	3.11**	4.42**	4.95**
Not write	Low	33	22	71.94		1.31	1.84
Not write	High	67	21	70.63			0.53
Write	High	52	11	70.10			

Note: supportive writing 1=write 2=not write, well-being 1=high 2=low

The analysis pointed out that the readiness for protective and evasive actions against domestic violence did not vary based on the three-way interaction between supportive writing, types of punishment, and well-being (Table 4), but it varied based on the two-way interaction between supportive writing and types of punishment. This result was found in the following subgroup: juveniles who consulted other people. The comparison of the means of each pair through Scheffe's method (Table 5) showed the significant results that 1) the juveniles who

rarely had a sense of well-being and wrote supportive writing were more ready to perform protective and evasive actions against domestic violence than the juveniles who did not write supportive writing and 2) the juveniles who wrote supportive writing and rarely had a sense of well-being were more ready to perform protective and evasive actions against domestic violence than the juveniles who had a sense of well-being. Furthermore, the readiness for protective and evasive actions against domestic violence varied based on the one-way interaction as follows: 1) the juveniles who wrote supportive writing were more ready to perform protective and evasive actions against domestic violence than the juveniles who did not write supportive writing and 2) the juveniles who were psychologically punished were more ready to perform protective and evasive actions against domestic violence than the juveniles who were physically punished.

## Discussions

The result of three-ways ANOVA on the readiness for protective and evasive actions against domestic violence based on persuasive reading message, types of punishment, and juveniles' well-being together with the result of three-ways ANOVA on the readiness for protective and evasive actions against domestic violence based on supportive writing, types of punishment, and juveniles' well-being are consistent with the concept and research which stated that persuasive reading message can alter attitudes through the changes in beliefs, values, and attitudes. The message gave new suitable information, resulting in learning process and response to the persuasion (Bhanthumnavin, 1988). It is also in line with the research of (Khongyingyai et al., 2021) which proposed that persuasive message reading had a positive impact on the readiness to acquire knowledge in order to prepare to be healthy elders and that the student who read persuasive message, wrote supportive writing, and had more indirect experience were more ready to acquire knowledge than the students who did not do those activities. This accords with the research of (Vasavanon, 2020) which demonstrated that the students who read persuasive message displayed positive attitude toward the assistance of the elderly and that the students who read persuasive message thought positively and were readier to support other people to take care of the elderly than the students who did not do the activity. The result is in accordance with the research of (Carfora & Catellant, 2021) which found that the evaluation of supportive message on exercise behaviors had a positive relationship with attitudes and intention.

Additionally, the research of (Chumnanphuttiophon et al., 2017) indicated that the variable like the witness of domestic violence can predict 87.00 percent of the violence behaviors. The research of Sripa & Ninpet (2020) found that family had a significance impact on the violent actions of children and juveniles. This is in line with (Krajangsaeng et al., 2018) who revealed that the influence of family institution can affect the violence behaviors. It is also consistent with the research of (Doungsuwan et al., 2022) which showed that domestic violence against children and juveniles consisted of 1) physical violence, 2) psychological violence, and 3) negligence/abandonment which affected physical and psychological health. The research of Wacharasin et al. (2018) pointed out that the factors like verbal domestic violence, domestic fight, and parents' stress had an association with domestic violence while the factors like family relationship and the communication in the family had an opposite association with domestic violence.

## Conclusion and suggestions

In conclusion, this experimental research aims to study the interaction between persuasive message reading, supportive writing, types of punishment, and well-being and the readiness for protective and evasive actions against domestic violence. 1) the juveniles who read persuasive messages were readier to perform protective and evasive actions against domestic violence than the juveniles who did not read persuasive messages while the juveniles who rarely had a sense of well-being were readier to perform protective and evasive actions against domestic violence than the juveniles who had a sense of well-being. 2) The juveniles who wrote supportive writing were readier to perform protective and evasive actions against domestic violence than the juveniles who did not write supportive writing while the juveniles who were psychologically punished were readier to perform protective and evasive actions against domestic violence than the juveniles who the juveniles who were physically punished. And the juveniles who rarely had a sense of well-being were readier to perform protective and evasive actions against domestic violence than the juveniles who had a sense of well-being. These results were found among the juveniles who spent more time with family, juveniles who consulted other people, and juveniles in the families that communicated with emotions, respectively. It supports hypotheses H1 and H2.

## New knowledge and the effects on society and communities

1) The findings present the impact of persuasive message on the juveniles' readiness for protective and evasive actions against domestic violence. Juveniles should be encouraged to protect themselves against and avoid domestic violence. Through the articles that the researcher created for persuasive message reading and supportive writing, juveniles will be developed into quality citizens who are capable, moral, and happy. Juveniles will also feel loved when they stay with their non-violent family. Government agencies, municipal organizations, Subdistrict Administrative Organization, schools, and community networks can apply precise, simple, and short persuasive message into the solutions for domestic violence. They can apply the message into creative media such as multimedia, infographic, and motion graphic as well in order to reach the target audience and motivate them to recognize the importance of the readiness for protective and evasive actions against domestic violence.

2) The findings show that types of punishment and well-being are a refinement process starting with family. To prevent violence, family should punish in a suitable and correct way in order to avoid physical and psychological consequences and maintain close-knit relationship in the family. Therefore, local government agencies, such as municipal organizations and Subdistrict Administrative Organization, should provide knowledge, legislation knowledge, a psychological advice to parents, as well as teaching and advising juveniles to be ready to protect themselves against and avoid domestic violence strictly.

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## "Tai Muang Phrao" Cultural Identity and Economic Value Creation of Tambon Pa Tum, Phrao district, Chiang Mai Province

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### Abstract

The objectives of this research were to examine identities regarded as local wisdom and cultural capital of Pa Tum Community in Phrao district, Chiang Mai province, to create a corporate identity set and sale promotion media for the community, and to assess the satisfaction of consumers with community products, the corporate identify set, and the sale promotion media. The research instrument: for the first objective, it was qualitative research to collect the data about community identities. The quota sampling method was applied to select the sample group, which included two community leaders, two folk scholars, four entrepreneurs, five community members, and two concerned state officials. An in-depth interview was used to collect the data and the SWOT Analysis. For the second objective, it was applied research, the process of applied art design, and modern marketing knowledge. The purposive sampling method was used to select the population and the sample group, which included one of the five community entrepreneur groups. An in-depth interview with semi-structured interview questions and an observation were used to gather the data. The data were then synthesized for creating the corporate identity set and the sale promotion media. The instrument was a quality assessment of the identity set by three experts on the beauty of the logo, colors, fonts, and other design components. The Cronbach's alpha coefficient was applied to assess the quality of the instrument. For the third was also conducted a satisfaction assessment with the reliability of the questionnaire at 0.96 by applying the Cronbach's alpha coefficient. The sample group was 100 tourists and the general public interested in the community products. The data were statistically analyzed for mean, percentage, and standard deviation. The results were discussed descriptively. The research results revealed that the food identity of the community is from cultivating sugarcanes and beans and the process of agricultural produce, which has led to the development of the community products: peanut bars in sugarcane molasses and local dishes for community tourism. The creation of the corporate identity set and the sale promotion media consisted of a product logo, packaging, 2D motion media, and video media for publicizing the products in various channels. The satisfaction assessment revealed that the satisfaction was highest with the mean of 4.6 on the continued development of local wisdom to produce value-added products and generate incomes to community members. It was followed by the satisfaction with the product logo designed with interesting and easy-to-understand images and conveying the products, community identity and entrepreneurs; with the graphic work on the packages designed with beautiful, interesting and clear messages; and with the graphic motions on the making of the blocked sugarcane molasses and the processing of the peanut bars in sugarcane molasses designed with interesting and easy-

to-understand background of the products as well as clear sound and images, all of them with the mean of 4.5. In addition to business knowledge for community product development, developers and corporate identity communication must depend on creativity. Therefore, researchers collaborating with communities must emphasize creativity as well. It is not only new knowledge or innovation, but local culture, wisdom, and cultural identities must be exploited for economic values. For community product development to become sustainable, community cooperation must be established, because community residents are the ones who will continue the operations. As a consequence, researchers must coordinate and seek key successes, which may be community residents of working age or new generations who will pass on and preserve culture and arts, wisdom, and identities.

**Keywords:** Corporate identity, Cultural identity, Value addition, Tai ethnic group

## Introduction

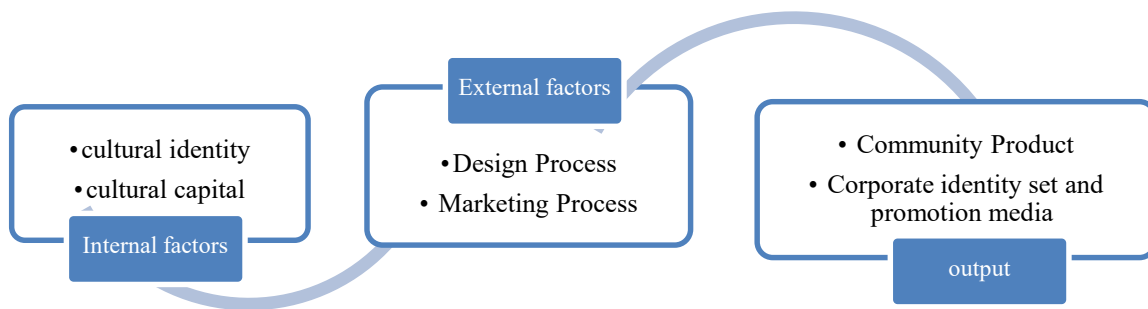
At present, the government attaches great importance to the basic economic development of the country, especially in creating employment and creating employment. Creating income for the people to improve their well-being and quality of life. One of these measures or policies is: Support and continue to implement a Tambon One Product Project (OTOP) implemented from 2003 to present, In order for the project to continue effectively, the community should acquire modern knowledge and funding sources. And improve production management and marketing capabilities. This is the development of the national economy, by turning its focus to the grassroots economy with focus on basic economy or community commercial units. Utilize community potential, community wisdom, or community capital, such as culture, tradition, terrain and diversity, to create growth internally. To carry out various economic activities Whether it is production, consumption, distribution that people in the local community can participate in thinking and doing together to receive the benefits together. (Community Development Department, Ministry of Interior, Thailand, 2019)

Pa Tum Don Village in Tambon Pa Tum, Phrao district, Chiang Mai province is a Tai Yai village with unique cultural identities different from those of Lanna people in the province and in the northern region. Most of the residents are the Tai Yai ethnic group, known locally as the Tai. There migrated from highland like Lawa and Tai Yai. The life style of these Tai Yai villages is mostly concerned with farming, cultivating rice, beans, and sugarcanes. An important processed product of the villagers is derived from sugarcanes, which is blocked solid sugarcane molasses. The product has brought fame and income to the villagers. Additionally, agricultural produce has been processed as products for sale locally. One of them is peanut bars with sugarcane molasses. Besides having important places to be developed as tourist attractions, there are quality agricultural produce like rice, beans, sugarcanes, vegetables and fruits for daily consumption, and seasonal or festival foods.

However, although the products and services of the community are of good quality and popular with customers, their value is still very low. In addition, there are many products in the same market that compete fiercely. There is high competition, such as direct competition between products of the same specifications but from different manufacturers, or indirect competition from alternative products. The decision to purchase a product depends not only on the type and quality of the product. But it also depends on the form and the image of the product, as well as the external packaging of the product. Therefore, product appearance and packaging affect product purchasing decisions. And plays an important role in the distribution

of goods and various products, like a salesperson who helps in increasing sales volume and increasing the value of products.

Developing community products in Patum Subdistrict, Phrao District, Chiang Mai Province by creating added value and using cultural identity and local wisdom Develop products and packaging to standardize and achieve widely accepted quality, Including developing public relations media and promotional media To create competitiveness in the market and achieve sales success. Therefore, the researchers initiated the research project this research project intended to enhance the value addition of these products by developing a corporate identity set and sale promotion media of the community products, and to assess customers' satisfaction with the products and media. The project was conducted with collaboration from the community.



**Figure 1** Conceptual framework (Source: Researcher, 2023)

### Research objectives

1. To examine community identities regarded as local wisdom and cultural capital of Tambon Pa Tum, Phrao district, Chiang Mai province.
2. To develop the corporate identity set and sale promotion media of the community products.
3. To assess customers' satisfaction with the identity set and sale promotion media of the community products.

### Methodology

The methodology of this research and development is explained in detail as follows.

For the first objective, it was qualitative research to collect the data about community identities. The quota sampling method was applied to select the sample group, which included two community leaders, two folk scholars, four entrepreneurs, five community members, and two concerned state officials. An in-depth interview was used to collect the data and the SWOT Analysis was also conducted. The quality of the research instrument was examined via the content validity.

The documentary research was conducted to obtain relevant data. Participatory observations were employed by having conversations with community members, entrepreneurs, and community residents. Moreover, non-participatory observations were carried out to record general conditions and relevant data or evidence (Leepanyaporn & Runpho, 2021).

The descriptive were used to analyze the data on community identities, cultural capital, cultural tourism, and community economy.

For the second objective, it was applied research, the process of applied art design, and modern marketing knowledge. The purposive sampling method was used to select the population and the sample group, which included one of the five community entrepreneur groups. An in-depth interview with semi-structured interview questions and an observation were used to gather the data. The data were then synthesized for creating the corporate identity set and the sale promotion media.

The instrument was a quality assessment of the identity set by three experts on the beauty of the logo, colors, fonts, and other design components. The Cronbach's alpha coefficient was applied to assess the quality of the instrument.

The data collection was conducted at the business premises of the entrepreneurs. The data were then used to draft the prototype and the draft was presented to the entrepreneurs for improvement. The improved draft was submitted to the experts for verification and recommendations for further improvement. The assessment results were analyzed to find out the complete and final draft before actual production in the industrious system.

For the third objective, it was quantitative research. The population and the sample group to assess their satisfaction with the identity set and the sale promotion media were 100 the general public and tourists who were interested in the community products, and the quota random sampling method was applied. The simple random sampling method was used to select members of each group.

The data collection instrument was a satisfaction questionnaire and the Cronbach's alpha coefficient was utilized to verify the quality of the instrument. The data collection took place in Chiang Mai area and the data were statistically analyzed for mean, percentage, and standard deviation.

## Results

### 1. The analysis of community identities regarded as local wisdom and cultural capital

#### 1.1. Community identities and history

Tambon Pa Tum was founded about 700 years ago. Originally, the tambon comprised Thung Ku, Thung Ha, Pa Tum and Ton Rung villages before branching out into nine villages. Traditional occupations of the residents were cultivation of rice and vegetables as well as foraging for forest products. The name of the tambon was derived from a type of trees densely growing in the area, called Ton Tum. The tree, *Anthocephalus chinensis* (Lam.), is a soft wood tree with scaly bark and golden texture. Its leaves are shiny green with petals on the root of the leaves and fluffy flowers similar to rambutans. The trunk could grow as large as six arm spans. Most of the residents are the Tai Yai ethnic group, known locally as the Tai. There migrated from highland like Lawa and Tai Yai. There are several abandoned temples, such as Dong Athit and Dong Luang temples, and there are some important places that could be developed into tourist attractions like Lak Lan Caves and Chom Hin Pagoda. Other natural tourist attractions include Pha Lat, Pha Tang and Wang Chomphu waterfalls. Geographically, the area is mountainous with low-lying areas for residence. The residents are mostly farmers cultivating lowland and highland rice and growing vegetables (Wimonsithichai, 2021, Sriratanaban, 2021).

Besides having important places to be developed as tourist attractions, there are quality agricultural produce like rice, beans, sugarcanes, vegetables and fruits for daily consumption, and seasonal or festival foods. Distinct food or processed food of the community comprises

quality rice, a variety of beans, fermented soybean, and blocked sugarcane molasses. This produce can be used as raw materials for cooking, and rice, beans and sugarcanes are important raw materials for cooking of the Tai Yai ethnic group.

The summarize of SWOT analysis to find out of the identity of the Tambon Pa Tum, Phrao district, cultural capital, cultural tourism, and community economy. Data were collected from two community leaders, two folk scholars, four entrepreneurs, five community members, and two concerned state officials which are summarized as follows.

**Strengths (S):** Including inheriting traditions and culture, agricultural way of life, agricultural products, local food consumption, beautiful geography, perfect nature and environment, friendly people, sense of hospitality, living with a self-sufficient life. Which is considered cultural identity, and cultural capital

**Weakness (W):** Products, services and tourist attractions of the community are not widely known, there is a lack of labor, and there is a lack of inheritance due to the new generation migrating, the birth rate decreasing, and people in the community having low incomes.

**Opportunities (O):** The trend of ecotourism, community tourism, the trend of consuming chemical-free food, a return to giving importance to local products and nostalgia.

**Threats (T):** COVID-19 pandemic, environmental issues some periods of the year, domestic and international economic recession

Summarize of SWOT Analysis to find out of the cultural identity of the Tambon Pa Tum, Phrao district, are Ethnic identity, language, mix traditions of Tai and Shan, culture, and beliefs which is a Buddhist community, including arts and crafts that reflect ancestral roots and there also have the identities and uniqueness of local food that can still be seen continuously and regularly. The identities of local food can be used to produce community products and services to create income for the community. The consumption of sugar cane juice and utilization of sugarcane and sugarcane juice, People in the community process sugarcane juice into blocked sugarcane molasses to sell in the community and export to sell in other areas. Blocked sugarcane molasses is the main ingredient of cooking. blocked sugarcane molasses can process into snacks and sold during festivals and as community souvenirs.

From the investigation, the cultural capital is sugarcane cultivation and sugarcane-based food. This folk wisdom has been passed down from generation to generation. Well-known products include solid and powder molasses, and peanut bars in sugarcane molasses. Sugarcanes are cultivated in the rainy season between June and July and harvested in February. The canes could be extracted for juice for drinking, or the juice can be processed into a blocked solid form for seasoning, making sweets, turning into herbal medicine, or mixing with mortar as a construction material.

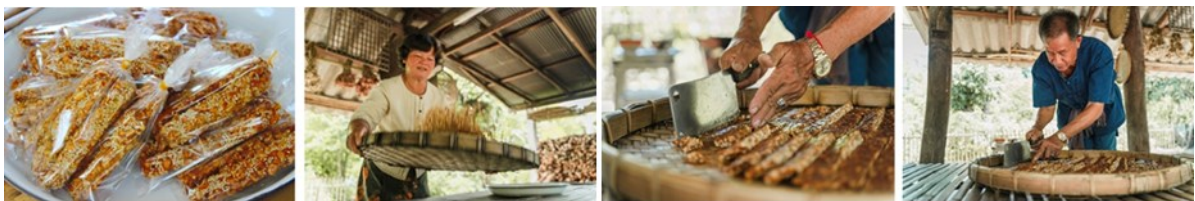
Blocked sugarcane molasses is a kind of sweet food and a cooking material. They are derived from fresh sugarcane juices and boiled until water and humidity almost all evaporate. The thick brown molasses is then poured into square molds. When cooled, the molasses is taken out from the molds. The boiling process at the study area is based on traditional methods, and conventional stoves, the ethnic folk wisdom, are used. The stove is made from bricks and five stoves are placed close to one another. Inside is a fuel compartment with heat ventilation (similar to a kiln). When firewood is lighted at the first stove, the heat is transmitted to the rest of the stove. When the molasses at the first stove is boiling and become solid, the second one starts to heat, ready for boiling and being solidified. The energy is generated from dried bagasse after extracting juices from sugarcanes. This method makes use of agricultural waste, which is a circular energy supply derived from the ethnic folk wisdom.



**Figure 2** Farming and blocked sugarcane molasses of the Tai Yai ethnic group  
(Source: Researcher, 2023)

### 1.2 Products and community services

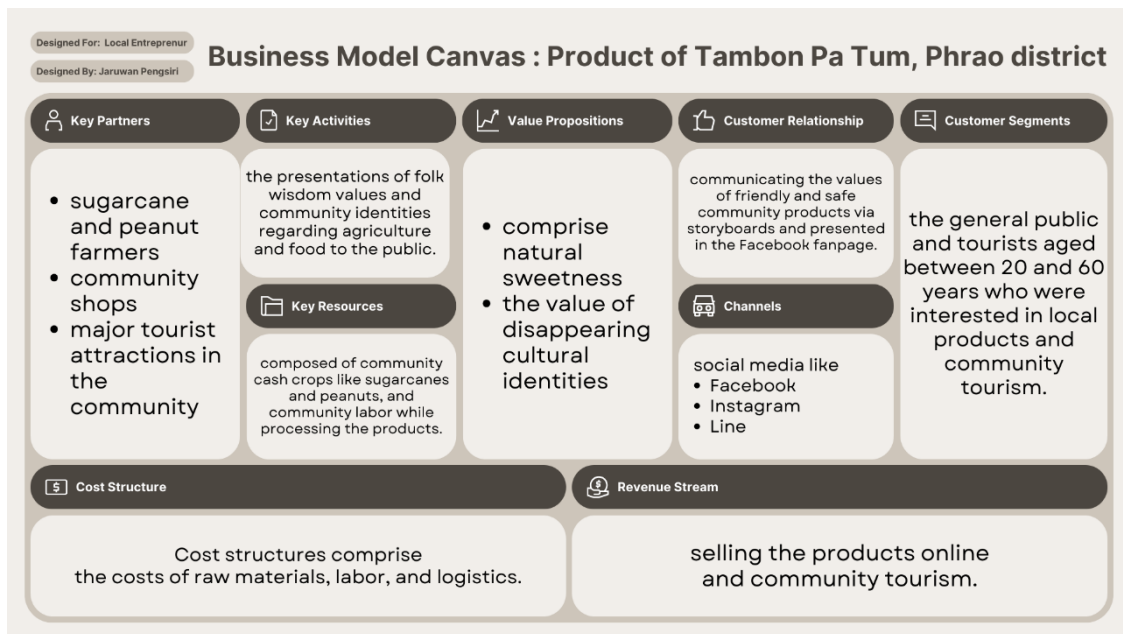
This Tai Yai village (Tambon Pa Tum, Phrao district) is different from Tai Yuan or Lanna village in Chiang Mai and the northern region, with distinct cultural identities. Most of the residents are involved in agriculture, growing rice, beans, and sugarcane. Sugarcane is processed into an important product, that is, blocked molasses, which have generated income and fame to the villagers. Another agricultural processed product is peanut bars in sugarcane molasses. This product is regarded as a food identity of the Tai Yai and is sold in local markets during Song Kran Festival. It is popular among local people because it is made from clean, fresh and chemical-free local materials without preservatives. It is a famous ethnic food. In the past, the food was brought to work or during journeys, because it is sugary and provides energy between meals. Even now, old people eat it with the main course and it is found as a side dish for the ethnic residents (Interview, 2021).



**Figure 3** Peanut bars in sugarcane molasses, a food identity of the Tambon Pa Tum, Phrao district, Tai Yai ethnic group (Source: Researcher, 2023)

### 1.3 Marketing strategies and positions of the products

After summarizing the results with the community, a group of entrepreneurs were selected as pilot samples for product development to further develop community products. Leads to the production of promotional media to increase public awareness. Researchers, community leaders and stakeholders run the process of selecting entrepreneurs to carry out this research is the manufacturer of the MaeBuaBan brand. The Small business of community, the owner of the business is a member of the community, as a group of housewives. It is the only producer of peanut bars in sugarcane molasses in the community, who have been in business operation for more than 15 years, the entrepreneurs continuously producing high-quality, clean, and safe products. The entrepreneurs being ready to participate in research projects. The researcher and the entrepreneurs collaboratively conducted and drew up a business model canvas, and formulated the marketing strategies, which are summarized as follows, Business model canvas.



**Figure 4** The Summary of Business model canvas, the product of Tambon Pa Tum, Phrao district, the Tai Yai ethnic group (Source: Researcher, 2023)

The Summary of Business model canvas of the product for Tambon Pa Tum, Phrao district can be explained as follows **Customer segments** are the general public and tourists aged between 25 to 60 years who were interested in local products and community tourism. **Value propositions** comprise natural sweetness and the value of disappearing cultural identities. **Customer channels** are social media like Facebook, Instagram, or Line. **Customer relationships** consist of communicating the values of friendly and safe community products via storyboards and presented in the Facebook fanpage. **Revenue streams** come from selling the products online and community tourism. **Key resources** are composed of community cash crops like sugarcanes and peanuts, and community labor while processing the products. **Key activities** include the presentations of folk wisdom values and community identities regarding agriculture and food to the public. **Key partnerships** are sugarcane and peanut farmers, community shops, and major tourist attractions in the community. **Cost structures** comprise the costs of raw materials, labor, and logistics.

#### The Product before Development

The peanut bar is the product of Tambon Pa Tum, Phrao district is regarded as a food identity of the Tai Yai and is sold in local markets during important festivals. It is popular among local people because it is made from clean, fresh and chemical-free local materials without preservatives. The product is sold at a price of 20 baht per bag. The package size is approximately 20 grams. Distribution channels are markets, shops in the community; most consumers are people in the community.

#### The Product after Development

**Product:** The peanut bar is considered a sweet, and community residents have it with other side dishes or as a snack. However, eating methods must be changed in consistence with the behavior of the target consumers. Thus, the product was developed into a 200-gram bar contained in a clear Ziplock plastic bag with eight pieces in each big bag and an 8x10 centimeter PET round plastic bottle with a net weight of 150 grams. The product is aimed at

the new generation of consumers, urban residents, and customers of working age, and is sold through online channels. And booth sales for various exhibitions.

The further community product and product standardization development of Tambon Pa Tum, Phrao district. For the product to access a wider market, the peanut bar as a community identity must be changed regarding patterns and quality suitable for behaviors of modern consumers. This is because the main ingredient is sugarcane molasses which provide high energy and sweetness. This is against the consumption trends of urbanites who avoid or reduce sugar quantity in food. As a consequence, the ingredients of the peanut bar are adjusted by using a smaller quantity of the molasses and adding more peanuts and sesame in order to enhance the taste but reduce sweetness. Furthermore, the size of the bar is reduced to a bite size from 15x3 centimeters to 6x3 centimeters. The packaging is for a particular unit. If consumers cannot eat in one seating, other pieces can be kept without becoming rancid. Additionally, the new product was examined for nutritional values per consumption unit from the Central Laboratory (Thailand) Company Limited. The results are displayed on the package of the product.



**Figure 5** The further community product and product standardization development (Peanut bars in sugarcane molasses) the development product of Tambon Pa Tum, Phrao district (Source: Researcher, 2023)

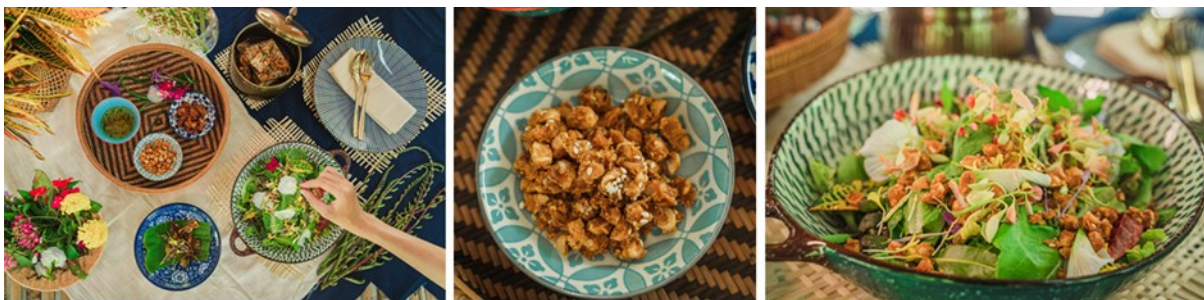
**1.4 The continuation and development of community products and services**

After the development of the product, community services were developed. According to the results of SWOT Analysis for development of community services, found that This community can develop into a cultural tourism destination due to several factors: There are several abandoned temples, such as Dong Athit and Dong Luang temples, and there are some important places that could be developed into tourist attractions like Lak Lan Caves and Chom Hin Pagoda. Other natural tourist attractions include Pha Lat, Pha Tang and Wang Chomphu waterfalls. The breathtaking scenery of Geographically, the area is mountainous with low-lying areas. Therefore, developing food services for tourism should prepare for the community.

The researcher and the entrepreneurs collaboratively conducted community services which was food for community tourism. It was the formulation of tourism planning by integrating ethnic food into tourism activities. There were two sets of food. The first one was a traditional set, consisting of sticky rice, mixed vegetable curry, fried pork, and Tai Yai style chili paste. The second one was a contemporary set, consisting of what was in the first set and a local vegetable salad with salad dressing made from the peanut bar as an alternative for tourists.



**Figure 6** Traditional food set of Tambon Pa Tum, Phrao district for community tourism  
(Source: Researcher, 2023)



**Figure 7** The Final Development service from this research for Tambon Pa Tum, Phrao district are the contemporary food set for community tourism  
(Source: Researcher, 2023)

## 2. The development of the corporate identity set and community product sale promotion media for Tambon Pa Tum, Phrao district.

The researcher Design the of Logo, Branding, Packaging by using the concept design of local identity, that analyzing from cultural capital of Tambon Pa Tum, Phrao district. The pilot entrepreneur were select by the researcher is the group of small local business; they produce the product such as blocked sugarcane molasses, Peanut bars in sugarcane molasses, and Sesame bars in sugarcane molasses.

The concept of logo, branding, packaging design were analyzed from in- depth interview data from the entrepreneurs, residents, community leaders, and survey of the environment were analyzed and used to develop community identities, business model canvas, marketing strategies, and the corporate identify set. They included the analysis of mood and tone, logo, color palate, graphic elements or illustrations, and fonts. The details are as follows.

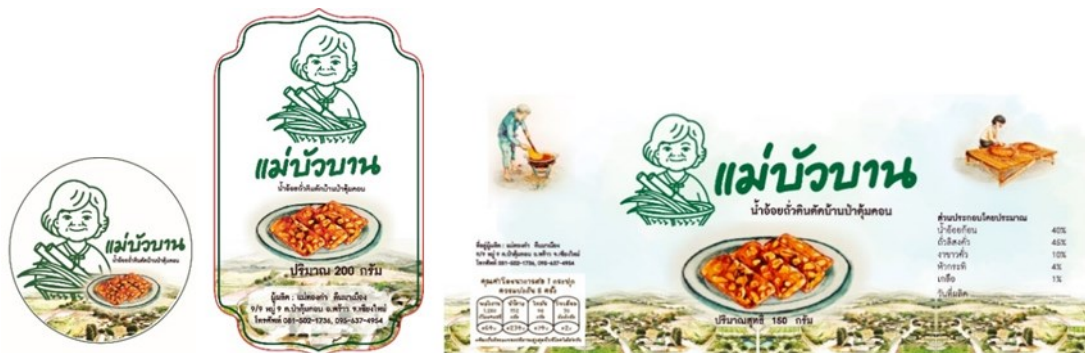
2.1 Logo. The symbol regarded as a community identity, a sugarcane, was used in conjunction with an attenuated image of an elderly woman, symbolizing entrepreneurship, love, warmth, safety and food from mother's recipes, and a sugarcane-full basket to symbolize sugarcane-based products in the community. For the color palate conveying sugarcane, green, light green, and light yellow were used. For the graphic elements or illustration, watercolor techniques were employed in order for the work to become soft. The illustrations of the peanut bar and a bird's-eye view of the scenery indicate the fertility of the community. A headless hand-written font was selected for the logo in order to derive an informal, relaxing and attractive feeling. For the parts with important information, a formal font was used, so that necessary information was clear to consumers.



**Figure 8** The design of the product logo and packaging for entrepreneur in Tambon Pa Tum, Phrao district (Source: Researcher, 2023)

2.2 Sale promotion media consisted of packaging design, video media design, and 2D motion media design. Designing media for the community is response to the needs of target consumers. The customer segments are the general public and tourists aged between 25 to 60 years who were interested in local products and community tourism. The consumer group is a new generation, modern lifestyle, there is a trend towards consumers who love healthy food, safe food, and consider the nutrition of products and likes attractive product forms and packaging. The lifestyle of the main consumer is perceived the message and public relations media by using the social media such as Line, Facebook, Instagram.

2.2.1 Packaging design. Three product labels were designed. The first one was a round sticker with a three-centimeter diameter for each product unit package. The second one was a 6x10 centimeter sticker for the transparent Ziplock bag containing the product units. The last one was a 14x6 centimeter sticker for the round PET box with a glued foam lid to prevent humidity and air. The box was sealed with 8x10 centimeter plastic.

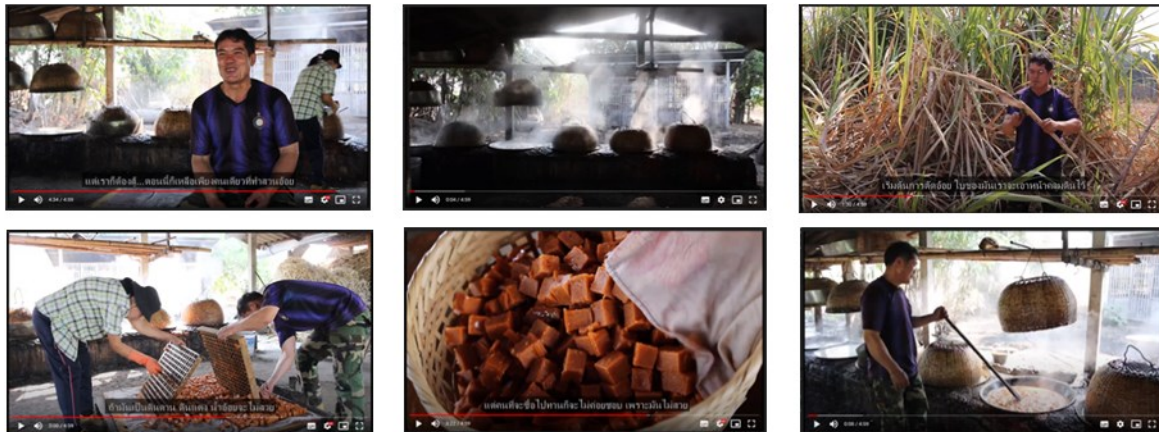


**Figure 9** Designs of the product logo and packaging (Source: Researcher, 2023)

2.1.2 Design of the video media for the consumer behavior is a new generation, modern lifestyle who usually buy the products from online; the lifestyle of the main consumer is perceived the message and public relations media by using the social media such as Line, Facebook, Instagram. That idea forces the researcher to make the video media to advertise the local product of entrepreneur in Tambon Pa Tum, Phrao district.

Finally the video production was divided into three parts. The first part involved content data collection to make the script by collaboratively planning with community leaders and residents. The product production steps were closely monitored in order to plan the production guidelines and patterns for audiences. The second part was the filmmaking process with a production specialist team. Still and moving pictures were taken in the documentary

filmmaking angles in order to derive dimensionally attractive and value-added pictures. The third part was the editing and presentation processes. The concept for presentation was in the form of natural storytelling about the lifestyles of community residents. The contents must be brief and not too long, with a focus on more detailed pictures in an attempt to raise the product values and implicitly present meticulous production steps. The video media were produced in two forms: a one minute length and a 3.5 minute length, in consistence with current online platforms as well as behaviors of consumers in perceiving and using online media and for community residents to use.



**Figure 10** Video media production to publicize the community products  
(Source: Researcher, 2023)

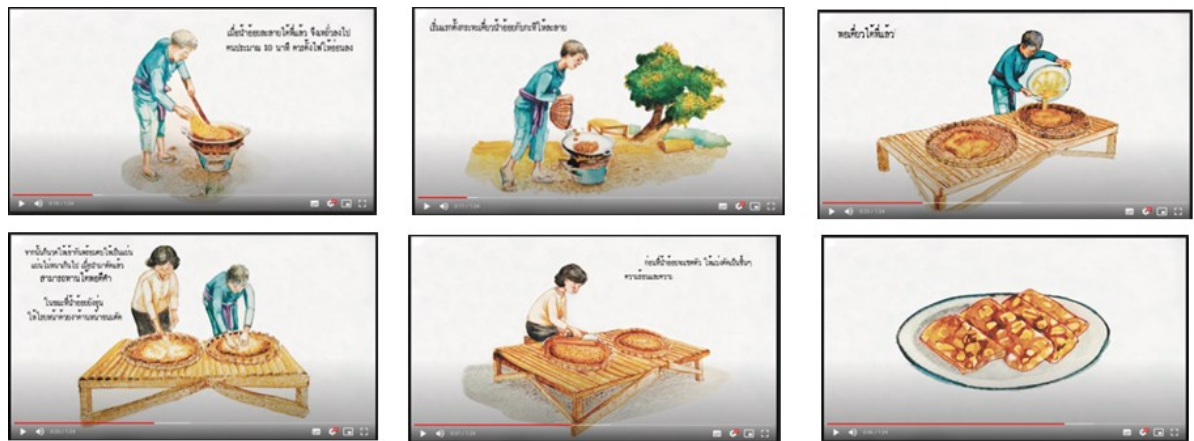
2.1.3 Design of the 2D motion media. The 2D motion technique was selected for the movement of particular parts. The two-dimensional plane was specified like a living tales book. The working process started from analyzing the contents to drawing pictures to convey stories with the semi-realistic watercolor drawing, based on the script collaboratively formulated with the community members and entrepreneurs. The script was made into a storyboard with simple and easy-to-understand drawings. There were eight drawings and the Adobe After Effect Program was used to manage the motion. An advantage of using such drawings was that various target groups, both children and adults, could be accessed. It was a quick and easy-to-understand method to access complicated data in addition to promoting modern and reliable images of the community products. There were two stories for the production of the 2D motion media.

The first one was about the extraction of sugarcanes. This was to provide knowledge about extracting sugarcanes for juices. After that, the raw juices are processed into other products, for instance, blocked sugarcane molasses for seasoning or processing into sweets.



**Figure 11** The 2D motion media about extracting sugarcanes into juices  
(Source: Researcher, 2023)

The second one was about making the peanut bars in sugarcane molasses. It provided details about the production steps and raw materials which include peanuts, blocked sugarcane molasses, and sesame. The peanut bars are regarded as Tai Yai ethnic food and well known in the area. In the past, people brought the bars with them while working in the fields or during their journeys as a snack to provide energy between meals. Old people had them as a side dish. Even now, the bars are served with other side dishes of local residents.



**Figure 12** The 2D motion media to publicize and provide information about the production of peanut bars in sugarcane molasses (Source: Researcher, 2023)

### 3. Satisfaction assessment of consumers toward the corporate identity set and sale promotion media of community products.

The research sample use to the simple random sampling method was used to select the sample group and the research sample is divided according to social status as shown in the following table.

**Table 1** The research sample

Description	Number	Percentage
1. The tourists	50	50.00
2. The general public interested.	50	50.00
<b>SUM</b>	<b>100</b>	<b>100.00</b>

**Table 2** The data were collected from 100 samples who were the tourists and the general public interested in the community products. The simple random sampling method was used to select the sample group. The analysis results are detailed in the following table.

Description	Mean	S.D.
1. The peanut bar in sugarcane molasses is delicious with quality, nutritional values, and reasonable prices.	4.10	0.62
2. The shape and size of each bar are suitable for one eating.	4.30	0.67
3. Your overall satisfaction is on the product, regarding packaging and net weight for each unit.	4.10	0.62
4. The development of the peanut bars is regarded as the continuation of knowledge and local wisdom to produce the product, enhance its value addition, and generate more incomes for community members.	4.60	0.56
5. The product logo uses interesting and easy-to-understand graphics that can convey the product and identity of the community and entrepreneurs.	4.50	0.58
6. The graphic work on the package of the products was designed beautifully and interestingly with clear information.	4.50	0.58
7. The overall patterns of the packaging were suitable and able to protect the products inside.	4.400	0.61
8. The overall perspectives on the corporate identity set and community products were satisfactory.	4.30	0.67
9. The videos conveying the background of the products were interesting and easy to understand with clear sound and images, and the access could be done in various channels.	4.40	0.61
10. The graphic motion on "Production of blocked sugarcane molasses" could convey easy and interesting background of the product with clear sound and images, and the access could be done in various channels.	4.50	0.58
11. The graphic motion on "Production of peanut bars in sugarcane molasses" could convey easy and interesting background of the product with clear sound and images, and the access could be done in various channels.	4.50	0.58
12. The overall satisfaction with the images of the community products in the sale promotion media.	4.40	0.61
<b>SUM</b>	<b>4.38</b>	<b>0.60</b>

It is summarized that the satisfaction was highest with the continuation of the folk wisdom by producing the peanut bars, with the mean of 4.6, whereas the satisfaction was lowest with the nutritional values and packaging of the product, with the mean of 4.1. The satisfaction was at the high level with the product logo, the graphic design on the packaging, and the graphic motions about the production of blocked sugarcane molasses and the peanut bars, with the mean of 4.5. It was followed by the satisfaction with the overall packaging, the video on the background of the product, and the overall images of the community product, with the mean of 4.4, while the mean of 4.3 was for the shape and size of the product and the overall satisfaction with the corporate identify set and the community products.

## Discussions

1. The investigation on the community identities which were regarded as the folk wisdom and cultural capital of the community revealed that it is a Tai Yai village with distinct cultural identities different from those of Lanna villages. Their lifestyles are also different from those of Tai Yai villages. The cultural identity of the Tambon Pa Tum, Phrao district, was the outstanding include ethnic identity, language, mix traditions of Tai and Shan, agricultural, culture, and beliefs which is a Buddhist community, including arts and crafts that reflect ancestral roots and there also have the identities and uniqueness of local food that can still be seen continuously and regularly. Which is considered to have outstanding characteristics Passed down from generation to generation, it is transmitted through the individual and the community environment. Creating the uniqueness of culture until it becomes cultural identity. (Kongpim, N., 2020) The identities of local food can be used to produce community products and services to create income for the community.

For their local food identity and agricultural, they cultivate rice, beans, peanut and sugarcanes. Sugarcanes have been processed into blocked molasses which is a famous and income-generating product for the community members. It is regarded as their socio-cultural capital and social value, contributing to sustainable community enterprises and entrepreneurship (Valchovska & Watts, 2013, Aphibunyophat & Klamsaengsai, 2010). The production of the peanut bars in sugarcane molasses was changed and developed regarding its quality in consistence with the behavior of modern consumers. This is because the main ingredient of the bars is sugarcane molasses, providing high energy and sweetness which are against nutritional trends of urbanites who are avoiding or reducing sugar quantity in food. Consequently, the researcher and community entrepreneurs formulated a business model canvas (Osterwalder & Pigneur, 2010) in order to lay out the marketing strategies and re-develop the product in accordance with consumers' needs and behaviors. This is consistent with Aphibunyophat & Klamsaengsai (2010), indicating that product re-development is able to enhance its value addition and it is a guideline to raise the product level, set a higher price, and make consumers realize more product benefits.

2. For the development of the corporate identity set and sale promotion media, the logo was designed, based on a sugarcane and an attenuated image of an old woman, symbolizing business ownership and conveying love, warmth and safety, as well as a basketful of sugarcanes to convey sugarcane-based products. The color palate was used to convey sugarcanes with graphic elements and illustrations. The watercolor techniques were applied to derive a soft mood. Headless hand-written fonts generated an informal, relaxing and attractive feeling. For important information, formal fonts were used for consumers to read such information. This is in line with the design of a corporate identity based on the graphic components. Corporate identity expresses an image to the public and displays the identity of

an organization. Depreeuw & De Neve (1992) stated that a clear and systematic communication of the corporate image created the identity, unity and good understanding for an organization, a shop, or a community via the presentation of the corporate identity to the public, such as, symbols, colors, illustrations, and fonts. Presently, a corporate identity is crucial for an organization, particularly in a highly competitive world. In this investigation, the sale promotion media was designed by using the two-dimensional motion and semi-realistic watercolor techniques (Caitlin, 2016). An advantage of such media was that it can be accessed by a variety of target groups, both children and adults. It is a quick and easy way to access complicated information and promotes a modern and reliable image of the community products. The video media applied the documentary filmmaking technique (Ken, 2021). The video creation was one minute and 3.5 minutes in length in consistence with current online platforms and consumers' behaviors in perceiving and using online media. It is also suitable for community residents to implement.

3. Regarding the satisfaction of the consumers with the corporate identify set and the sale promotion media, it was revealed that the satisfaction was highest on the continuation of the folk wisdom to develop it into a product with value addition and income generation. It was followed by the satisfaction with the overall packaging, the images of the products, the corporate identity set, and the overall patterns of the products respectively. The findings are consistent with the concept of business operation based on community identities, applying corporate images to promote the sales and value addition of community products (Department of Cultural Promotion, 2019). Furthermore, Phanmee & Jongchanasutho (2019) revealed that a corporate image creates memorization and makes a true difference among the same products of competitors. However, the image must express different characteristics and unique qualifications to convey to the general public to perceive and understand such an organization or community. The expression of the image must be concrete and concise. The images are created through the visual arts processes, consisting of figures, shapes, colors, shades, and feelings, which are generally known as the corporate identity design.

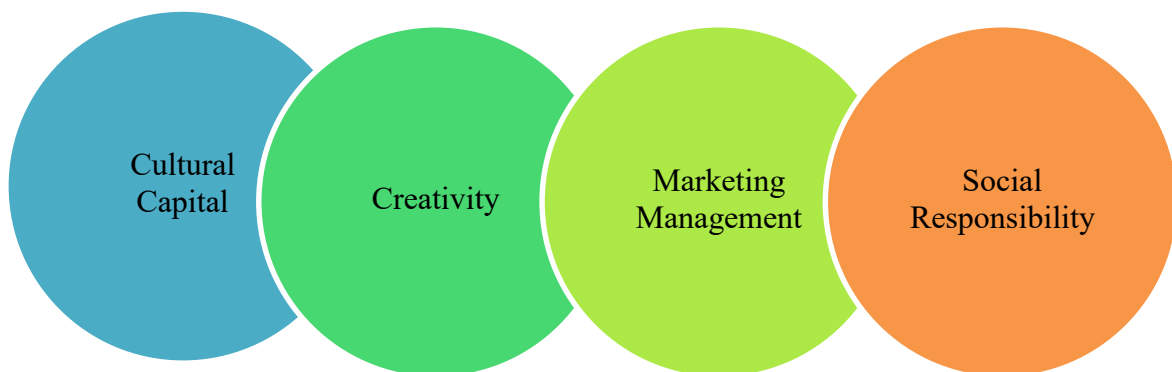
## **Conclusion and suggestions**

In addition to business knowledge for community product development, developers and corporate identity communication must depend on creativity. Therefore, researchers collaborating with communities must emphasize creativity as well. It is not only new knowledge or innovation, but local culture, wisdom, and cultural identities must be exploited for economic values. For community product development to become sustainable, community cooperation must be established, because community residents are the ones who will continue the operations. As a consequence, researchers must coordinate and seek key successes, which may be community residents of working age or new generations who will pass on and preserve culture and arts, wisdom, and identities.

## New knowledge and the effects on society and communities

The cultural capital of this research or this community is Bringing the food identity of the community that is a common thing to expand into the production of products, namely peanut bars in sugarcane molasses to be sold in other areas. To create income for the community Product development requires many factors, including production, marketing, design and creativity. The researcher designed the brand, packaging and created promotional media including 2D motion videos to advertise and promote the product to increase public awareness. Through marketing analysis and planning, social responsibility is the continuation of culture; utilize local resources by purchasing raw materials from locals and hiring local labor.

From this research, it is found that, for community identity-based businesses and community product development and services to become sustainable, it requires knowledge from a variety of sciences. The first one is local wisdom which is regarded as a cultural capital for the continuation of products and services. The second one is creativity based on art knowledge to apply commercially in an attempt to convey the beauties and values of local culture, traditions, and wisdom. The third one is business knowledge and modern marketing concepts in order to create differences and develop products in accordance with consumers' needs. The final one is social responsibility, sustainability, environmental conservation, job creation, income generation, and cultural preservation for young generations. The localnomics model is summarized in the following figure.



**Figure 13** Localnomics model for community product development  
(Source: Researcher, 2023)

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## Managing Creative Online Learning Activities using IMTEAC Model via Line Application on Romping into the Marvelous Station

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### Abstract

This study was aimed to 1) develop and evaluate the quality of using creative online learning activities, 2) study the results of using creative online learning activities; and 3) study the evaluation results of using creative online learning activities; The study has indicated that: 1) the quality of using creative online learning activities has the mean IOC scores for Step 1 - Step 6 (I-M-T-E-A-C) = 0.92; as evaluated by 7 experts using the Index of Consistency. 2) the results of using creative online learning activities on “Romping into the Marvelous Station” taught via the Line application. The sample group were 30 graduate students enrolled at (Master of Education Program in Innovative Curriculum and Learning Management) Ramkhamhaeng University in the first semester of the 2020 academic year. The result showed that the inquisitive mind scores of the students were higher than before at the statistical significance level of .05. 3) the evaluation results of using creative online learning activities on “Romping into the Marvelous Station” via the Line application as assessed by 5 qualified experts were that the IMTEAC model and the implementation of the model are found to be “the most appropriate” in overall area.

**Keywords:** Knowledge management, Online creative activities, IMTEAC model, Inquisitive mind, Line application

## Introduction

The emergence of COVID-19 four years ago has affected various practitioners in many fields especially medical staff who have immensely devoted themselves in treating their patients during these past few years (World Health Organization, 2020; ASPE Office of Health Policy, 2022). While many industries have been urged to adjust and apply the practice of Work From Home all of a sudden, teachers and professors have also faced challenges in many aspects. The Coronavirus 2019 pandemic has created significant challenges for the global higher education community (Crawford, et al., 2020; Barrot et al., 2021). Since they had been teaching their students in classroom setting, they never experienced online teaching. At the same time, their state of mind as well as anxiety from the calamity and news reports of the terrifying widespread in the country and abroad have affected the learners' state of mind and concentration. The question that needed an urgent answer was how to online teaching that offers fun, joy and enhance the learners' understanding.

All those pressing factors led to the quest for fun and informative online learning activities for the Graduate students taking the subject Innovation and Technology for Learning Management. The focus was on how to have the students enjoy teaching and learning activities that are interesting, challenging and captivating. And they would feel like playing games, having to unlock the challenges as a team. The graduate students shall no longer be conservative, but be imaginative, creative and logical instead. Then they can collaborate as a team in developing innovative teaching and learning activities for their students. These graduate students should experience online teaching and learning activities that promote self-gratification and self-awareness. They should be proud of themselves and at the same time respectful of others. They need to possess these life skills together with academic excellence academic through self-learning through IMTEAC Model (Dangchamroon, 2022).

Zoom, Meet, Microsoft Teams are popular platforms that most teachers have used for their remote teaching and learning activities. LINE is frequently used as an additional tool for communication between teachers and students because of its easy access, cost effectiveness and connectivity. This research has focused on LINE as the main application based on the learning experience pyramid. Learning outcomes from group discussions account for hands-on, teaching others, and application of knowledge in real-world situations 90% (Dale, 1969). These figures are consistent with the design of online learning activities in this research that emphasizes participation and collaboration through a variety of learning activities such as discussion, real-time exchanges of knowledge, hands on exercises and design of innovations, etc. LINE chat is considered as the main tool for organizing creative online learning activities, which creates wonder among faculty and students both within and outside the institution as to how it is possible to make use of this platform to make students enjoy learning. With the limitation of not seeing people face to face and not hearing the voice, how can strangers' interaction be friendly, warm and welcoming? How can pedagogical theory relate to innovation, etc.?

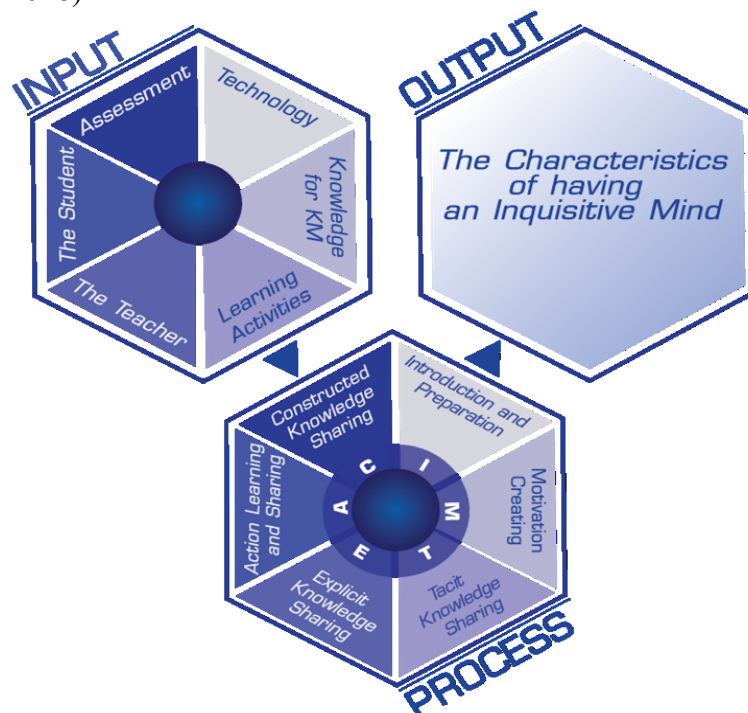
## Literature Review:

One of the key problems in creating innovation to promote learning via electronic media (multimedia, digital media, animation) is the reproduction of content, knowledge, information from books into innovation or electronic media, making the newly created media another form of textbook, even with some illustrations. When this happens, the innovation or electronic media created is not different from the lessons in the book. Therefore, it is not interesting or

appealing to the learner. One of the major problems of education is the teaching of general and vocational knowledge that emphasizes classroom-based knowledge and measures on content memorization (Office of the Education Council, 2016). Educators should not focus only on learning in computing or reading, instead the focus should be on learning process. In addition, students should be able to participate in reflecting knowledge and sharing thoughts, feelings, or experiences. They should learn to exchange viewpoints through discussions, practice problem solving in real-life contexts, as well as create innovation to promote advanced thinking processes.

Communication (Moore, 2015) and motivation (Alessi & Trollip, 2001) are essential to learners' learning. This research employed IMTEAC Model developed in the study on the development of knowledge management model for weblog learning (Dangchamroon, 2016) that was experimented in art courses for elementary school teachers, semester 1 of the academic year 2014. It focused on students' motivation that leads to learning attributes, encouraging students to share and exchange freely their ideas, knowledge, feelings and experiences. So that they become constructive, having self-esteem and respect for classmates, course content, which leads to fullest creativity. When learners are motivated and inspiration arises then they will have fun learning endlessly. It encourages one's inquisitive mind and life-long learning.

The characteristics of an inquisitive mind are the pursuit of knowledge through 1) listening, watching, reading, receiving information, 2) thinking, reflecting from what one has listened to or read, 3) asking, ask questions to get facts 4) Writing or Recording. Printing or creating a computer database helps with systematic thinking, because before writing anything, we must first think. It also helps to develop memory that can be searched when needed and can also offer assistance to others. These attributes have proved to be true all along and are the characteristics of learners in the 21 century. The important role of learners after education reform is to study proactively, discuss with the group, express ideas from what is learned and reflecting from teachers, peers in the group. They shall listen, think, read, write and take notes (Dangchamroon, 2018).



**Figure 1** IMTEAC Model (Dangchamroon, 2018)

This research is about designing creative online learning activities through tackling Marvelous Station using science and art that offer happiness and fun to learners. The activities are fun-oriented, not information-oriented, emphasizing positive interactions and inspiration. The focus is on a positive learning atmosphere, teaching life skills through subjects, self-learning and advanced thinking processes in accordance with IMTEAC Model's 6 core competencies. The Model gives importance to deep and meaningful learning outcomes. IMTEAC Model consists of 6 components, promoting learning traits, life skills, self-esteem, happiness and pride that can be applied for classroom learning activities and online learning activities. IMTEAC Model features basic principles of knowledge management, learning exchange with emphasis on motivating learning processes as well as professional ethics. This is achieved by presenting fun-oriented, not information-oriented knowledge, relating previous experiences to new knowledge and then connecting and forming extended knowledge for real life practices that are challenging. The aim is for sustainable learning through the learning processes.

## **Methodology**

1. Develop and monitor the quality of graduate students' creative online learning activities with the use IMTEAC Model via LINE application by 7 experts from 7 institutions. Check the quality of online learning activities with Index of consistency: (IOC) (Specialists in educational technology and communication, knowledge management, teaching and learning activities management, psychology/ educational psychology, inquisitive mind attributes 20 years and older). Then test out the online learning activities with 35 non-sample students enrolled in the Innovation and Learning Management Technology course, Semester 2, Academic Year 2019 (April 2020).

2. Study the effects of creative use of online learning activities in tackling Marvelous Station with IMTEAC Model through LINE application. The sample group is graduate students enrolled in the course Innovation and Technology in Learning Management Semester 1 of Academic Year 2020. 30 students out of a total population of 42 students willingly participated in the study using the One Group Pre-test-Post-test Design for a total of 48 hours. Each day, the 6 steps of the IMTEAC Model were used: in the morning 08.00-12.00 and in the afternoon 13.00- 17.00) (Note: The total number of hours in this course Innovation and Technology Management Learning accounted for 48 hours by 2 instructors. The instructors taught 24 hours each, and this batch of students has never met with their peers and class instructors before. It was 100% online interaction and learning from the first class to the last)

3. Use IMTEAC Model to evaluate online learning activities of Marvelous Station Tackling with via LINE application which was for graduate students. The assessment was carried out by qualified experts from 5 institutes (experts in educational technology and communication, knowledge management, learning activities management, psychology /educational psychology, development of characteristics for an inquisitive mind for 25 years and above) The assessment form is a 5-level value.

## Results

1. Based on the analysis and assessment of suitability of learning activities and technologies that promote online learning, it was found that LINE chat has a strong point that responds well to creative online learning activities with the IMTEAC Model. It helped create coordinated interactions through chat messages and line stickers that convey emotions in large quantities simultaneously in a short period of time. That reduced formality but instead created familiarity and friendliness, making the students feel close to one another even though they met for the first time. Chat interactions and stickers help reduce shyness. Students can discuss and answer questions simultaneously and comprehensively. The whole class instantly (without having to spend a lot of time waiting for answers to each question. The platform helped eliminate double voice from simultaneous talks, noise from forgetting to turn off the mic, weak internet connection problem. The key to online learning is the interaction among learners themselves and learners with instructors so this is considered as an effective platform for quality learning activities that meet and suit the criteria according to the IMTEAC model as follows:

Step 1 (I: Introduction and Preparation) is a very important step. We began with using feeling oriented or fun oriented approach. Students got to answer interesting open-ended questions within a limited time to create alertness and excitement. It is an activity that creates happiness, fun, and breaks the students' mental barrier towards the subject, mainly the fear that using the platform will be complicated. It also helped reduce pressure, nervousness, stress, anxiety and problems or negative feelings that students have accumulated. This fun competition not only helped students to be joyful, but it also relaxed. It also helps to open learners' minds to instructors, lessons and subjects. It also inspires learning, helping to promote learning in a long and sustainable basis (Line sticker duels, sending stickers with meanings that match the images specified, such as laughing, fun, funny, joy, ect. Typing answers for interesting open-ended questions; sending links of songs and ask for 3 keywords mentioned in the song and the creative elements from this clip. The last member who submitted the answer will get 1 point and had to make a charade clip online. With 5 points collected, they had to make an online dance clip), then link the keywords or concepts to step 2.

Step 2 (M: Motivation Creating) is a very important step, using a role model's story for inspiration. Sometimes we used tales, music, images, animation, performance shows, or even open-ended questions that are interesting and connected to the lesson so that learners appreciate the importance of the lesson, making the lesson touching or deeply relatable to the learner. It can also be a story that integrates life skills, desirable attributes, ethics, morality through subjects, or in other words, at this stage it is the teaching of the reality through subjects or teaching life skills through subjects. (These life skills consist of 4 main components; 1. The awareness of self and others, 2. The critical thinking, decision making and creative problem solving, 3. Dealing and emotions and stress, and 4. building good relationships with others (Bureau of Educational Activity Promotion, 2015). It helps the lesson to come naturally into the minds of the learner (it does not cause feelings of pressure or resistance, not passive learning or traditional teaching that uses the method of dictating, notetaking, repeating after and memorizing. It is to make the story of the lesson touch the learner's heart, unconsciously infiltrating into the mind (the next thing you know, you feel good about what you have learned), have thirst for knowledge, want to learn, want to improve yourself.

Step 3 (T) is an open-ended questioning session to give learners an opportunity to reflect on their ideas, knowledge, feelings, and previous experiences (in a friendly atmosphere) by relating to the stories deeply interwoven in Step 2. Learners get to exchange, share and transfer previous experiences, so learners will feel that they are an important part of the class and of the lesson. Whether what is shared is positive or negative, they all have value and meaning which leads to deep compassion, not something superficial, and what each learner reflects is unique. Learners may not have the same experiences as their peers so listening to classmates' previous experiences helps students understand different contexts and learn about diverse experiences.

Step 4 (E) After the lesson touches the heart and the lesson connects deeply with the learner's previous experience, then it comes to connecting to new challenges with open-ended questions as well as new assignments. They were assigned to create individual / group works, which at this stage helps learners feel they are an important part of the lesson and class. They are the ones who share new thoughts, knowledge, feelings, or experiences with new challenges. One crucial thing is to be able handle problems, tackle unexpected situations or deal with pressing issues in which the learner has expertise, aptitude or excel in different areas. Sharing new experiences on the same subject with different and varied answers or methods allows students to learn about the specialties of both themselves and of all their peers. It breaks down the mindset or wall in the mind that there is not one absolute answer. Acceptance of differences of thought, knowledge, feelings, or experiences creates a wide spectrum of learning, resulting in extensive and profound learning. This will lead to step 5: sharing and exchanging learning from practice (creatively because it breaks away from the original conceptual framework of answering multiple-choice tests with only one correct answer throughout their lives).

Step 5 (A) After the learner has successfully solved the challenge in Step 4, the student will be able to solve the problem that is more complex or challenging. By applying the knowledge that is available to solve problems creatively or jointly create new innovations through the most intense and challenging requirements (can be applied in real life because it is a problem or situation in our daily life). Students participate in thinking, analyzing, decision making and solving problems creatively, communicating and working as a team. This leads to hands-on experience, meaningful learning created by oneself with teachers as facilitators to help mentor or coach by asking creative and inspiring open ended questions. If they can't figure it out and can't answer, they would be encouraged with open ended questions until they could think and answer the question or solve the problem (the teacher's open-ended questions act like a guiding light). Then they will be happy and proud, being able to solve problems or create new things for the more challenging situations or contexts, as real-life situations don't have ready-made answers. Therefore, teachers do not provide ready-made answers, but provide students with the knowhow and how-to so as to promote advanced thinking processes (critical thinking, analysis, evaluation). Then the learners present their work or group innovations, and fellow members of the other groups acted as committee members or experts to evaluate their work and provide constructive feedback. The teacher used a technique to provide inspirational, not judgmental feedback that will affect the feelings or minds of the proponent, for example, it is not a sentence that this work is very good at all, but... It's a great adaptation. (Adding a little more this section will complete the work, or the work will go global, etc.) Be inspired to learn Be inspired to develop your work in the next step that is higher than before. In addition, members can share and exchange learning from real practices. Hands-on experiences has been occurred within the group. Members also learn from the practical work of other group members (Dangchamroon, 2022). Members learn a variety of creative works, which will extend their thinking skills to the highest level which is the evaluation level (Bloom, 1956). Be able to

judge how their friend's performance is and how good it is. Also know what should do to provide more constructive feedback, if they want to do better.

Step 6 (C) is a discussion of the summary of the collected knowledge, ideas, feelings and experiences of being fully involved in learning activities in every step along the way. This will result in life-long and meaningful learning. Getting exposed to different and diverse ideas, experiences, and work pieces of classmates resulted in the writing quality because it is extracted from first-hand experience. One's experiences, conveyed as an anecdote in an essay, is a writing work that is not based on memorization. It is rather the transmission of ideas and composition with processed knowledge in written language through analytical thinking. In addition, when the students exchanged "Summary of collected knowledge" that friends reflected through written language or other communication channels such as video clips. With words, facial expressions, tones of voice, eye contact, body language and gestures all promote learning in the process of summing up knowledge. In addition, the learners learn to process the summary of collected knowledge from fellow students. It helps promote advanced thinking skills in terms of evaluation. They are able to assess the quality of their friends' writing and know how profound and impressive it is. From the above, the IMTEAC Model is proved to be valuable and important in promoting the characteristics of an inquisitive mind. It also helps promote life skills, self fulfilment, happiness and pride. Plus, it promotes 6 core competencies for learners, which can be applied for classroom learning activities and online learning activities. IMTEAC Model presents basic principles of knowledge management, knowledge exchange with emphasis on motivating learning processes. It focuses on instilling ethical values harmoniously into the lessons by giving a sense of "fun before information" relating previous experiences to new ones. Extending knowledge to practical practices that are challenging leading to sustainable learning through the process of knowledge extraction and summaries.

Then test these online learning activities out with 35 non-sampling graduate students enrolled in Innovation and Technology for Learning Management Semester 2 of Academic Year 2019 (April 2020). It was found that after the conduct of creative activities, the learning trait scores were statistically significantly higher than before by .05

2. For the results of conducting creative online learning activities: the Marvelous Station with IMTEAC Model via LINE application with a sample of 30 students over a period of 24 hours, it was found that the average score of the inquisitive mind of the samples was statistically significantly higher than before classes at .05 (table). The evaluation form consisted of 32 questions (Dangchamroon, 2016) under 4 main indicators including: 1st indicator: "Su"- behavioral patterns that include determination to learn/ study (listen, read). 2nd indicator: "Ji"- behavioral patterns that include recollection of existing knowledge, trying to understand what they have read and listened. 3rd indicator: "Pu"- behavioral patterns that include learning by questioning and talking. 4th indicator: "Li"- behavioral patterns that include learning by memorizing. In each area, there are four types of knowledge gained, namely: knowledge gained in class, knowledge gained outside class, knowledge gained on the weblog and new knowledge that pops up in mind. The pre-test/post-test scores were statistically analyzed using t-test for dependent samples (paired t-test). The sample group in this study consisted of 30 graduate students. After the study, the inquisitive mind scores of the samples were higher than before the study to a statistically significant degree at significance level .05.

**Table 1** Average score, standard deviation and t-test of the Inquisitive mind scores of the samples between before and after the study

Inquisitive Mind	n	$\bar{X}$	S.D.	t	Sig.
before the study	30	2.87	0.13		
after the study	30	4.62	0.22	30.98	.000

\* $p < .05$ .

3. The result of the assessment of online learning activities: Tackle Marvelous Station with IMTEAC Model via LINE application by 5 experts from 5 institutions was as follows: the mean was 4.93 and Standard deviation S.D. = 0.06.

## Discussions

The results of assessment on the creative online learning activities, through tackling the Marvelous Station with IMTEAC on Line application for graduate students enrolled in Innovation and Technology for Learning Management: CLM6607 by 7 experts showed an appropriate consistency score. The activity was applicable because the activity design was based on the analysis of learners, problems, needs of learners in terms of physical and mental readiness, learning style, tools or technology, content analysis, and activities designed according to the IMTEAC Model (Dangchamroon, 2016) which promotes an inquisitive mind and learning attributes that create interaction, with an emphasis on the fun before knowledge. Even though there were questions of how texting on Line could promote in depth knowledge, the positive atmosphere with creative communication through fun typed words and stickers on the chat together with creative learning activities through the chat are really encouraging and inspiring. This is in line with (Sproull & Kiesler, 1995 cited in Brown, 2002). No matter how tentative, people's ideas and mental models are to be shares. "In an online environment, words matter... Words are everything (Ryan & Deci, 2009)." Over the 3 days the teaching and learning activities conducted are as follows:

Marvelous Station Activity Day 1 "Analysis of technological innovation, digital media, electronic media, multimedia media" The key to creating works of art, creating innovations, technologies, electronic media, or multimedia media is imagination and creativity according to the formula  $e=m^2ci$  (Allen, 2008: Motivation<sup>2</sup>, Content Presentation, Interaction). Step 1 Getting ready to learn by using music, then using the Line Sticker Challenge to build readiness. Later, in step 2, create motivation for learning by watching the clip "Online learning via LINE" to make students see the importance of online learning activities through the LINE application. It promotes fun learning, enjoyable feelings or experiences, synchronous or real-time interaction, and exchange of knowledge in a positive learning atmosphere. LINE is an application or tool that supports this learning very well, which is why it was used for creative online learning activities. Then step 3 Relate and share previous experiences. This was a review of the assignment where students got to record their feelings. Connect with the value of this activity through clips "emotion records" (Life Skills: Realizing and appreciating oneself and others. Building good relationships with oneself and others. Dealing with emotions and stress. Problem analysis and the use of 5-step solution approach (Eng & Wantz, 1978). Assess each situation, issue and obstacle as well as various solutions then choose the best way. Step 4: Share new experiences. Start this process by engaging students with the question "How do digital media, technological innovation and multimedia promote learners' pursuit of knowledge?" Students got to participate in discussions on topics such as "How to make digital or multimedia

innovation interesting?" Step 5: Share, exchange, learn from hands-on practices by creating multimedia. Start with an uncommon self-introduction (stunning and interesting) as a creation or innovation level, and then select the coolest introductory clips of each group to compete with representative clips of other groups (evaluation level). The afternoon session is the start of the analysis of innovative and technological media, according to one's feelings towards the media nearby. Students then capture the pictures of innovations before creating one for the future world (individual contributions). Then the group selected innovations of fellow members to create group innovations by creating advertising media, then they analyzed the differences of advertising media viewed. Step 6 is the knowledge summary. It's the final stage of the Marvelous Station challenge. Day 1: Students summarized their knowledge by writing reflections and sharing them in an album in the LINE group.

Marvelous Station Activities Day 2. Step 1: Prepare before learning. At this stage, the instructor used a song and then used a Line sticker challenge to build readiness, creating awareness and excitement for the learners, followed by guessing words from the online clips of fellow members who have won 1 chance. Then step 2: create motivation for learning that integrated with Step 3: share previous experiences by using Long Ruay song to connect keywords that are related to innovation. Then Step 4: share new experiences by learning about the "magic" used in this important stage, which is to learn the formula for analyzing media technology innovations. Then analyze the advertising media. Step 5: Share, exchange, learn from practicality. After analyzing the media with the formula  $e = m^2ci$ , it comes to the learners selecting the best advertising media clip (from all the clips of all members of the group), then use the representative clips of the group to compete with other groups. And they voted for the best advertising clip. Then it came to the analysis of the performance media, the music video, and then each group sent a representative performance clip to compete with the other groups, then vote for the most impressive clip, followed by the analysis of the best animation clip. Step 6: Knowledge summary It's the final stage of the Marvelous Station challenge. On Day 2, students summarized their knowledge by writing reflections and sharing them at an album in the LINE group.

Marvelous Station Activities Day 3: "Creating Digital Media, Technological Innovation, Electronic Media, Multimedia Media" Step 1: Prepare before learning. In this stage, the instructor used music, then used Line sticker challenge and online word games to get students ready. Later, step 2: create motivation to learn. Use the song clip "How You Like That and Kill This Love] to connect the value and importance of imagination and creativity which is the key to technological innovation, digital media, electronic media or multimedia. Then, Step 3: share previous experiences. This was integrated with Step 4: share new experiences through clips of analysis of electronic media and digital media designs that promote learning to inspire students to see what their Master's seniors and Bachelor's juniors can do to assure them that they can do it as well. This leads to step 5: sharing and learning from hands-on practice. At this stage, all lovely members have created innovative technologies, digital media, electronic media, multimedia to solve problems and promote life skills according to the chosen topic. After creating a group work, each group shared and learned from the presentation. Fellow students provided constructive feedback or reflections, and acted as creative media judges for the impressive work pieces that followed the formula.  $e = m^2ci$ . Then they submitted the creative media innovation assessment score of each group of friends on the instructor's personal line. The instructor then announced the voting results. Finally, step 6 is the summary of the knowledge refinement. Students summarized the knowledge gained from the first stage on the first day to the third stage on the last day through clips, which required synthetic and analytical

thinking processes. This is also an important source of learning when knowledge is shared and exchanged with each other.

2. The result of conducting creative online learning activities with IMTEAC Model via LINE application was that the average score of attributes of an inquisitive mind of the samples was statistically significant higher than the beginning at .05. All online learning activities in the IMTEAC Model focused on activities that created engagement or fun interactions, happiness and joy. It also focused on creating an inspiring and positive vibe, which is a motivation that fosters a learning trait and promotes academic achievement. This finding is in line with other studies' findings that state students are engaged because they are inherently interested and enjoyable (Ryan & Deci, 2009). They found that in classrooms where teachers were more autonomy supportive, students tended to become more themselves, whereas in classrooms where teachers were more controlling, students tended to become intrinsically demotivated, and perceived themselves to be more competent, to feel better about themselves, whereas in classroom where teacher more controlling, students tended to lose motivation, to feel less competent, and to have lower self-esteem (Deci, Schwartz, Sheinman, and Raan, 1981 cited in Ryan & Deci (2009). Also Deci & Moller, 2005 cited in Ryan & Deci (2009). indicate that students tend to learn better when they are innately motivated, especially on defying tasks or those requiring conceptual development and understanding.

3. The evaluation results of using creative online learning activities on "Romping into the Marvelous Station" via the Line application as assessed by 5 qualified experts were that, overall, the IMTEAC model and the implementation of the model are found to be "the most appropriate" Since the researcher has used concept, principles and theories of Pedagogical Science, Technology and Educational Communication, Knowledge Management through Learning Exchange, Educational Psychology for creative online learning activities to create happiness and fun. Create a positive learning atmosphere for long lasting and meaningful learning outcomes for students and teachers, emphasizing advanced thinking processes by students who can generate knowledge on their own. Go through various activities from step 1 (I) prepare to start learning with a race/ challenge through a competitive game in the chat application, then step 2 (M) motivate learning through interesting open ended questions and discussions to emphasize the importance of the lesson learned through the story and then link to step 3 (T). Sharing previous experiences followed by a new challenge in Step 4 (E) sharing new experiences, then co-creating new innovations in Step 5 (A) Sharing and learning from hands-on practice, creating innovations. Step 6 (C) summarizes knowledge of each day (3 days), All these are online learning activities that focus on the feeling before knowledge with a focus on creative, inspiring interactions and a positive learning atmosphere. Emphasis is placed on teaching life skills through subjects. Focus on personal pursuit of knowledge, advanced thinking processes with 6 core competencies to promote the characteristics of an inquisitive mind. The experts' recommendations, various theories, including psychological theories, are utilized to design online learning activities that focus on learner participation (learner based). This is to make it interesting, valuable and can truly be applied. As the instructor for the organization design seminar, our goals were to provide an opportunity for learners to (a) learn the basic concepts of and models for organization design, (b) work collaboratively as a team in an online environment, (c) experience doing organization design for a real organization, and (d) have a learner-centered learning experience in the Fielding tradition that requires learners to take responsibility for their learning and the course environment (Sproull & Kiesler, 1995 cited in Brown, 2002). This is in accordance with the course design which is to use technological and other media to their greatest advantage for and online, team-based learning experience, the facilitator (Instructor) must clearly articulate the

design criteria for the course. As instructor for the organization design seminar, our goals were to provide an opportunity for learners to (a) learn the basic concepts of and models for organization design, (b) work collaboratively as a team in an online environment, (c) experience doing organization design for a real organization, and (d) have a learner-centered learning experience in the Fielding tradition that requires learners to take responsibility for their learning and the course environment.

## Conclusion and suggestions

Creative Online Learning Activities using IMTEAC Model via Line Application on Romping into the Marvelous Station is based on principles, concepts, and psychological theories. It includes self motivation, creating inspiring learning, encouraging an inquisitive mind organizing learning activities that focus on learners to build knowledge on their own. Teaching life skills through knowledge management, technology to promote learning, designing and developing e-learning lessons, and e-learning, etc., The purpose is to enable the future teachers who are now graduate students to choose creative innovative media in the role of user, as well as the role of creator in designing and creating innovations that are new, interesting, stimulating imagination, and promoting learning. All these shall encourage the desire to learn as well as develop skills in creating innovative media to resonate with the learners as mentioned above through online learning. It is a real challenge. In addition to the 6 steps of IMTEAC mentioned earlier, another important part is the 6 elements of the IMTEAC Model: technology, knowledge, activities, instructors, learners and evaluation.

1. Technology. We chose LINE application as an online platform for the class. Without meeting face-to-face, hearing voices, but a positive learning atmosphere, fun competitions and games and sticker duels create excitement, alertness, excitement and keep learners focused on having fun while leaning remotely on the screen. Messages and expressions with multiple stickers by learners and instructors took place simultaneously, quickly and seamlessly. It also connects all activities through LINE with science and art to be continuous, smooth and creatively reflective. This kind of interaction creates a feeling of freedom, relaxation, no pressure, and does not focus on boring, informative content. It emphasizes on the content that touches the mind through fun activities, like playing a game with challenges, level by level. We can win together as a team (group) and as a team of the whole class.

2. Tacit & Explicit is the introduction and integration of all abstract sciences into materialized substances. In the role of user and creator, the first concept is to realize the importance of innovation, media, and technology that promotes learning as well as design and innovation problems. The educators shall train themselves to break out of the traditional mindset with problems close to them. Evaluate diverse media and innovation examples. Learn your strengths and achievements. Then learn backwards from a successful creator about what to start with, how to think, plan, design and develop then work as a team. And most importantly, act as an evaluator to learn how to give constructive feedback to create inspiring and creative communication.

3. Activities (in and outside online classes and on weblogs) This is the main objective of the research, therefore, transforming the above content through online learning activities with the LINE application is a new and challenging task. Most instructors and learners are familiar with VDO Conference. So this novelty and distinction must be viewed as a highlight instead of a limitation. With fun and interaction for everyone to engage, exchange and learn

in every activity and every step, starting with (I) a race to prepare students to get ready and at the same time relax (from personal issues; school workload assignments, parent- learner issues) (M) After watching the touching stories then discuss and exchange the knowledge then link to (T) Transmission of previous experiences. Relating the content to past experiences leads to the fulfillment of happiness and pride (transforming negative feelings about past experiences into positive and valuable learning as the driving forces), then link to new challenges (E) and lead to further innovation (A) Finally, summarize the knowledge gained (C) in the form of synthetic writing and reflection through clips, which encourages advanced thinking.

4. Instructors are key to building intrinsic motivation for students. An important feature is listening with the heart, not just hearing, but listening for understanding and creative communication to inspire learners, both in terms of creating a positive learning atmosphere and creative problem solving and learning activities that focus on building knowledge through activities that create happiness and fun.

5. Learners. The key attributes are open mind, eager to learn, participate in discussions and exchange learning both in class and outside the classroom, as well as write reflections on knowledge, experiences, ideas and feelings to exchange learning on a weblog. Be sincere and respond truthfully to every activity attended.

6. Evaluation. Pre- and post-learning attributes are important to help learners and instructors empirically identify learners' pre- and post-learning attribute scores. The features of an inquisitive mind or Su Ji Pu Li (Sutta Jinta Pucha Destiny: Philosopher's Heart) are part of the key attributes of learners in the 21 century.

### **New knowledge and the effects on society and communities**

Creative Online Learning Activities using IMTEAC Model via Line Application on Romping into the Marvelous Station in Innovation and Technology Learning Management has helped teachers who are now taking the role of graduate students develop advanced thinking skills in at least in 3 parts: 1. As a user who can analyze and evaluate innovative media on what conceptual keywords are and their importance. How the media presented those, and to what extent students will gain knowledge in Cognitive Domain, Affective domain, and Psychomotor domain? How do teachers connect them to the lessonst? Overall, is this innovative media appropriate? 2. As a creator, they can Innovative media are then selected to integrate with course content to promote learners' learning. As a creator who can analyze problems and identify the needs of innovative media development, including the design and development of innovative learning media that meet the requirements including learners' needs and nature. In addition, during the development of innovative media, the teachers have practiced evaluating peers' work by communicating creatively, inspiring fellow creators so that they can apply them to build or inspire students in the class to want to develop their own work without embarrassment, regret, or discouragement (how to comment creatively) It also promotes analytical skills at the advanced cognitive level, as well as incorporate life skills. Desirable attributes, combined with learning activities that promote 6 core competencies of learners with the IMTEAC Model, make learners reflect that they want to learn with teachers again. They are inspired to learn and inspired to develop themselves.

When graduate students apply the skills they have learned to develop innovative learning materials in the subjects they teach, this results in Part 3: Group Innovation Skills which leads to individual innovation skills in the course Individual Study. It is a research to create innovations in promoting learning through a systematic research process. The direct impact on full-time teachers in the role of graduate students is happiness and pride in their innovation. And when they are happy and enjoy learning, they are proud of their teaching profession. Many teachers have created innovative media for contests and joyfully received awards from government agencies.

**The summary of knowledge realization through writing of graduate students that reflects the characteristics of an inquisitive mind (from listening- speaking- reading- writing). Day 1** (cited in Dangchamroon, 2020) is as follows: Step 1 (I) -> Have students send a Line sticker through the sticker challenge activity to set the positive learning atmosphere. Encourage students to be ready to learn, talk, greet, review previous knowledge recorded in the journal of feelings, and watch video clips. Take photos of positive and negative feelings in groups, which are relevant to the lesson. This is to motivate students so that they can relate to the feelings recorded in order to better understand themselves. Step 2 (M) -> After watching the video clip, questions are asked for students to interact with. Students got to provide feedback and reflect on the idea of the 5-step solution from the journal activity. This is to realize the problems, obstacles, various methods, assessing the situation and choosing the best way to deal with their feelings. Step 3 (T) -> The instructor asks how multimedia and digital media help promote learners' learning? What is "digital media"? How to make digital media interesting? The answer is> Digital media and multimedia help students learn more and understand more deeply since they come with clear and interesting illustrations. The images must be beautiful, colorful and modern plus movement and sound effects. All the elements must cater to the interests of the learners, suitable for the age, encouraging the learners to learn well, being able to study anytime and anywhere. Step 4 (E) -> The instructor encouraged students to create easy multimedia by making a self introduction clip that is stunning, impressive, with a wow effect and then exchanged with each other. This is a student-centered learning activity that allows students to dare to think out of the box and act it out. Student will acquire imagination and creativity which are the key to technological innovation. And the instructor motivates students through the self- introduction clip contest, having everyone vote and giving prizes by assigning the winner to challenge others in the sticker challenge activity. The afternoon session begins with a sticker duel (Step 1:I) to check readiness before the teacher (Steps 2- 3: M- T) starts showing a clip about Edgar Dell's Experience Cone. It says memorization lasts longer when you do something by yourself, and students will become creative when they are stimulated. Later, (Step 4: E), the teacher and students exchanged their knowledge through a 60-second mission in finding one picture of an innovation that solved the problem, which caused excitement and enthusiasm among the students. Step 5 (A) -> Group members choose 1 innovation of their group and create an advertising clip. This activity requires them to brainstorm, create and present their innovation. Make a video clip and exchange in the classroom (chat Line) Everyone gets to see the presentation ideas of each group. Compelling and creative presentations are the key to creating innovation for students and teachers. They get to be creative and imaginative about Innovation in the future and to exchange ideas as well as do it hands-on. When an unconventional ad is presented, the teacher showed the 3 advertising clips, and encouraged the students to think by asking what is different between the 3 advertisements. Step 6 (C) -> The activity generates knowledge in the production of technological media, realizing what factors we should focus on, which leads to a good understanding of media. And finally the professor summarizes the knowledge of media analysis

using the formula to calculate (the formula consists of motivation: we must create a challenging atmosphere, stimulate curiosity, perhaps by questioning, stimulating imagination and setting learning atmosphere. The learners shall enjoy what they have chosen or made decisions to learn. And it's best if the lessons are learner-based. When they enjoy the lessons, they can learn and process the content well. The content should be applicable and appropriate, not too easy and not too difficult. It should be in various forms, and meaningful where students can relate. It should be a fun and new experience where they get to learn to solve problems, practice in a fun way, and eventually, they will benefit from what they learn; the key to increasing motivation (Allen, 2008). Design screens and applications based on Edgar Dale's experience cone. The lessons should not involve only texts or images but should allow students to think critically then execute as well. They should be designed to challenge and make them proud of their finished work. This will help increase their motivation and encourage them to stay focused and learn more.

**Example of processing the summary of knowledge through journals of graduate students that reflect the characteristics of an inquisitive mind ( from listening-speaking-reading-writing)**

Day 2 (cited in Dangchamroon, 2020) Friday (happy) Yayyy!, it is the 2nd day of the second subject I have taken with Professor Apicha. I feel like I have bipolar disorder because I'm happy to graduate, but I'm heartbroken that my wait for the class is about to be over. But then I will have to wait for a few more months to study with my teacher again. I will miss her. Thinking about this back and forth, the sounds of the Line notifications tell me that the battle of fun is about to begin. The Key to Innovation + The Key to Learning : These two things are not different because they share the same key factors; namely, 1. Creating a positive atmosphere 2. Student-centered learning management. Therefore, when the heart is there, the students will definitely gain both knowledge and love. Today's lessons went by quickly, not because the teacher taught fast, but it was like I had really slipped into the adventure world because the teacher showed us various VDOs, starting with laughter. When I realized it, I was in tears. The fellow teachers surrounding me at the time voted (bipolar = P(me)). But not only that. You have changed my world of viewing media or VDO of prints ever since you talked about  $e = m^2 ci$ .  $m$  = motivation,  $c$  = content presentation,  $i$  = interaction,  $e$  = e-learning outcome. It keeps repeating in my head. Until now, I was about to press the queue at the restaurant, but while waiting, I accidentally opened your YouTube video. I keep thinking about what  $m$ ,  $c$ ,  $i$  mean in this clip.  $e = m^2 ci$  has changed my view of media. All of these are useful and can be applied very well for both classroom teaching and life. After a day slipping into the world of adventure, what we have gained is so meaningful to briefly describe in writing or speaking, but I know I am really happy and my heart is full of joy.

**Example of a summary of knowledge through journals of graduate students that reflect the characteristics of an inquisitive mind ( from listening- speaking- reading-writing) Day 3 (cited in Dangchamroon, 2020: KrooPond, 2020)**

First of all, I would like to talk about the activities that teachers assigned last class, which is the journal. I have recorded my feelings for 15 days. At the end of it, I looked back and read what was going on. It was great that I knew my feelings and the reasons. And I learned that there were few negative feelings. In fact, there are only 2 things, the one that I often encounter is the frustration when my girlfriend complains. When I realized I was frustrated, I walked away to calm down. The teacher also recommended using a 5-step solution (Eng & Wantz, 1978). I just wrote down exactly the problem and assessed each situation to see which was good and which was bad, and chose the best solution. Then it came to what I learned last Thursday and Friday,  $e = m^2 ci$  (Allen, 2008). All these were circling in my head. The

knowledge derived from e-learning regarding m<sup>2</sup>= motivation<sup>2</sup>. Motivation is very effective. It leads to curiosity, challenges. C = Content Presentation. Engaging presentation of interesting content. I = Interaction (with learners) It encourages the recipients or the learners to relate to us and what we want to convey. The first day we did some analysis. The 2nd day we did a lot of analysis all day. We got to watch clips of both advertisements, animation and etc. and analyzed m c i from those clips. Especially this clip (The Legend Of The Crabe Phare: TheCGBros, 2018) gave me a headache. I'm proud to have done all these. How does it affect my life? I'd like to share it with you. After I studied on Friday, I was at home on weekends watching manga with my son YuYu Hakusho. It was a cartoon that I watched when I was a kid and it was so much fun, so I invited my kids to watch it. Instead of watching kicks and punches, my brain automatically started to process. Hey! (m) What challenge was created for us? Why do we want to see it? Why are we interested in it? Why do we need to follow it? Hey!, (c) what is the content being presented to us? (i) The producer creates emotional relevance. What interaction was created for us? Oh, the issue is offering sacrifices to the teammates. I sat down and analyzed this in stages, and when I changed the eating scene, I analyzed all the scenes, one by one. Even in the dining scene, I keep thinking why he had to eat this kind of food. (need assessments) I usually watch it for some quality time with my child, but it turned out that this time I couldn't talk to him about what MCI is. It is too complicated. And if you talk and analyze MCI for your child, it will be weird (laughs). However what I really got from today's activity was creating your own media from selected topics. My group selected Life Skills in the section. "Building good relationships with oneself and others" Now that we have the topic, we have to interpret the 5 factors that the teacher has given. What does 'others' mean? friends, or peers, or parents? But with the circumstances these days, kids are always on social media, addicted to games. They might lack interaction and relationship with parents, so I chose to work on the topic good relationships with parents (need assessments). I sat down and saw that we had 3-4 people. I was worried whether my friends would come, how to delegate, etc. Then all my groupmates arrived in the afternoon. We started to brainstorm (online) with all the magical powers that you gave me. It has to be new, full of imagination and creativity. The characters we put in must be extraordinary. There must be a fantasy element in order to attract children. Everybody fully participated. At first, it was a reintroduction of a true story of a student. When the teacher suggested that there should be some imagination involved, we changed to an alien to make it unique. Then we discussed what aliens have to say (Chuck Kapui Duk Dui) and analyzed MCI to see what colors it should be. Then G drew a picture. Mi added bright and beautiful colors, using all the principles that the teacher taught. Finally, when we create media or create something, we just think about MCI automatically. This is the same as what you discussed on the first day about the Edgar Dale experience cone. If we do or practice something hands-on, we will remember it well. We learned MCI on Friday. Weekends we didn't think about revising it, but it does automatically pop up while watching cartoons with my child. On Monday, it proved to be really applicable. I was really proud of this animation. Proud that friends like it and the teacher likes it. Above all, everyone in the group likes it very much. It's one of the best work pieces at the end of the semester for our group. Thanks to Teacher Apicha, who really put effort in teaching us. It feels like we have a weapon in our hands to create a medium. Utilize technology, putting together knowledge to work on something which has been proven that we can do it. Thank you very much.

In addition, effective teachers are typically described as those who develop relationships with students that are emotionally close, safe, and trusting, that provide access to instrumental help, and that foster a more general ethos of community and caring in classroom. These relationship qualities are believed to support the development of student's emotional

well-being and positive sense of self, motivational orientations for social and academic outcomes, and actual social and academic skills. They also provides a context for communicating positive and high expectations for performance and teaching students what they need to know to become knowledgeable and productive citizens (Wentzel, 2009)

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## Physical Fitness and Fitness Criteria for the students of the Border Patrol Police School, Ban Mai Pattansanti, Mae NaChon, Mae Chaem, Chiang Mai

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### Abstract

This research has the ideology for the study, strengthening and organizing physical sidewalks of students at Ban Mai Pattanasanti Police School, Mae Nachon, Mae Chaem, Chiang Mai. The population used in this research was both male and female students. Border Patrol Police School, Ban Mai Phatthana Santi, Mae Nachon, Mae Chaem, Chiang Mai 42 students who are currently enrolled in the 2018 academic year aged 4-12 years and the research tools consisted of 6 physical fitness tests.

The research results were found that physical development of school children in various fields Have improved In which children can respond better to the command and follow the instructions of the teacher. You can also set up physical fitness criteria. That is suitable for a sample as well and physicalperformance after having tested before and after appeared to improve physical performance.

**Keywords:** Physical development, Physical fitness, Exercise, Student center

## Introduction

In the National Economic and Social Development Plan No. 12 (2017-2021), the country's development guidelines have been laid out as follows. By adhering to the philosophy of sufficiency economy, sustainable development and people as the center of development. Chiang Mai Province is a province with a high level of development and potential for tourism. Economy and investment there are many natural and cultural tourist attractions. Has a long history which was the location of the Lanna Kingdom in ancient times. There is Lanna language (Kham Mueang) which is the local language of Chiang Mai Province, which is unique and different from other provinces in terms of traditions. It has a beautiful culture and can be considered the capital of the northern region and the second largest city in Thailand due to Her Royal Highness Princess Maha Chakri Sirindhorn. Princess Maha Chakri Sirindhorn by following His Majesty the King and Her Majesty the Queen Visiting the people, he learned that most rural youth faced problems. Malnutrition, health problems. This will have a link to educational problems because when children and youth have poor health was unable to receive a good education through the mercy of Her Royal Highness Princess Maha Chakri Sirindhorn. Therefore, he bestowed quality of life for students at the Coastal Patrol Police School. Anyone who has contact with the people living along the coast will know that those areas are home to people of many nationalities. There is a diversity of languages, cultures, traditions. People living in that area are on the verge of not knowing that they are Thai. Due to communication problems, using different languages and not understanding each other, this greatly affects national security. From the police patrolling the border, they encountered people living in remote areas and tried to understand those people that they were Thai people. By providing education until it became the Border Patrol Police School. And Border Patrol Police education centers established throughout the country. It is considered the good fortune of Thai people living in remote areas, far from transportation, to receive the royal grace of Her Royal Highness Princess Maha Chakri Sirindhorn. Princess Maha Chakri Sirindhorn in doing work with different hands instead of royal ears His Majesty's delight His Majesty the King Her Majesty the Queen and Her Royal Highness Princess Srinagarindra Boromarajonani In all royal duties that he has always worked at the Border Patrol Police School.

Therefore, the researcher has realized the importance of solving problems related to health promotion and disease prevention. Treatment and restoration of health to the people locals and physical fitness plays a crucial role and is closely related to work in every occupation. This is because good physical fitness enables individuals to work for extended periods with high efficiency. It also provides the capacity to confront life's challenges without emotional stress and allows for the adjustment of the mind and emotions to suit each individual's condition. Therefore, physical fitness is an essential factor for any occupation researchers are well equipped with academic knowledge to integrate and cooperate with agencies that will help drive research to achieve full results. This is the reason why the researcher is interested in conducting research on "Physical fitness and fitness criteria for the students of the Border Patrol Police School, Ban Mai Pattan Santi Community, Mae Na Chon, Mae Chaem, Chiang Mai". This was a research project that involved students in the Banmai Patanasanti Border Patrol Police School and teachers in the school. In addition, in order to enhance fitness and establish physical fitness criteria. By appropriate to age gender and age. It is also a survey of physical fitness information. To create a standard physical fitness criteria. For evaluating results that are appropriate for students and can be used to perform physical

fitness tests and serve as guidelines for physical, mental, emotional, social, and intellectual development. of the students of the Banmai Patanasanti Border Patrol Police School.

### **Objective**

1. To study the physical fitness of students at Banmai Phatthana Santi Border Patrol Police School. Mae Na Chon, Mae Chaem, Chiang Mai.
2. To prepare physical fitness criteria for students at Banmai Phatthana Santi Border Patrol Police School. Mae Na Chon, Mae Chaem, Chiang Mai.
3. To promote physical fitness and strength.

### **Methodology**

In this research, the researcher studied information on fitness enhancement and preparation of physical fitness criteria for students at Ban Mai Phatthana Santi Border Patrol Police School, Mae Na Chon, Mae Chaem, Chiang Mai.

Population and sample population used in this research. There are male and female students of the Ban Mai Phatthana Santi Border Patrol Police School, Mae Na Chon, Mae Chaem, Chiang Mai who are studying in the academic year 2019, between the ages of 4-13 years, number 42 people which was obtained from a simple random sample.

The sample group consisted of both male and female students of the Ban Mai Phatthana Santi Border Patrol Police School, Mae Na Chon, Mae Chaem, Chiang Mai. Who are studying in the academic year 2019, between the ages of 4-13 years, divided into 23 males and 19 females, totaling 42 people.

Research instruments used in this research. The researcher uses tools created by the researcher, which consists of the physical fitness test consists of 8 items Including weight measurement, height measurement, sitting and bending posture assessment, hand grip strength measurement, rolling to catch a ball with the left and right hands, standing long jump, object retrieval while running, swinging, and catching a ball with both hands as follows: Weight (kg), Height (cm), Sit and Reach (cm), Shuttle Run (sec), Throw and catch a ball with 2 hands (30 sec), Standing balanced (sec), Grip Strength and Roll to catch the ball left-right (1 min). Equipment used in conducting physical fitness tests. Use the following equipment: weight scale, height meter, BMI and WHR calibration table, hand grip dynamometer, back and leg dynamometer, long jump rubber mat, distance measuring tape approximately 60 inches long or ruler measuring tape divided into centimeters approximately 30 centimeters long, distance measuring tape or ruler not less than 25 inches long. Finger and stopwatch.

### **Data collection**

1. Consider the test taking into account standardization. Covers the main components of physical fitness. It is a test with not very complicated techniques. It does not waste a budget or can be applied and modified.
2. Prepare a record sheet for the sample group for testing and enhancing physical fitness.
3. Providing tools, equipment, and facilities and test the data collection process system.
4. Coordinate with the sample groups that must be tested for each item.
5. Set the date, time, and location of data collection.
6. Collect data on the specified date, time, and location.
7. Analyze data and prepare physical fitness criteria. Ready to try out.
8. Printed as a book for distribution to educational institutions. and various agencies.

## Data analysis

Part 1 The results of the study of the body image status and size of the sample presented the mean ( $\mu$ ) and standard deviation ( $\sigma$ ) of the number of males and females in each age group in the form of tables and charts.

Part 2 Results of the physical fitness study of the sample group.

2.1 Present the mean ( $\mu$ ) and standard deviation ( $\sigma$ ) values in tables and graphs of test results including weight, height, sit and reach, shuttle run, throw and catch a ball with 2 hands, standing balanced, grip strength and roll to catch the ball left-right. Divided into males and females, ages 4-6.

2.2 Present the mean ( $\mu$ ) and standard deviation ( $\sigma$ ) values in tables and graphs of test results including weight, height, sit and reach, shuttle run, standing broad jump, grip strength. divided into males and females, age range 7-9 and 10-1.

## Results

This research study has the research objectives. To study fitness enhancement and preparation of physical fitness criteria for students at Banmai Phatthana Santi Border Patrol Police School, Mae Na Chon Subdistrict, Mae Chaem District, Chiang Mai Province. To have growth and development appropriate to age by analyzing data divided into 2 parts as follows.

Part 1 Analysis of study results regarding the status and body size of the male and female sample groups. Ban Mai Phatthana Santi Border Patrol Police School, Mae Na Chon Subdistrict, Mae Chaem District, Chiang Mai Province.

**Table 1** Number and percentage of male and female samples in each age group

Age range (years)	Male		Female		Total	
	Amount	Percent	Amount	Percent	Amount	Percent
4 - 6	8	19.05	5	11.90	13	30.95
7 - 9	12	28.57	4	9.53	16	38.10
10 - 12	3	7.14	10	23.81	13	30.95
<b>Total</b>	<b>23</b>	<b>54.76</b>	<b>19</b>	<b>45.24</b>	<b>42</b>	<b>100.00</b>

From table 1 it is found that males and females, age range 4-6 years, accounted for the percentage. 30.95, ages 7-9 years accounted for 38.10 percent and ages 10-12 years accounted for 30.95 percent and were male. Accounted for 54.76 percent and were female. Accounting for 45.24 percent, total 100.00 percent.

Data analysis of physical fitness study results of male and female samples of the students of the Ban Mai Phatthana Santi Border Patrol Police School, Mae Na Chon, Mae Chaem, Chiang Mai.

**Table 2** Mean and standard deviation of physical fitness of male and female samples, age range 4-6 years

Test items	Male		Female	
	$\mu$	$\sigma$	$\mu$	$\sigma$
Weight (kg)	22.55	2.31	16.18	2.52
Height (cm)	110.38	36.80	106.00	6.96
Sit and Reach (cm)	31.13	3.08	32.10	3.03
Shuttle Run (sec)	6.71	0.57	7.54	0.64
Throw and catch a ball with 2 hands (30 sec)	6.00	2.51	4.00	1.41
Standing balanced (sec)	53.75	15.75	51.00	20.12
Grip Strength	58.63	7.37	55.80	5.40
Roll to catch the ball left-right (1 min)	30.13	4.39	27.80	2.77
<b>Total</b>	<b>39.33</b>	<b>4.80</b>	<b>33.05</b>	<b>5.36</b>

From table 2 the male sample, age 4-6 years, found that the highest mean of physical fitness was height with a mean of 110.38, followed by Grip strength with a mean of 58.63, standing balance with a mean of 53.75, sit and reach an average of 31.13, roll to catch the ball left-right an average of 30.13, weight had an average of 22.55, shuttle run an average of 6.71, and throw and catch a ball with 2 hands had the lowest average of 6.00, respectively.

The sample group of females aged 4-6 years found that the average of the highest physical fitness was height with an average of 106.00, followed by grip strength with an average of 55.80, standing and balancing with an average of 51.00, and sit and reach. had an average of 32.10, roll to catch the ball left-right had an average of 27.80, weight had an average of 16.18, shuttle run an average of 7.54, and throw and catch a ball with 2 hands had the lowest average of 4.00, respectively.

**Table 3** Mean and standard deviation of physical fitness of male and female samples, age range 7-9 years

Test items	Male		Female	
	$\mu$	$\sigma$	$\mu$	$\sigma$
Weight (kg)	26.20	3.02	22.55	2.50
Height (cm)	132.00	13.54	137.07	11.43
Sit and Reach (cm)	34.62	2.61	34.36	3.40
Shuttle Run (sec)	13.35	0.72	13.50	0.93
Standing broad jump (cm)	142.89	24.31	139.50	16.21
Grip Strength	16.97	6.61	34.36	5.19
<b>Total</b>	<b>61.60</b>	<b>8.38</b>	<b>62.96</b>	<b>5.90</b>

From table 3, the male sample, age 7-9 years, found that the average of the highest physical fitness was standing broad jump with an average of 142.89, followed by height with an average of 132.00, and sit and reach with an average of 142.89. 34.62, weight had an average of 26.20, grip strength had an average of 16.97, and shuttle run had the lowest average of 13.35, respectively.

The female sample, aged 7-9 years, found that the average of the highest physical fitness was standing broad jump with an average of 139.50, followed by height with an average of 137.07, sit and reach with an average of 34.36, and grip strength have an average of 34.36, weights have an average of 22.55, and shuttle run had the lowest average of 13.50, respectively.

**Table 4** Mean and standard deviation of physical fitness of male and female samples, age range 10 - 12 years

Test items	Male		Female	
	$\mu$	$\sigma$	$\mu$	$\sigma$
Weight (kg)	44.03	6.21	39.62	10.39
Height (cm)	156.67	7.51	143.00	6.72
Sit and Reach (cm)	35.43	4.05	35.00	3.06
Shuttle Run (sec)	13.49	0.78	13.43	1.06
Standing broad jump (cm)	28.03	6.89	20.92	3.77
Grip Strength	171.33	37.82	143.70	16.77
<b>Total</b>	<b>74.83</b>	<b>13.59</b>	<b>65.94</b>	<b>5.80</b>

From table 4 the male sample, aged 10-12 years, found that the average of the highest physical fitness was grip strength with an average of 171.33, followed by height with an average of 156.67, weight with an average of 44.03, and sit and reach an average of 35.43, standing broad jump an average of 28.03, and shuttle run the had lowest average of 13.49, respectively.

The sample group of females, aged 10-12 years, found that the highest average of physical fitness was grip strength with an average of 143.70, followed by height with an average of 143.00, weight with an average of 39.62, and sit and reach. The average was 35.00, the standing broad jump an average of 20.92, and the shuttle run had the lowest average of 13.43, respectively.

Through the comparison of all three age groups, different skills are found in each range. In the age range of 4-6 years, it is found that the highest average physical fitness is in height. In the age range of 7-9 years, the highest average physical fitness is found in standing and long jumping. In the age range of 10-12 years, the highest average physical fitness is found in hand grip strength.

## Discussions

### In terms of size and physical fitness

By the sample group used to collect data. There were a total of 42 people, divided into 23 males or 53.48% of the sample. and there were 19 females, or 46.52% of the sample. and the population used to collect this data They are students at the Banmai Phatthana Santi Border Patrol Police School, Mae Na Chon Subdistrict, Mae Chaem District, Chiang Mai Province. Both male and female between the ages of 4 - 12 years, divided into 23 males and 19 females, totaling 42 people. Population this time more males than females. This is in line with the Office of the National Economic and Social Development Council (2019, p.128). Regarding the proportion of the population in Thailand with the number of females being 33,626,627, accounting for 50.97%, the number of males being 32,355,032, accounting for 49.03% from the country's total population of 65,981,659 in 2013. But the number of samples in each age group and gender. It may not be consistent with the age range. Gender of the population of students at Ban Mai Phatthana Santi Border Patrol Police School, Mae Na Chon, Mae Chaem, Chiang Mai, as expected. The researcher will conduct a survey next year. There will be changes to some tests to make them more suitable for your physical condition.

Body weight: both males and females in the sample were underweight between the ages of 4-6 years and tended to increase continuously. As age increases when comparing body weight between males and females. It was found that females weigh about 1-3 kilograms more than males and when compared to the body weight of Thai people. The sports authority of Thailand (2000, p.35) conducted a study on the physical fitness standards of Thai people. It was found that the research sample had weight. More than about 1-2 kg for both males and females. Females tend to gain slightly more weight than males. For weighing the body is important in everyday life. Because it is an evaluation of body size. Growth condition of obesity and the state of malnutrition or abnormalities caused by certain diseases, which Hubley-Kozey (1991, p.58) mentioned the element of height to be considered as well check your own weight to see how much it has increased or decreased. Can be weighed and measured normally, from day to day body weight can change up to + 1 kg for children. And each day's weighing should be at the same time. And the clothes you wear should be as lightweight as possible. Weighing yourself without clothing gives the best idea of your weight.

Height: the male sample has the highest height in the age group of 10-12 years, but females are generally 1-6 centimeters taller than males when compared to the height of Thai people. Kerdchantuk (2000, p.63) conducted a research study on the physical fitness standards of Thai people in 1999 and found that they were very similar in almost every age group, both males and females. But between the ages of 10 - 12 years, females have more differences than in other periods. In this study the highest heights were in the age range of 10-12 years, with the average male being 156.67 centimeters and the average female being 143.00 centimeters. Although the sample size may have been too small. However, from a study of physical fitness criteria for Thai people in 1999, there were a large number of samples in this age group and the average height was similar to this study. It is enough to say that it is a height that meets the minimum height target of Thai youth set by the Department of Health, Ministry of Public Health. Expected in the year 2000 targeted at Thai people aged 20 years with an average height of 169.60 centimeters for males and 157.70 centimeters for females. This is in accordance with the Department of Health (1999, p.21), showing that the guidelines for physical development of Thai children and youth are reasonably in line with the desired guidelines. And in line with

Israsena (2018) conducted research to compare the physical, emotional, mental, social and intellectual development of early childhood children before and after receiving physical activities using media from waste materials. It was found that changes in the physical, emotional, mental, social and intellectual development levels of early childhood children before organizing physical activities using media from waste materials. Early childhood children had an average physical, emotional, mental, social, and intellectual development score of 38.17 after organizing physical activities using media from waste materials. Early childhood children's average scores for physical, emotional, mental, social, and intellectual development were 54.11. And after the experiment, early childhood children had higher levels of physical, emotional, mental, social, and intellectual development than before the experiment, with statistical significance at the .05 level. Keywords: physical activity, early childhood development.

For the test of sit and reach. It measures the flexibility of the muscle groups in the area. Posterior thighs and lower back of the sample, both male and female. It was found that the age group of 10-12 years was most flexible by sitting and bending over. This is consistent with Heyward (1991, p.23) who said that it is sometimes used as an indicator of people who have back pain (lower back pain) to a certain extent. Morrow et al. (2000, p.42) conducted a research study. This time, it was found that males were 10-12 years old and females were 10-12 years old. It is flexible by being able to sit and bend as much as possible and is better than males. It may tend to gradually decrease as people get older. It is caused by changes in the elasticity of tissues, synovial fluid (Synovial fluid) and a decrease in the level of physical activity of the body. As a result, it has decreased flexibility. Heyward (1991, p.51) conducted a study and found that females are always more malleable than males. Because the characteristics of the pelvic structure and hormones of females result in connective tissue being more flexible than males. In daily life persons with soft, flexible joints and muscles It will have a positive effect on your personality. Physical movement usually does not cause body aches and pains. Physical exercise activities or stretching your muscles regularly. In addition to making the body more flexible, it also increases the efficiency of movement. Relieve muscle pain menstrual cramps reduce tension in the nervous system and muscles. It can also reduce breathing rate and symptoms of high blood pressure.

For testing shuttle run of the sample, both male and female. It was found that the age group of 7-9 years was the most agile. Then the fitness will gradually decrease with age and when comparing males and females, it was found that males have higher ability to run and collect things. More than females of all ages females will have an average agility of approximately 13.35 that of males. Which is a storage run test. It is a test that has high accuracy and is used to measure performance and agility. This is a muscle that is important to a good personality and health. Hoeger & Sharon (2002, p.49) testing is generally agile. There are various methods such as zig zag running, etc. But this method may cause injury to the ankle and thigh muscles and while testing the thigh muscles. The muscles required to flex the hips must be more forceful. Shuttle run is therefore a test of agility in particular. and greatly reduce the risk of danger that may arise from testing

For testing grip strength and standing broad jump. It is a test of the strength and endurance of the upper body muscles of the sample, both male and female. It was found that the age group of 10-12 years had the highest muscular endurance strength, consistent with Wilmore & Costill (1994, p.48) who studied the results of a weightlifting competition and found that Females have about 63% of the muscle strength of males. In addition, there has been a study of the muscle strength of the upper body. Females have approximately 43-63% of the strength of males. The reason why males are stronger than females. Due to the size and shape

components of the body, especially muscles physiological response to training, etc. However, in this research study Data from a muscular strength and endurance test. It is consistent with the above principles. Both in terms of maximum strength in the age range decline with age or differences between the genders very well and Robbins et al. (1999 , p.55) stated that in the test postures of males, the arms, chest, and shoulders will bear more weight than females who applied the postures. To reduce body weight by using the knees to touch the floor, while McArdle et al. (2000 , p.37) while testing (modified push-ups) instead of using the toes to touch the floor. From this study it was found that male, age 10-12 years females have the highest upper body muscle endurance. After that, it will gradually decrease with age as well. Males performed more tests than females at every age group. Females will have about 68% more strength and endurance in their upper body muscles in the push-up test than males, and McArdle et al. (2000, p.61) have mentioned that their muscle mass will be high. The highest age range is 16-20 years for males and 18-25 years for males. In females, male strength is highest between the ages of 20-30 years, while females are highest at the age of 20 years. The decline continues. When you get older In general, after age 30, muscle strength will decrease by 1.0-1.5% each year until age 70, after which the rate of decline may be even greater. It depends on each person's lifestyle. This is consistent with Chatwirot (2008) who conducted research to study health problems and health promotion for preschool children. of parents and teachers in the Kamphaeng Phet community area using a questionnaire asking 341 parents of preschool children aged 3-6 years in the Kamphaeng Phet community area and teachers of preschool children aged 3-6 years in the area. Kamphaeng Phet community totaling 70 people. The research results found that health problems of preschool children in the Kamphaeng Phet community area. The overall level was at a minimal level. The overall level of promoting the health of preschool children by parents was at a moderate level. And the overall health promotion of preschool children by preschool teachers is at a high level.

In conclusion, this research study provides information on enhancing fitness and creating physical fitness criteria. Having a very thick and obese body size will cause various physical abilities to decrease. Having physical abilities in various aspects. A good body shape will result in an appropriate size and proportion. For males, having good physical fitness in one area usually leads to good physical fitness in other areas as well, or it can be said that it affects good overall fitness. For females, physical fitness in any aspect is good. It may not affect other aspects of physical fitness as well. This may be the result of elements within the body. Daily routine response to training selecting specific exercises for specific areas. As a result, each aspect of physical fitness is still not as balanced as it should be Corbin et al. (2013) define physical fitness as the body's ability to perform duties efficiently, which includes 5 components related to health 1) cardiovascular endurance 2) muscular endurance 3) flexibility 4) muscle strength 5) body composition. These components help promote and support the quality of life. Additionally, physical fitness related to skills includes 6 components: 1) agility 2) power 3) reaction time 4) balance 5) speed 6) coordination. These components contribute to the fitness of specific movements, especially for athletes. This study revealed the enhancement and preparation of physical fitness criteria for students at the border Patrol Police School. Including models for developing physical fitness makes students experience changes in their bodies. Obtain correct and appropriate methods for testing the body. Have knowledge, understanding and guidelines in practice very well. Such as research of Chaiyamang (2020) to study development of movement skills of preschoolers. This research will result in the community, parents and schools to be aware of the development of movement in preschool children together, including being a preliminary examination and screening of preschool children with problems in movement development so that preschool children can receive care and treatment

in a timely manner and allow preschool children to return to normal. The results of this research will result in a program for developing movement, exercise and physical fitness tests for preschool children. However, the results from this research study can also promote and organize exercise activities. They also know about their health and physical fitness. and can solve physical fitness problems. As well as giving advice and advice on exercise. And most importantly, physical fitness criteria can be prepared. In order to prepare it as a standard for further dissemination.

### **Conclusion and suggestions**

This study revealed the enhancement and preparation of physical fitness criteria for students at the Border Patrol Police School. Including models for developing physical fitness makes students experience changes in their bodies. Obtain correct and appropriate methods for testing the body. Have knowledge, understanding and guidelines in practice very well suggestions for next research. The fitness and physical fitness criteria for students at the Border Patrol Police School should be strengthened and thoroughly developed in other related schools. Furthermore, the research findings can also be utilized as criteria for testing in other Border Patrol Police Schools.

### **New knowledge and the effects on society and communities**

The researcher has seen the physical fitness of the students in the Border Patrol Police School, seen the physical changes of the Border Patrol Police students, and also has internal factors that affect the physical development of the students. This is the teaching curriculum in schools that should give importance to physical education. To strengthen the body and understand the correct physical examination method. And external factors that affect the physical development of Border Patrol Police students include economic conditions, social conditions, and equipment and places for exercising students that are not yet conducive to students as they should Increase access to communities and target group villages to enhance access to physical fitness information.

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## Social Semiotic Analysis of Textbooks and Cultures of Learners in EFL context

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### Abstract

Textbooks have been considered as essential tools in language classrooms as they mediate learners to acquire knowledge through language and norm representations. However, in a classroom where English is taken as a foreign language (EFL), there exist some issues for language teachers to take into account when implementing textbooks into classroom practices. This paper presents an analysis of textbooks and cultures of learners in EFL context. The selection of the textbooks deployed seven textbooks published by western-oriented presses and was based on their use in EFL classroom practices. The textbooks have been implemented with learners in all levels. The concept of Social Semiotic was taken to analyze the textbooks by employing three domains namely text, images, and tasks. The results revealed mismatches between textbooks and learners' cultures as the texts provided repetitive language patterns and unfamiliar lexical presentations. While, the images symbolized attitudes and cultures which partly excluded the learners from the lessons. Lastly, the tasks contained dominating discourse that anticipated the learners to assume the vicarious experiences. This paper also provides the discussion and implications for applying textbooks into classrooms.

**Keywords:** Social semiotic analysis, Textbooks, Cultures of learners, EFL context

## Introduction

Textbooks have been playing a pivotal role in English language teaching, especially in the realm of teaching where English is used as a foreign language (Richards & Renandya, 2002). In language learning, textbooks are viewed as the most popular teaching materials, it is presented as the powerful communication means which transmit ideologies and cultures through contents and activities embedded therein (Choppin, 1992). As one of the materials used in classrooms, textbooks are crucial sources in language classrooms, without textbooks, teachers may encounter the obstacles, because textbooks guide teachers to construct language learning activities (Richard, 2001). Also, textbooks have been used as tools to connect learners and target language (Widodo, 2016). Learners tend to commit themselves to achieve the outcomes expected by the chapters, by following the directions, activities, assessments that textbooks contribute to the instruction. Textbooks can be the main assistance as the ready-made materials with guidance to process the instruction by following directions given in contents and tasks.

Basically, textbooks contain multiple forms of representation, language and culture are mainly included in those lessons aimed to drive students to meet with linguistic competence. Aligned with the content embedded in textbooks, language and culture are interrelated in which language is taken as a form of cultural representation (Davidson & Liu, 2020). The elements in textbook are abounding culture codes which are seamlessly lodged throughout textbooks. In that sense, textbooks as teaching materials present cultural aspects in forms of reading texts, tasks, directions, and to name a few. Learners, in consequence, commit their learning process in both linguistically and culturally through the representation along the material implementation (Saemee & Nomnian, 2021). EFL teachers, in essence, implement textbooks into their instruction since textbooks hold potential to endorse their teaching to be more effective and the textbooks have become a major source in EFL classrooms according to the benefits mentioned along.

Despite the importance of textbook implementation in EFL classrooms, there remains factors which implicate learners' language acquisition and identity interference. Most of the textbooks, however, used in EFL curricula published from western presses and represent dominant cultures which mainly drawn from British English (BrE) or American English (AmE) (Jindapitak & Boonsuk, 2018). Regarding to concerns raised by researchers, textbooks play as mediators to conveys language and ideas to learners' perceptions and they may engender misinterpretation and obstruct language learning in learners since EFL learners possess distinctive experiences and background knowledge. Also, Liu et al. (2022) discussed that textbooks predominantly influenced and created by western norms relatively portray a singular perspective which can foster negative attitudes towards minorities groups. On that account, the discourse embedded in textbooks have inescapably affected students' identities in the way that students with different lived experiences would absorb the target cultures and ideologies from textbooks implemented in classrooms (Priyanti, 2019).

To elaborate, discourse in textbooks in forms of reading passages or tasks may alienate EFL learners due to the unfamiliar terms and cultural depictions. This can impede learners' language acquisition, as well as their capability to negotiate their inquiries in real-world situations (Boriboon, 2008). Moreover, the dominant discourse in textbooks which rely on western cultural norms permeate throughout the textbook in forms (e.g., images, visual aids, tasks, or instructions), thus, this certain cultural representation seems to promote monocultural superiority and marginalize non-western perspectives (Van Lier, 2000; Kumaravadilu, 2012).

As such, students' lived experiences and values may be marginalized by the discourse components. Regarding this, when students could not link their existing knowledge with the lessons they are engaging in, it seems superficial for them to literally understand the language being introduced by teachers. Eventually, they could even lose their identity due to the master of the language outcomes. With regards to English textbooks implementation in EFL context, the textual analysis is vital as it should be taken to analyze how language work in contexts.

To reach that point, semiotic approach holds its potential to scrutinize relationship between language and its functions in the setting. Senal (2007) has proposed that a semiotic approach is a way of teaching languages and cultures by using signs, symbols, icons, and semiotic elements. It emphasizes the function of social signs that people use to communicate visually, verbally and non-verbally. Also, it can be utilized to stimulate learners' ideas in their learning from sources as teaching materials

This current study, therefore, is interested in analyzing how the language work in textbooks through texts, images, and tasks embedded therein by using semiotic approach (Kress & Leeuwun, 2006). This study is expected to shed some light for EFL teachers and stakeholders to be critical and aware when it comes to the implementation of textbooks since maintaining learners' identity while learning language is essential rather than learning the target language and culture alone without guidance regarding learning world knowledge through language with cultural awareness.

### **Objective of the study**

This study aims to apply semiotic approach to analyze the discourse in textbooks which implemented to English language teaching with English major students at all levels of English proficiency. The discourse taken to analyzed were presented in forms of texts, images.

### **Literature review**

Semiotic approach was primarily developed by Leeuwen & Kress (2006) with the main aim to analyze visual communication. The concept of social semiotics has its roots in the work of Halliday (2001) whose seminal theory pointed that language is a creation of social processes; the language is the essential means to carry the messages from one person to one another. Kress and Leeuwun had studied and expanded Halliday's work and shaped the concept of social semiotics into the understanding of representations in cultural settings. According to Chandler (2007), semiotics is extensively described as the overall study of all kinds of communication in the settings. The concept, that is, points out the interpretations of messages in all forms such as texts, images, codes, colors, and so forth. The studies of social semiotic analysis in textbooks are evidently shown in numbers, mainly focusing on learners' culture and the ideologies that come with the textbooks as packages. This form reaffirms the ideas of Mile (2001) who proposed that the relationship of language and culture is inseparable; textbooks represent the target language with the culture lodged in the representation in forms of contents and activities in them.

The study was conducted presented the relationship between textbooks and cultural signs, the study also brought out the types of cultures in the EFL textbook entitled 'Be smart in English for Grade X of Senior High Schools Linguistics and Cultural Studies'. There lies the uneven proportion of cultures' content appearance. The findings drew out four types of cultures namely neutral culture (58%), source culture (21%), target culture (13%), and international culture (8%). By the analysis of the semiotic approach, the cultural content emerged from the images and the texts in a great number. The findings, as well, implied that

with the ample number of cultural contents in textbooks, learners with different cultural awareness might get impacted since the signs and symbols in the textbook are not able to explicitly convey a great deal of cultural knowledge. Asserted by Martina (2019) that the content in textbooks is mostly relevant to cultures embedded in forms of texts and images. By the analysis of semiotic approach, the culture dimension was categorized into 3 themes; products, practices, and perspectives. The findings revealed that the teachers can possibly commit to meaning-making processes when they realize the balance between the amount of cultural content and the cultures of learners. In line with the contribution of the semiotic analysis approach, it also stretches its branch to the realm of intercultural communication competence.

Isnaini, Setyono & Ariyanto (2019) studied the representation of EFL textbook in Indonesia and found that the semiotic approach elicited the multicultural values through the visual images in textbooks. The results showed that the learners had opportunities to promote their intercultural communication skills through the values of cultures which offer respecting other people's tradition, appreciating other people's perspectives, appreciating other people's cultural products, and appreciating women's equal rights. The aforementioned studies reassure the presence of cultures in textbooks and it is instructionally transmitted to learners in some way. The norms of authors created by the textbooks are somehow dominated by learners' perceptions and it shows that the cultures from inner circle countries would be more highly recommended rather than local cultures of each area (Magogwe, 2009; Yamada, 2010 & Shin et al., 2011). Likewise, the study of culture in textbooks occurs in Thai context, it concerns the cultural aspects in English language textbooks and they match with Thai cultures in terms of products, practices, persons, perspectives, and places (Nomnian, 2013).

The studies have provided the potential of examining cultures in textbooks and the possible implications for textbook designers or teachers who plan the courses to be able to achieve the learning outcomes of linguistics and the maintenance of learners' cultural identities. The related studies have suggested the means to systematically analyze textbooks in EFL classrooms where the learners come from different cultural backgrounds and they have their own ways to interpret the messages being conveyed. This paper adopted the social semiotic approach developed by Leeuwen & Kress (2006) to analyze seven textbooks implemented with English major students and the scope of analysis is divided into 3 aspects namely texts, images, and tasks.

## **Methodology**

### **Research scope**

The setting of this study is situated in Sakon Nakhon Rajabhat University where students are from different ethnic groups and carry distinction cultures with them. The concept of this study draws on the cultures and identities represented in seven commercial textbooks used with English major students across all levels. The textbooks were implemented in some English classes and written by native English-speaking authors and published by the western-oriented presses, namely Macmillan, Oxford, Cambridge, Pearson, and Cengage learning in EFL classrooms (See Table 1). Among seven textbooks, five of them are published from British publishers (Macmillan, Oxford, and Cambridge) and two are products from American and Australian presses (Pearson and Cengage learning).

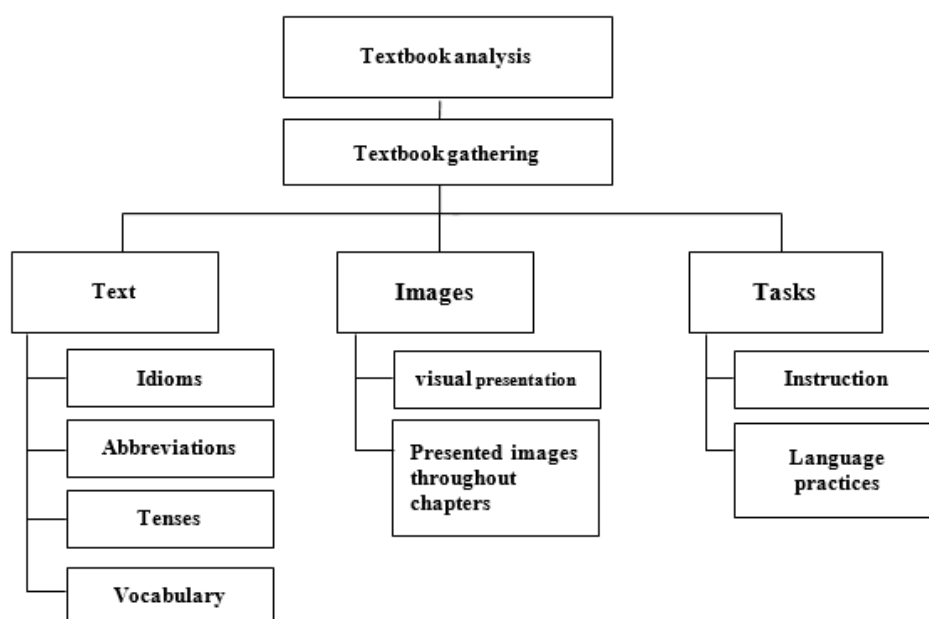
**Table 1** Textbooks implemented with English major students

Countries	Presses	Textbooks	Year of Publication	Student level
England	Cambridge	Real Reading 1	2008	Second year
		Interchange	2017	Second year
	Oxford Macmillan	English for Presentation	2007	Third year
		Skillful: Listening and speaking	2012	Third year
		Open mind	2015	First year
United States of America	Cengage	World English 1	2015	First year
Australia	Pearson	Learning English for Academic Purposes	2015	Fourth

Table 1 illustrates the textbooks which were implemented in EFL classrooms with undergraduate students from English major. The textbooks are aimed to apply in different subjects such as English for Presentation, Listening and Speaking English, or Reading English. The presses of the textbooks are in countries from inner circles and the dominant cultures in the textbooks are unavoidably derived from western norms, cultures, and ideologies.

### Data collection and analysis

This study relies on qualitative approach to draw out the relationship between discourse in textbooks and learners' cultural backgrounds. With regard to the concept of semiotic approach (Kress & Leeuw, 2006), the textbooks were gathered up and skimmed for the texts, pictures, and activities. The collection of data deal with the linguistic items that would mislead learners' cultural identities to use the language unnaturally in their practices and they might not make it meaningful as it is supposed to be fostered. The images, similarly, were taken to see the dissonance between the features appearing in the images and learners' cultural knowledge. Finally, activities, some were selected to present the tasks that learners could not relate their knowledge and ideas with. The following conceptual framework displays the conduction of this study.

**Figure 1** Conceptual framework of discourse analysis in textbooks through semiotic approach

The analysis employed content analysis (Stemler, 2001) and a semiotic approach (Leeuwen & Kress, 2006) to examine the cultural meanings attached in the textbooks which are designed to master the multiple skills of students. The units of analysis in this study account the semiotic approach which covers the meanings of texts, images and tasks. The analysis was divided into three parts, drawn from a semiotic approach, which relies on texts, images, and tasks.

First, the texts were analyzed primarily, as the texts represent sociocultural and ideological hegemony through linguistic features, idioms, abbreviations, tenses and vocabulary or even the capital letter use. According to the contents in the textbooks, they were permeated with conversation and passages, the significant and remarkable parts were taken into consideration as aligned with the origin of cultures dominated in textbooks.

Second, the images were examined by matching them to the contents provided in the chapters. The images with vulnerable compositions that can affect students' perception to target language were particularly focused.

Lastly, the tasks were viewed as the learning process which covered texts and images since these two elements were inserted in the tasks, in this respect, tasks were analyzed after the relation between texts, images and cultures were elicited. The language teachers acknowledge that activities or tasks can shape students' perception due to their designs such as pair works, group works, individual works, or presentations. The tasks were analyzed according to the cultural elements from the different presses. The directions given in tasks were concerned as the main points, followed by the given terms and images in each selected task.

## Results

The semiotic relationship between discourse and interpretation was drawn from the contents from the selected textbooks and taken to analyze under the framework of semiotic principle. The findings are discussed in tripartition namely textual representation, images presentation, and task presentation.

### Textual representations

The first dimension suggested in the semiotic approach (Leeuwen & Kress, 2006) concerns text interpretation. The findings reveal the reproduction of dominant cultures in forms of sentence completion which solely presented the reiterative linguistic patterns, reading texts that require cultural backgrounds to comprehend the meaning therein. The examples from the textbooks are attached as follows;

**Occupations**

dancer pilot chef journalist politician  
photographer police officer travel agent

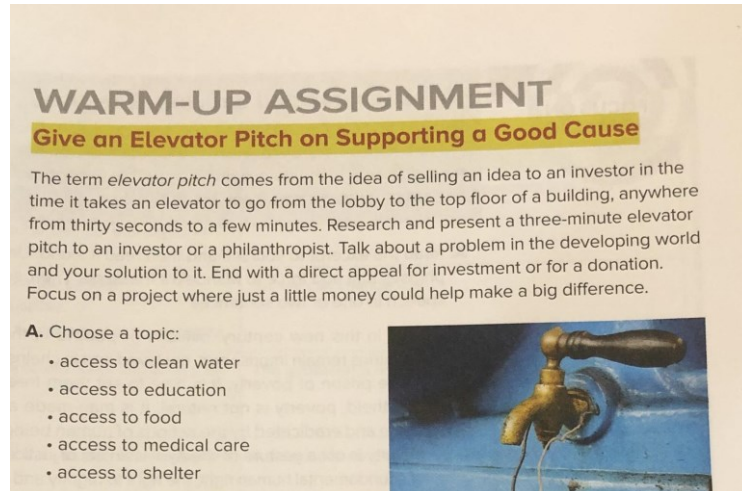
**Vocabulary**

**A** Fill in the blanks. Use words from the boxes.

1. This is Norma. She's Mexican and she's a dancer.
2. This is Gabriela. She's \_\_\_\_\_ and she's a \_\_\_\_\_.
3. This is Frank. He's \_\_\_\_\_ and he's a \_\_\_\_\_.
4. This is Marie. She's \_\_\_\_\_ and she's a \_\_\_\_\_.
5. This is Yaseen. He's \_\_\_\_\_ and he's a \_\_\_\_\_.
6. This is Chuan Li. He's \_\_\_\_\_ and he's a \_\_\_\_\_.
7. This is Nanako. She's \_\_\_\_\_ and she's a \_\_\_\_\_.
8. This is Nicolas. He's \_\_\_\_\_ and he's a \_\_\_\_\_.

**Figure 2** Extract from *World English 1* (Milner, Chase & Johannsen, 2015, p. 4)

Regarding text analysis, the example taken from *World English 1* (see Figure 2), *situated* the linguistic aspect like the language pattern of people's introduction. The repetition of the verb 'is' announces the constant pattern through the declarative sentences. Consequently, learners would not be maintaining their own identities, they are trained to express the same ideas over reiterating the language pattern. The learners may lose their chance to create their communicative language in other viable ways.



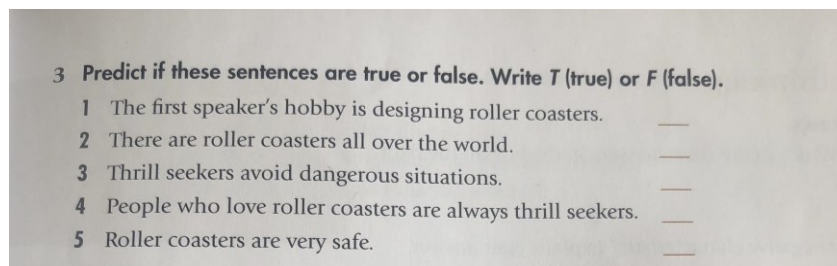
**WARM-UP ASSIGNMENT**  
**Give an Elevator Pitch on Supporting a Good Cause**

The term *elevator pitch* comes from the idea of selling an idea to an investor in the time it takes an elevator to go from the lobby to the top floor of a building, anywhere from thirty seconds to a few minutes. Research and present a three-minute elevator pitch to an investor or a philanthropist. Talk about a problem in the developing world and your solution to it. End with a direct appeal for investment or for a donation. Focus on a project where just a little money could help make a big difference.

**A. Choose a topic:**

- access to clean water
- access to education
- access to food
- access to medical care
- access to shelter

**Figure 3** Extract from *Learning English for Academic Purposes (LEAP)* (Beatty, 2013, p.35)



**3 Predict if these sentences are true or false. Write T (true) or F (false).**

- 1 The first speaker's hobby is designing roller coasters. \_\_\_\_\_
- 2 There are roller coasters all over the world. \_\_\_\_\_
- 3 Thrill seekers avoid dangerous situations. \_\_\_\_\_
- 4 People who love roller coasters are always thrill seekers. \_\_\_\_\_
- 5 Roller coasters are very safe. \_\_\_\_\_

**Figure 4** Extract from *Skillful: Listening and Speaking* (Baker, Gershon & Zemach, 2012, p. 59)

Also, another example from *Leap advanced: Listening and Speaking* (see Figure 3) exhibits the explanation of the idiom 'Elevator Pitch' by mentioning an investor or philanthropist which sounds odd to EFL students' lived experiences. Surrounded by the environment of natural landscapes, the occupations that the learners know in their lives and community are agriculture careers, teachers, doctors, or other fishery-oriented works. In the same way, the text refers to things about roller coasters from *Skillful: Listening and Speaking* (see Figure 4), the text is tied up with the task to identify the emotion when traveling to the amusement park. The value of the textbook writer is strongly evident whereas local learners do not possess the experience of trying roller coasters and learners might get lost when they try to figure out the feelings of riding it.

In conclusion, the discourse in forms of text presentation in these textbooks may be put as obstacles to hinder learners from expressing their own ideas and identities shaped by their lived experiences. Hall et al. (2006), the identities are shaped by the combination of linguistics and experiences. As in repetitive language pattern that drive the learners to memorize the certain linguistics, the learners' expression is somehow being suppressed within the predominant norms in language use. The unfamiliar meaning lied in the reading passage and sentences, in the same way, may alienate the learners to only participate in the practices physically but not culturally.

### Image representation

The dimension adjacent to textual analysis leads to the sphere of image interpretation. Within textbooks, numerous images often prove unfamiliar to the majority of EFL learners, as these depictions predominantly represent hegemonic cultures through depictions of life styles and cuisine which learners may struggle to understand culturally. Furthermore, these images subtly imply societal norms and ways of life, wherein Western cultures and norms are often embedded as predominant cultural representations. The example of image presentation mismatched to EFL learners' cultures are shown below.

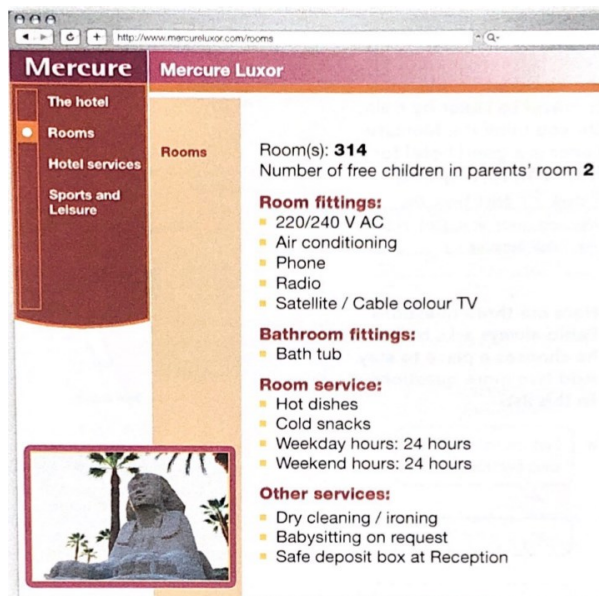


Figure 5 Extract from *Real Reading 1* (Drizcoll, 2008, p. 27)

In addition, the emphasis on semiotic points to the overlapped contents which concern more than one element. To illustrate this, the findings are exemplified in the example from *Real Reading 1* (see Figure 5) is the deictic contiguity of text and image. The text portrays the room types with their facilities, whereas the picture of the sphinx statue is pasted below the text. This is quite far from learners' local contexts, most of them might never stay in the hotels and they rarely carry the experiences of being serviced by five or four-star hotels. In other words, the theme of the activity is to recognize the main point from hotel websites, it seems unfamiliar to students who lack experience traveling and staying in various kinds of hotels. The concept of using traveling destinations is great to be part of lessons, yet learners may feel marginalized if they could not narrate themselves to the contents being introduced at the moment.



Figure 6 Extract from *OpenMind* (Rogers et al., 2015, p. 57)

The same dilemma was also found in *OpenMind* (see Figure 6) where the students are asked to relate the pictures of western menu to the different time of the day. This phenomenon can be expected that students would be disengaged from the given activity because the cultural patterns of eating in their local contexts and the westerns are quite different in the way that Northeastern people do not stick to the kinds of food when eating at the different time of the day, whereas western people tend to have certain kind of food which belong to meals for breakfast, lunch, and dinner. The concept of eating can reflect cultures which relate to the way of life of people, asking learners to match pictures of food with certain times of the day might lead them to confuse their own cultural living and target cultures being presented in textbooks.

In this sense, the learners' lived experiences were neglected since the target cultures challenge the learners to construct the meanings from their ends instead of grounding the meaningful knowledge with their local experiences and connecting to the target cultures, as Norton (2000) discussed that the learners co-construct the knowledge in the other contexts while they are able to maintain their own identities.

### Task representations

The final part of semiotic interpretation involves task analysis. The tasks found in the textbooks often assume a cultural context or background knowledge that is unfamiliar to the learners, and it may raise a disconnection between discourse in textbooks and learners' cultural experiences. Besides, the linguistic demands seem to be complexed and they surpass the proficiency level of the learners. Such a circumstances launch hindrance for the learners to engage in language learning and practices.

**1** Show that you agree. Write sentences with the words given.



1. A: I don't want fast food tonight.  
B: I don't either (either)

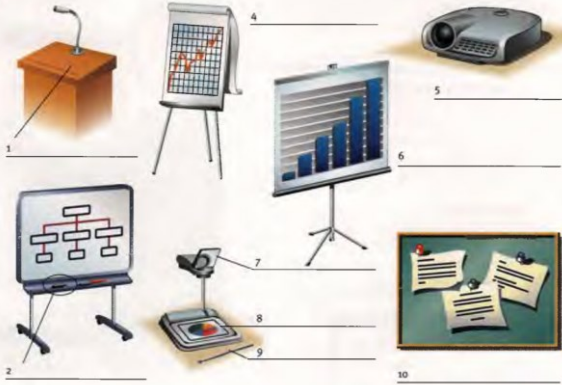
2. A: I really like Mexican food.  
B: \_\_\_\_\_ (so)

3. A: I'm in the mood for Italian food.  
B: \_\_\_\_\_ (too)

4. A: I can't stand spicy food.  
B: \_\_\_\_\_ (neither)

**Figure 7** Extract from *Interchange* (Richards, 2017, p. 73)

**STARTER** Do you know the English names of these media and tools used in presentations?



1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

4 \_\_\_\_\_

5 \_\_\_\_\_

6 \_\_\_\_\_

7 \_\_\_\_\_

8 \_\_\_\_\_

9 \_\_\_\_\_

10 \_\_\_\_\_

When, if ever, do you use the above media and tools in presentations? Which do you find the most effective? Why?

**Figure 8** Extract from *English for Presentation* (Grussendorf, 2007, p.23)

In terms of the tasks in textbooks, the other example from *Interchange* (see Figure 7) exemplifies power in language attached therein. The direction states that 'Show *that you agree* ....' with different types of food showing on the page as well as the discourse in *English for Presentation* (see Figure 8), the task requires students to make a discussion on the most effective tools in presentations. The discourse is authoritative because it is compatible with the given pictures which seem unfamiliar to students and they are being asked to express the agreement or their opinion on their unfamiliar objects like food and electronic devices to use in presentation.

The findings obviously direct to the presence of incongruity between western cultures and learners' language acquisition. The text analysis provides the possibility to create the fixed ideas of language use. The images, meanwhile, may exclude learners from the lesson since the unfamiliar images present the ideologies and cultures which they could not enable themselves

to (Xiao, 2010; Wang & Hemchua, 2022). Additionally, the tasks from the textbooks lead them to learn language in not meaningful ways as learners complete the tasks just to finish them but not to achieve the goal of fully learning practical language.

## Discussions

The aim of this study was to analyze the discourse in forms of texts, images, and tasks embedded in textbooks. The semiotic approach advocated the investigation through the notions of social semiotics appearing in the commercial textbooks. The exploration from this analysis implies that the textbooks mainly rely on infusion of culture. Likewise, the discourse in textbooks is performed by implementing cultural connotations through linguistic aspects, social signs in forms of texts, images, and tasks derived from ideologies. From the analysis, it can be said that discourse analysis points to multimodality and it is designed by native speakers from western countries. Therefore, students entail various forms of exclusive notions and this circumstance tends to reinforce the concept of stereotype rather than providing opportunity to engage their own lived experiences to the lessons being introduced in classrooms.

The first aspect, *text*, is portrayed to represent western norms through the pattern of language, idioms, and cultures. The analysis caught out the use of text without central agencies to bridge the gap between local contexts and the target contents in learning practices (Li, 1998). The discourse of Western-Complied textbooks may be considered a threat to learners' identities (Boriboon, 2008). The learners commit themselves to the text-oriented activities (e.g., occupations, speaking pattern, or idioms based on western history), in that way, the learners may be unwilling to take part of the activities when it comes to language practices in the classroom. Furthermore, the discourse presented in the textbooks is more oriented towards lived experiences which learners should be able to reflect their feelings to. The learners, in that sense, would feel awkward if they do not own the kind of certain experiences and conclude their learning by repeating their friends' presentations.

For the *images'* use aspect, it points out that discourse in textbooks symbolizes attitudes and cultures. The Western-compiled textbooks embrace their own cultures and relay them into the products. The evident presence of the majority of images attached in textbooks reflected urban livings, mainly displaying European characteristics of transportation, eating ways, scientific equipment and to name a few. In the other word, introducing the universal ways of life to students is another way to open their eyes to the world, yet, without their lived experiences as the connectors, learners could lose their identities due to the confusion of the way they have been living to the cultures being taught through the forms of discourse.

According to Lin & Luk (2005) proposed findings about 'one-way logic' in textbooks, the culture of silence is raised because students could not interact with the target language due to the lack of experience of the given situations in textbooks. Also, EFL learners like Asian students concern themselves with shyness and fear to raise their questions about new things, these characteristics would increasingly infuse them in the culture of silence. At this point, in the aspect of *tasks*, students may complete the tasks and activities at the end of the class but they could not take the forensic meaning of it.

As Halliday (2001) pointed out, students could learn the language, but they may not mean it when they use it. Furthermore, the contribution of culture hegemony also takes action in language assessment. It is shown explicitly in tasks where the dominating discourse tends to anticipate students to recognize the target cultures profoundly. As in some tasks, students are being asked to discuss over western meals, things they could think about top-class hotels or even occupations in the States. In fact, learning language through cultures promotes students'

critical thinking and the understanding of others, however, the target language and cultures should not erode students' identities by submerging them into the concentrated cultural means.

The aforementioned discussion has highlighted the challenges on the use of Western norms-oriented textbooks in EFL classrooms. Additionally, the researcher suggests the limitations due to the selection of the textbooks and the alternative approaches that might be also useful for the future studies. First, the results from this study are constrained to seven-selected textbooks published in Western presses. The future research may consider incorporating a greater number of the textbooks in order to obtain wider perspectives on the discourse presentation depicted in textbooks published from more various presses across the region. Second, the findings in this study are primarily examined only the cultural aspects, further research should also investigate the other relevant aspects which take place to affect language acquisition of learners such as sociopolitical and sociopolitical aspects. Third, in the realm of using semiotic approach to investigate the discourse in textbooks, there findings are segmented into three components: text, image, and task. Future research may contemplate implementing other optional approaches. As such, the analysis and interpretation could also be enriched with more insightful with broadened perspectives.

### **Conclusion and suggestions**

This study presents perspectives playing in textbooks which are taken to implement in EFL classrooms. With the expectation of using materials to mediate their language learning, the textbooks with solely western ideology-oriented features might not be the final assistance that teachers should fully rely on. There should lie the accountability of local contexts to prepare them with the natural consciousness before moving to the mainstream cultures and knowledge. The elements of textbook implementation involve teachers who possess cultural flexibility as learners should learn language and culture naturally and morally, the teachers are viewed as key persons to drive the instruction with textbooks in useful and meaningful ways.

### **New knowledge and the effects on society and communities**

Discourse analysis reflects itself as a tool to discover the verbal, nonverbal, and visual signs in teaching materials and it has been contributed to EFL context. The production of Western agencies unfolds Western-norms transmitting western cultures through stages of learning. Psychologically, when EFL students first interact with the discourse, they may not connect themselves to it immediately as they hold inadequate information or some might not recognize information about Western cultures. In consequence, teachers in English as a foreign language instruction should acknowledge both local and global cultures in order to appropriately choose the materials to master linguistic knowledge and to maintain students' identities while learning the foreign language.

As suggested by Pennycook (2017) that the English instructional approaches should begin with students' everyday experiences. It is also feasible to construct the discourse in forms of dialogues, images or tasks to negotiate the conflicts between the target language and students' cultural identities. In this sense, multicultural perspectives should be taken into account when it comes to curriculum designing alongside textbooks and material selection. In the same way, curricula should be more adaptive to adjusting the communication by combining texts and discourse representing students' values from different backgrounds. Besides, the diversity of identities from the distinctive lived experiences which students bring to the

classroom should be considered to mediate the lesson and the discourse used in classrooms (Canagarajah, 1999), teachers in EFL classrooms should be critical to convey the discourse to students in order to help students to accomplish their goals and to consciously preserve their own identities while interplaying with discourse in learning materials. As a results, implementing textbooks that learners are able to relate and fully engage to the lessons based on their local backgrounds as a bedrock to understanding target cultures can have several positive effects on society and communities.

Firstly, the increased engagement would assist learners to learn language vividly, they are more likely to be part of the processes which lead to better retention of linguistic features they have learned and eventually improve their language acquisition through meaningful use of language (Hiver et al., 2024). The academic performance as presented by Gunantar (2017), in addition, would be increased in term of learning investment since the learners could obtain more related knowledge from the textbooks that offer the great amount of linguistic knowledge they could apply in their contexts.

Secondly, textbooks which respect to local backgrounds reflect diverse cultural capitals and backgrounds. They tend to promote cultural understanding and emphathy by including contents aligned with learners' experiences, so that, the learners would feel valued as they are included into the lessons (Alshenqeeti, 2019). As such, the language and culture barriers would be broken down and be fostered to meet with a sense of inclusiveness in learning even target language from different backgrounds.

Finally, culturally relevant textbooks would prepare the learners for global citizenship with the cross-cultural communication skills they gain from learning language and cultures along paths., they are well-prepared to encounter diversity in reality outside textbook presentation and classrooms. Additionally, the practices derived from the textbooks also help the learners to make contribution to community cohesion by acknowledging variety of identities in their own communities which steer to strengthening social bonds and unity within such communities.

In this sense, English textbooks that resonate local backgrounds bring positive effects, not only in individual level but also on larger communities and society as a whole. The convergence of language and inclusion of local cultures fosters inclusivity, cultural understanding, and academic improvement, eventually contributing to a harmonious society.

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## Teachers and Gender Issue in English Classrooms: A Case Study of a Secondary Public School in Chiang Rai Province

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### Abstract

This research aimed to study gender issue in English classrooms through teachers' perspective and the classroom activities in a secondary public school in Chiang Rai. The data was collected from classroom observation and interviewing 6 key informants by in – depth and semi – structured interview. The result of the research was presented into 2 main points. First, teachers' perspectives towards gender issue were related to their personal background including class, age, education, teaching experience, and gender. Those perspectives are 1) patriarchy and conservative 2) gender neutral 3) challenging towards gender issue. Second, the reproduction of patriarchy from teachers' attitude or the reconstruction of gender issue could be occurred in classrooms. The context and phenomenon including the growth of freedom, rights, equality, and equity have been affecting and challenging the English classrooms in term of gender issue.

**Keywords:** Gender issue, English classroom, Teacher's perspective, Secondary public school, English subject

## Introduction

Classroom is a space and social ecosystem made up of teachers and students with diverse backgrounds of gender, class, culture, race, belief, and religion. It is also an area which is full of state ideology and society ideology that seeks to establish the power to dominate ideas, belief, student's way of life. Textbooks and classroom activities are materials for teaching and learning that are used to reproduce ideologies and assimilate them into students' identities. It relies on the teacher as an important mechanism for reproduction and actions to reproduce in the classroom through classroom teaching practices. (Webb et al., 2002)

Over the past decade, English language teaching in Thailand has been prioritized and efforts are being made to improve the quality of teaching. Many new ideas and teaching methods have emerged. In addition, various forms of teaching and learning materials are becoming more and more widely used and popular (Office of the National Primary Education Commission, 2005). One of the key elements to promote intercultural communication ability in English is that teachers should play a role in supporting and facilitating learners to search for cultural information, including critical analysis, and self-evaluation through real learning materials. Whether or not a teacher practices depends on whether the teacher believes in teaching and is aware of the importance of intercultural communication abilities. (Larzén-Östermark, 2008; Liddicoat, 2002; Newton et al., 2010)

It is generally believed that beliefs often affect a person's behavior and lifestyle (Borg, 2006) because faith is what is accumulated from a person's learning and life experience (Kennedy, 1997). As a result, personal belief in educational, education background, teaching training of the teachers affect the way lessons in classroom are designed. For example, Wood & Wood (1991) examined the influence of English teachers' beliefs on how English is taught and how teachers teach English. The result of the study showed that teachers' beliefs affect teachers' teaching behavior. In other words, teachers who believe in content-based learning will teach strictly according to the learning plan. Teachers who believe in learner-centered teaching will use a teaching method that adapts the content to the needs of the learners. At present, the education system has reformed teaching and learning by stipulating that the management of education according to the curriculum must be in order to develop Thai people to be complete human beings who are physically, intellectually and knowledgeably perfect and be able to live happily with others. Education has provided opportunities for society to participate in educational management and the learning process continuously. Therefore, if the textbook content and illustrations are systematically designed, placed, and reinforced, it will indicate the values of gender roles that have been adapted to suit modern society. In particular, restrictions on gender roles imposed by society are one of the most important factors that will enable the younger generation to reduce gender bias based on values, attitudes, customs, and social conditions towards women and men (Xuto, 1995).

However, sexual instruction in schools, teachers should teach diversity, not just binary. It is also about teaching to understand the varied sexual lifestyles of human beings. This is not to guide students in the direction we teach so as to understand and accept other people who have different sexual lifestyles. Teachers are considered to be very important in organizing gender learning in educational institutions in all aspects (Krischaroen, 2004). This research article aimed to reveal the practice and gender issue in the English classrooms of ABC School by pointing out the placement of gender issues in the classroom. It also aims to understand teachers' perspectives towards gender ideology.

## Objectives

To study and understand teacher's perspectives and gender issue in English classrooms

## Literature Review

### Feminist Concept

Feminism is a movement to reorganize the world based on gender equality, a movement that rejects gender differences, limits gender privileges, and problems caused by males against females. Feminism also fights for the recognition of equality between females and males as the basis of law and custom. Despite the major obstacles to change, the male-dominated role and centralization of men have long emerged in society. There is no social justice, as society requires one gender to dominate the other (Bergvall & Remlinger, 1996).

Billigto – Grieg (1911) stated that feminism is a movement to create a society where women can live and fully define their own lives, and to achieve such change requires a revolution. Women must take responsibility for the world to stay alive. From the fact that there must be a relationship between living things and the environment. This led feminists to focus on other relevant matters other than the equity and equality of women and men (Dinnerstein, 1989). It is now found that feminists are also interested in other social changes, such as changes that make women be more responsible for themselves, global society, and the environment. Furthermore, feminist accepts and understands the peculiarities and conditions of oppression of the marginalized groups who belongs to the various societies, cultures, and economies (Joseph & Lewis, 1986).

### Feminist Pedagogy Concept

Feminist pedagogy is a theoretical concept related to the teaching/learning process that guides classroom practice. The emphasis is on providing an independent classroom atmosphere. Teachers and students learn together through a process of reflection based on their joint experiences. The participation and active learning activities are based on rejection of sexism, racism, class division and other hatred with the purposes of better social changing (Shrewsbury, 1993). Many scholars have suggested that school systems should provide instruction not only to meet the needs of women, but to both women and men who have differences in learnings and interests (Christie & Lingard, 2020). Therefore, classroom instruction shouldn't provide only knowledge. The teachers also need to provide different learning spaces (Maher & Ward, 2001). The concept of feminist pedagogy emphasizes the opening of feminist perspectives to learning in a male-dominated education system. Although the school system was designed from a male perspective, the emergence and adoption of feminist pedagogy challenged those beliefs.

Feminist pedagogy concept will be possible if schools are reformed. Moreover, the classroom, curriculum and textbooks should be taken to be contestant space (Stromquist, 2003, cited in Nawarat, 2016). Feminist pedagogy aims to raise awareness of traditional gender structures and promote new gender social and cultural structures. The purposes are 3 levels of changing 1) gender neutral approach, 2) reduce and eliminate stereotypes of women and men including gender division of labour, and 3) model the challenge and detection of racism and gender bias. The reformation in level 3 focuses on the need to create new spaces in textbooks. The new space will portray alternative images of women and men that will challenge stereotypes. At the same time, it seeks a method in order to create a new social corporate culture.

Similarly, Shrewsbury (1993) proposes to revise classroom approaches that recognize the unique values and qualities of women. In addition, learners and instructors should jointly consider the obstacles encountered in teaching and learning, with the following goals: 1) empowering all participants in the learning process, especially learners and instructors, in

classrooms that lead to independence, 2) creating a sense of community, giving value and importance to communities and equality. and 3) leadership, learners should be encouraged to experience for themselves and realized that they are able to both their own learning and that of their members.

## Methodology

This research used a qualitative case study approach which aimed to study specific case. In educational research, there are various issues and according to changing situations, which should be studied deeply to obtain answers to problems that correspond to the situation of each case or event or target group. Therefore, it is necessary to rely on in-depth study methods as case studies in order to obtain comprehensive answers on the status quo, including seeking solutions to problems as well as studying the direct and indirect impacts that occur, which will lead to the search for solutions to further development and solutions.

By this research, the researchers used purposive sampling and chose ABC School. This is a secondary school located in Chiang Rai province. This public school was established in 1961 which has opened for all ethnic students. There are 7 teachers who teach English in Foreign Language Department. Six of them teach compulsory English subjects from grade 7 to grade 12. They are key informants of this research.

The researchers collected data by conducting field data including classroom observation and interviewing. The classroom observation only focused on compulsory English subject not elective subject because all students must enroll in the compulsory subject. For the interviewing, the 6 key informants were interviewed by using semi-structured interviews in which questions were defined as guidelines for data collection, which may not necessarily be asked in order of questions, but the order of questions asked was adjusted according to the situation of the conversation. Moreover, additional information was asked in some cases to gain more insight data. The researchers analyzed the data by separating and categorizing the content according to the Feminist Concept and Feminist pedagogy concept.

## Results

It is pointed out that choosing textbooks and organizing classroom activities are based on power and autonomy of teachers. The teacher is therefore an executor whose role is to organize ideas, spread ideas and create a common sense of thought and ideology among students in schools in order to justify the operation of the state. Behaviors, ways of thinking, or others will frame children's lives as cultural inheritors. The selection and placement of textbooks and activities in class is not accidental, but every selection and placement of textbooks and activities is ideologically related. It is the politics of ideology of knowledge that governs teachers' decisions (Naowarat, 2018).

However, if only gender-related issues and replacement imaging practices are taken into account in English classes. It was found that the practice of gender issue of teachers in English classes was related to their cultural background. This is reflected in the choice of textbooks, teaching materials, activities, and teacher-student interactions that occur in the classroom. In this presentation, the researchers present the data obtained from class observations, teacher interviews and study of lesson plans, activity sheets, and books used by teachers.

## 1. Teachers' Perspective towards Gender Issue in English Classroom

Teachers' views and attitudes towards gender issues as individuals vary from cultural background, gender, age, work experience, education and economic class. Each teacher is culturally refined in the context of society. Different educational institutions and families. It affects different perceptions, perspectives, and attitudes towards gender issues in society. As can be seen from the study of Rungruangkolkit & Kotnara (2018), it is pointed out that the influence of male-dominated society has reproduced gender ideologies that do not equal between females and males through refinement through various institutions in society such as families, communities, cultural traditions, religions, education, media, public health systems, economy, politics, and government. The roles and duties between women and men are clear. It has become the expectation of Thai society to perform and fulfill gender roles set by society.

If you consider the data from Table 1 showing the background of teachers in Sai Nam Khong School (pseudonym), it was found that the majority of teachers in the Foreign Language Department are female, one of them identifies herself as LGBTQ and 1 male teacher, 3 with marital status, 2 single, and 1 divorced, 3 between the ages of 50 years and above, 2 persons aged 40 – 50 years, and 1 person under 30 years old, 3 with more than 20 years of experience in teaching English, 3 persons with experience from 10 years to 20 years, and 1 person under 10 years of experience, 2 persons with at least a master's degree and 4 persons with a bachelor's degree.

**Table 1** Personal Background of Teachers in Foreign Language Department at Sai Nam Khong School (pseudonym)

Name	Gender	Status	Age	Teaching Experience (Year)	Education	Teaching in Grade...
F1	Female	Married	57	>20	Bachelor of Arts	G. 12
F2	Female	Married	51	25	Bachelor of Arts	G. 11
M1	Male	Married	45	15	Master of Education Bachelor of Education	G. 8
F3	Female	Single	29	2	Bachelor of Education	G. 9
L1	LGBTQ	Single	42	13	Bachelor of Education Master of Education	G. 10
F4	Female	Divorced	58	30	Bachelor of Arts	G. 7

Note : All names are pseudonym.

Based on background survey, data of teachers of Foreign Language Department, Sai Nam Khong School (pseudonym), the researchers segmented teachers' perspectives and attitudes towards classroom activity design. According to Stromquist (2003) study for the development of feminist pedagogy, the researcher divided teachers' perspectives/ attitudes towards gender issues in relation to their background. Divided into 3 groups as follows:

1) Patriarchal or customary views/ attitudes, i. e., teachers' expressions that reflect the different values between females and males expressed through the gender norms that society defines what women and men should be. Gender roles are the roles that males and females are expected to perform in society, both at home and outside the home. Gender Relations is a social relationship that defines how women and men of different ages should treat and position

themselves towards the opposite sex. Moreover, gender - based division of labor values both formal and informal activities that express men's and women's obligations to communities and families ( Department of Women' s Affairs and Family Development, 2 0 0 7 ) . Such views/attitudes have been a continuation of the era of hunting and collecting food that values males through beliefs and rituals. In addition, it continues in industrial society where gender differences are created by males through the legal system, attitudes, values, and practices in daily life (Santasombat, 2005).

When considering the autobiography of the teacher through interviews and class observation, it was found that the teacher of English subjects in Foreign Language Department, there are very strong views on patriarchal or customary gender issues. There are 3 people who have a clear and intensive patriarchal or customary view, namely: F4, F1 and M1. M1 is a male teacher who grew up in a farming family and belongs to the Yao ethnic community (Lu Mien). He received educational experiences in schools during the 1 9 7 8 National Education Curriculum which aimed at creating a replacement image for male roles in working outside the home, heavy sports and social gathering (M1, 2021; Ministry of Education, 1978) As a result, expressions, perspectives, and attitudes have continued to tend to segregate gender through norms, roles, and social relationships of men and women.

Similarly to F4 and F1, both teachers were born and raised in the early 1950s in families with relatively good economic status in the community. They received junior high school education from district school and high secondary education from provincial secondary school. During the National Education Curriculum B.E. 2503 and continued to the National Education Curriculum B.E. 2521 (1978), which gave importance and value to different male and female roles. In addition, both teachers had the opportunity to pursue higher education at the Faculty of Humanities, majoring in English, Ramkhamhaeng University before choosing to take the exam to serve as a teacher (F1, 2021; F4, 2021). However, Thailand's social, economic, and political context are transitioning from an agricultural society to an industrial society during this period, including the refinement process that arises from the curriculum. They are constantly reproducing textbooks and reproducing them until they lose sight of gender inequality and see it as normal in the context of Thai society.

2) Gender-neutral perspectives/attitudes, i.e. expressing perspectives and attitudes through educational arrangements that focus on modifying students' behavior. The equal opportunities for girls and boys to study inside and outside the classroom without recognizing the gender-based division of labor and recognizing the symbolic system that reinforces the role of women and men in society. It attempts to eliminate gender-biased language or symbols and not giving the importance or focus on masculinity. Any examples raised in classroom should be balanced for both female and male (Stromquist, 2003, cited in Nawarat, 2018). This view and attitude may be the result from the growth of feminist ideology that values gender equality in the 1900s and the introduction of gender concepts in the core curriculum of basic education of the Ministry of Education since 2001. As a result, the new generation of teachers who received basic education from the 2001 curriculum, their perspectives related to gender issues increasingly.

This is the case of F3, a teacher who passed the Basic Education Curriculum B.E. 2544 (2001) and went on to pursue higher education in the Department of Education, English major from a Rajabhat University that has been sexually open, coupled with the growth of gender concept in social media and government policies that place greater emphasis on gender equality. It has shaped teachers' perspectives on gender equality and acceptance of gender diversity (F3, 2021). Similar to L1, even though she had passed the National Education Curriculum B.E. 2523 (1980) revised B.E. 2533 (1990), but with the sexuality of LGBTQ, she

faced the sexually open culture. This tends to form attitude and perspective towards gender equality among women and males, including LGBTQ students in the classroom (L1, 2021). Such views and attitudes of both teachers will influence the positioning of gender, for example, creating an equal dialogue or valuing equal gender.

3) Challenging perspectives/attitudes towards gender issue, i.e., expressing teachers' efforts to reduce and eliminate feminine and masculine issues through gender-based issue and pointing out flexibility, fluidity, and challenging gender-stereotyped biases and role stereotypes through the creation of new spaces in textbooks and teaching arrangements to portray alternative female and masculine images to learners (Nawarat, 2018).

This perspective/attitude of teachers appears in the context of secondary schools in rural communities still in the context of agrarian societies, and in the context of school culture dominated by predominantly male school administrators (Classroom observation, 2021). However, it is somewhat found in the case of teacher F2, who is a teacher in the old and new middle group with a dynamic of thought, beliefs and views on gender issues. She got master's degree in arts. She took responsible for supervising student activities such as To Be Number One, arts and culture club, and Fam School. She supervised the activities along with female, male, and LGBTQ students. In addition, through training activities of various organizations related to women's rights, the promotion of children's abilities, and the personality of leadership in both school and community activities make the idea, beliefs and values are constantly shaped and developed (F2, 2021). Context and interest at the above individual level of teacher F2 has resulted in a challenging view of gender rules and pointing out new options for presenting a changing gender issue.

However, the views and attitudes of each teacher are not fixed, but they are dynamic and constantly evolving in relation to the social context, cultural, economic, and political, views and attitudes. Thaweessit (2004

) said that gender in Thai society is diverse, complex, fluid, inconsistent and dynamic, reflecting a change in the opinion structure of Thai society. However, changes in the structure of gender thought systems do not happen overnight, and traditional discourse has not completely ceased to exist, but rather a bargain between traditional perspectives and attitudes and new perspectives and attitudes.

## **2. Reproduction/Reconstruction: Gender Issue in English Classroom of Teachers**

The views and attitudes of teachers are not fixed or contesting ideologies. Instead, they are characterized by being dynamic and adaptable to the social context, economic and political reflected in education policy. As Nawarat (2018) points out, the role and authority of teachers in learning management is related to power in two dimensions: first, the power of teachers in educational institutions who have knowledge, authority according to position and experience. The second dimension is the power of teachers in educational institutions related to gender, color, race, and ethnicity.

By the way, the researchers aim to reveal the practice of gender issue in teachers' classrooms through observation, interviews, and study of teachers' lesson plans in English subjects. In the presentation, the researchers divided into 2 sub-areas, namely the practice of reproducing gender issues and the practice of reconstruction on gender issues. Anyway, there is a shift back and forth based on the context and circumstances that occurred at the time.

1) The reproduction of gender issue, the classroom can be considered an operational space where teachers have the power and freedom to choose content, select activities, learning materials, and textbooks for using in reproducing ideologies, ideas, beliefs to students in the classroom. However, gender reproduction practices that occur in English classrooms are

closely related to teachers' views and attitudes towards gender issues and the presentation of gender issues in today's English textbooks. The reproduction of gender issues in the classroom of teachers is thus expressed in 2 dimensions: The first dimension is the reproduction of images representing equality. It can be seen that the activity plan in the publisher's learning activity manual has given importance to the content and activities of analyzing gender inequality issues in society together among the learners in the classroom.

However, reproducing images represents equality. Whether or not gender diversity will occur depends on the teachers' choice of activities in that English language book. Observations conducted in classrooms that use English textbooks as the main medium of instruction found that although textbooks and teacher manuals have made progress on issues of gender equality and equality, including identifying issues and activities ready for teachers to use in learning management, during the observations, the researchers found that even though teachers used textbooks as the main medium of instruction, they did not use textbooks. However, in order to interpret the story or story in the book, it is necessary to rely on the teacher's understanding of gender issues. experience, including the teacher's background in interpretation.

The second dimension is a reproduction of patriarchal issues from the perspective and attitude of the teachers. Although the English language textbooks used in the current curriculum are equal and aware of gender issues. However, the placement of textbooks in some classes by some teachers is not provided as the primary teaching material. Instead, teachers choose to design their own teaching activities or use other teaching materials that teachers have gathered themselves. As a result, the teacher's experience and background play a vital role in reproducing perspectives that correspond to the attitudes and beliefs of the teachers. As in the case of one classroom observation of a Grade 12 English class, it was found that the teaching and learning started by using the exam papers compiled by the teacher and emphasized the importance of the university entrance examination. Then, the teacher started showing students the questions and finding answers, and the teacher will tell the correct answer after the students have completed each question. The atmosphere in the study is relatively quiet (Classroom observation, 2020). From the informal discussions of researchers with students studying in such subjects, the students told the researchers that if they enter the room late, they will be scolded quite violently, or if any of their friends are inattentive to study or peek at the clock, they will be scolded verbally and visually (Classroom observation, 2020). It reflects the supervision of teachers focused on academic achievement and university entrance examinations, reflecting the power and patriarchy imposed by the power of teacher and remaining in today's school culture.

The above points to the reproduction of gender issues of teachers. At the same time, gender issues that reflect the values of male-dominated ideology are embedded in school structures and systems. The patriarchy is portrayed in teacher's performance without being aware of the reproduction of such gender disparities. Thus, the classroom can reproduce both gender equality and reproduction, inequality and emphasizes patriarchal issue.

2) The reconstruction of gender issue, as mentioned above, it points to the role of teachers as ideologically attached actors. At the same time, teachers have a duty to prepare students to assert what is right and bring about radical change, among the new factors that have emerged (Freire, 1998). In today's economic, social and political context, freedom, rights, equality and equality have become more realized, especially in the growth period of the student movement, which has grown among the students who have demanded in equality and justice.

Under the circumstances and changes under the current of the new generation, teachers must be careful in their use of language. Words and actions that used in classroom reflect the image of authoritarianism under patriarchal habits. At the same time, teachers' views and values

regarding gender are not stereotyped, but dynamic, negotiable, and controversial all the time. Therefore, the teachers' actions that take place in the classroom are constantly dismantling or realigning gender relations with the social and cultural context. As a phenomenon, the researchers observed a Grade 8 class, where teachers used textbooks as the main medium of instruction. While explaining the content and giving examples of conversations in textbook, he explained that it is connected to the cultural context and situation that is happening in current Thai society. Furthermore, he explained by emphasizing the rights of people regard of gender, race and nationality. Accordingly, Apple (1993) stated that the content in the textbook is the politic of discourse because the textbook represents an attempt to create a new set of cultural realities. Therefore, it is essential to analyze the textbooks at the level of ideology or hidden knowledge. The textbook is not intended for one person to read, but for hundreds and thousands of people to read. Each person will interpret it differently at the operational level.

Moreover, nowadays the classroom is no longer just female or male, but a space where students' sexuality is expressed more openly. Classroom operations are therefore a space to dismantle ideas and beliefs about naturally defined gender or gender beliefs that divide through cultures and shape the social and cultural roles of women and men. As can be seen, the classroom is more diverse. Giving examples, or even grouping to do classwork, is even more flexible. Teachers see an increase in gender diversity beyond two genders.

Based on the above, both gender reproduction and gender reconstruction take place in the classroom. It reflects the influence of feminist ideology that has grown since the 1997s, as well as current social, economic, and political phenomena that focus on gender equity and equality. However, the practices that take place in the classroom are amenable to accepting the ideals of the practitioners as real values. Some negotiate and accept the ideology as a whole, but others argue on some points, and some oppose, argue, oppose, and refuse to conform to the ideology. However, how teachers react to gender ideology depends on the relationship network, experience, class, race, gender, and basic beliefs. These shaped teachers' perspectives and attitudes (Sivarom, 2008).

## Discussions

From the study of classroom practices in English language classes, it is evident that the practice of creating visual representations closely relates to the teacher as an operator with authority and freedom to choose and arrange positions of English language textbooks in the classroom. Teachers are respected and trusted individuals in Thai society, and they are the ones who transmit knowledge to students. In addition, textbooks are a form of literature produced for teaching various knowledge to students. The textbooks and teaching management of teachers are literature that those in Thai society accept and believe to be correct and appropriate (Sukwisith, 2013). The process of selecting books by teachers is related to past experiences of using books, the difficulty of content according to the condition of the children, and based on the standards and indicators of the Basic Education Curriculum of 2008. It is a selection of textbooks based on practical reasons and does not consider or have a gender perspective. However, it reflects that textbooks still play an important role in educational management in the school system, which is consistent with the research of Boriboon (2011) who states that the effectiveness of media, books, and textbooks affects the perception of gender inequality in power. This can be seen from the allocation of a large budget by schools for acquiring books from various publishers.

Beyond the process of textbooks selection, the arrangement and positioning of textbooks in the classroom are of great importance. It can be seen that in the ABC School, the positioning and status of textbooks are divided into two main categories. Firstly, textbooks are used as the main teaching materials in the classroom, which include textbooks for content transmission, dialogue examples, and exercises for students. Teachers have the authority to select and use content and examples from textbooks to teach students, as well as using other teaching aids. However, textbooks still hold importance as the main teaching materials in the classroom, as well as supplementary materials. In other words, textbooks are used for reviewing lessons or additional reading for students. As for classroom teaching, teachers adhere to standards and indicators based on the Basic Education Curriculum of 2008. Teachers may create knowledge sheets, internet media, games, or activities for students to learn, with textbooks serving as secondary materials for reviewing lessons.

### **Conclusion and suggestions**

The practice in the classroom requires the interpretation of teachers (Sivarom, 2008). Ethnicity, gender, and basic beliefs on gender issues vary. However, considering the views and attitudes of English teachers, they can be classified into 3 groups: 1) patriarchal or customary views/attitudes, which are values between females and males that vary according to the norms of women and men; expression through gender roles 2) gender neutral perspectives/attitudes are educational arrangements that focus on changing students' behavior. and 3) challenging perspectives/attitudes towards gender issue, an attempt by teachers to reduce and eliminate feminine and masculine issues through gender-based issues and to point out flexibility, fluidity, and challenge to gender role and gender stereotype bias (Nawarat, 2018). However, gender in Thai society is diverse, complex, fluid, inconsistent, and dynamic, reflecting changes in the structure of opinions about femininity in Thai society. (Thaweessit, 2004)

Teachers' knowledge, experiences, perspectives, and gender as individuals influence the practice of reproduction in equity, equality and diversity acceptance. On the other hand, it also influences the reproduction of the patriarchy from teachers' perspective which happen in classrooms. However, the reconstruction of gender issue can be appeared in classroom and in society which may be the result of economic, social, and political changes. Today's society and politics are increasingly aware of freedom, rights, equity, and equality, especially in the recent growth of student movements. It can be said that there is a flow of situation based on the context and circumstances that occur at the time.

### **New knowledge and the effects on society and communities**

This research focuses on class observations and interviewing teachers. It also looks at gender issue, which has been demanding for equality for a long time. It is important to understand how teachers react to gender ideology depends on their experience, class, race, gender and basic beliefs. This helps developing education system in Thailand to be a part of global citizenship education.

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## Movie Titles' Translation Strategies from English into Thai in Monomax Application

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### Abstract

The objective of this study is to analyze the strategies employed in translating English movie titles into Thai within the Monomax Application. A total of 501 English movie titles spanning the decade of 2011 and 2020 were examined because a decade provides clear guidelines for data collection, analysis, and interpretation. The strategies for translating film titles into Thai conducted by Thongwan (2012) served as a framework for this study. The findings revealed that all 10 translation strategies were employed as follows respectively: 1) naming a new name regardless of the old name, 2) naming a new name based on the original name, 3) partial translation and adding Thai language, 4) partial transliteration and adding Thai language, 5) all translation and adding Thai language, 6) all transliteration and adding Thai language, 7) all transliteration without adding Thai, and 8) all translation without adding Thai language. Meanwhile, the last two which are 9) partial transliteration without adding the Thai language and partial translation without adding the Thai language were found used only once per each. Notably, the translated movie titles in Thai often featured distinctive and attractive elements, such as rhyme and alliteration. These findings corresponded to Nida & Taber (1974) translation theory that translation process is related to purpose and cultural linguistic norms. Future studies could explore the reception and perception of these translated titles among Thai audiences, shedding light on which strategies resonate most effectively and why.

**Keywords:** Translation strategies, Movie titles, Movie title translation

## Introduction

Translation helps in conveying the meaning to be able to understand each other and creating a thorough understanding of the language's users or different civilizations to communicate with one another. Translation specialists have given the meaning of translation. For example, Nida & Taber (1974) stated that translation is the transmission of the meaning of a text from one language to another by keeping the meaning of the text exactly the same as the original. Anyway, in some situations, it is difficult to make equivalence of words or language structure between languages, so translation can share the common situation regardless of the linguistics (Catford, 1965).

Translations are used a lot in various media such as radio, news, translated novels, and movies. The English-Thai translation of movie titles is another translation work that people are interested in because the movie's title is a mean of communicating with Thai audiences who consume foreign movies; it aids Thai audiences to determine the plot and movies genres (Thongwan, 2012; Jantahjumrusrat, 2019). If there is no translation in a foreign movie's title, audiences may be forced to interpret the English title themselves, and the message the filmmakers or screenwriters intended to convey may or may not be correct (Xu, 2024).

Translation of foreign movie titles into the Thai language also adopted many translation techniques to make the title outstanding and interesting, such as the strategy of renaming and all transliteration without adding Thai language, etc. The strategies of translating movie titles from English into Thai are an interesting process because of the differences in language, society, and culture of both original text and translated text. Translation of movie titles is a cross-cultural activity concerning commercial purpose, so the translation strategies are needed for its catchiness to audiences. The movie titles also make the movies interesting by, for example, employing innovative and interesting wording, including conveying the story's meaning. (Xu, 2024)

A movie is a powerful media to approach people, and it can transmit tales, entertainment, knowledge, arts, cultures, traditions and beliefs etc. In the past, movies were screened in theatres, DVDs, and television programs. Nowadays, the internet is widely accessible for people and there are many online platforms for watching movies. Viewers are able to watch movies using online-movie services from various platforms, such as Netflix, Viu, or Disney+ Hotstar. In addition, there is another popular platform named Monomax application which is well known in Thailand because of its media in the same company, free TV named Mono 29 providing free movies. The application can be accessed with a reachable price, 99 Baht per month (information in 2024) and provide a huge amount of English and Thai named movies.

There have been studies of movie title translation from English into Thai in the past decade but spanning a few years per study and the results, apart from the most used strategies, seem to be various. The current research pays attention to the strategies used in movie title translation from English into Thai in a bigger duration and amount to see the whole trend of the movie industry at the time period. This might be the guideline for the current and next period which might follow the most used strategies or create a new trend to support the film market in Thailand to make it more attractive for the target audience.

The aim of this research is to understand the strategies used in translating movie titles from English to Thai, particularly focusing on titles released between 2011 and 2020. By examining these strategies, researchers seek to expand knowledge in the field of translation and contribute to the development of effective translation practices, especially in the context

of movie titles. Understanding translation strategies is essential for ensuring that translated titles accurately convey the essence of the original films to Thai audiences.

### Research Objectives

1. To analyze the strategies employed in translation of English movie titles into Thai from the Monomax Application based on the perspective of Thai culture and language usage concepts.

### Research Questions

1. Which translation strategies are mostly employed for translating English movie titles into Thai?
2. How are the discovered strategies utilized in the translation of movie titles from English to Thai?

### Definition of terms

The following terms are used in this research.

**Translation Strategies:** 10 movie titles' translation strategies from English into Thai by Supawan Thongwan (2012)

**Movie Titles:** Movies' names both in English language and Thai language

**Movie Title Translation:** The process of translating the titles of movies from English into Thai.

**Monomax Application:** An online movie-watching service used to collect data in this research

### Literature Review

According to translation scholars, such as Nida (1964), Newmark (1988), it can be concluded that translation is the process of transferring the meaning of a text from one language to another language. The original meaning of the text is an important aspect of translation retained and must be to convey both the taste and feel of the source language. The translation must have three main components: the source language, the target language, and the translator. The translators should be well-versed in communication, culture, and linguistics. They should have previous experiences and specialized knowledge in various fields, including meanings which must be accurately conveyed by the translation language with naturalness and writing style. As a result, the translation becomes good, elegant, and complete.

Nida's (1964) theory emphasizes conveying meaning over literal translation, aiming for equivalent effect on the target audience. His dynamic equivalence theory highlights the importance of cultural and linguistic context, requiring translators to be proficient in both languages and cultures. In "Toward a Science of Translating" (1964), Nida advocated for adaptability, encouraging modifications to resonate with the target audience. This theory has significantly influenced translation studies, shaping discussions on cross-cultural communication and effective translation strategies.

The process of translation starts from the source language (SL) which is analyzed and results in an understanding. Then there is the process of transferring the understanding or message to be restructured, finally, leading to the target language (TL). Nida's approach involves several key steps as the following.

*Analysis of Source Language Text:* Translators must thoroughly understand the source text's linguistic and cultural tones to capture the intended meaning.

*Semantic Structure:* Identifying the underlying semantic structure of the source language helps in conveying the same meaning in the target language, even if the words and expressions differ.

*Cultural Equivalency:* Recognizing cultural differences and finding equivalents in the target culture ensures that the translated message is not only linguistically accurate but also culturally relevant.

*Translating for Dynamic Equivalence:* Prioritizing the dynamic equivalence of meaning over literal word-for-word translation is crucial. The goal is to evoke a similar response in the target audience as the original text did in the source audience.

*Adjustment of Style and Form:* Adapting the style and form of expression to suit the target audience's linguistic and cultural expectations is a key aspect of Nida's approach.

In conclusion, Nida's translation procedures emphasize the dynamic and adaptive nature of translation, emphasizing the need to convey the essence and impact of the source text in a way that affects the target audience both linguistically and culturally.

Gap between source language and target language has also occurred in media translation. For instance, Sontisawang's (2020) study of translation techniques used in the Thai subtitle of the American movie "Deadpool" revealed the most found problem as the translation of cross-cultural text which can be solved by more than one translation strategies. Bunyaburana (2022) studied methods of subtitle translation from various genres stating that the limitation of subtitle translation are number of letters on screen, on-screen time, and position and size of letters on the screen. Bunyaburana's study shows that there are some limitations of specific types of translation.

Similarly, the adaptation of translation strategies into movie title translation also employs different strategies. The movie title translation in Thai language is another interesting process. There are some previous studies on strategies used in English to Thai Translation.

Janthajumrusrat (2019) studied "The strategies of foreign action movie titles translating into Thai." The study aimed to analyze strategies for translating foreign action movie titles into the Thai language, and to study the effect of movie viewer perception on the strategy of translating foreign action movie titles into Thai. A list of foreign action movies, 100 stories from 2013 to 2016, was analyzed considering translation strategies from English into Thai. There were two types of research tools: 1) a database table for analyzing titles' translation strategies for Thai-language foreign action films, and 2) A questionnaire to survey moviegoer's perceptions, which is then analyzed by calculating the percentage, mean, and standard deviation. The findings showed 19 strategies, and the most used strategy was "making a new name, not based on the original one. Moreover, according to audiences' perception, moviegoers were attracted the most by the strategy of partial transliteration with adding partial Thai language based on the plot because of the correspondence of both languages.

In addition, Thongwan (2012) studied "Translating American comedy film titles into Thai: strategies and analysis" aiming to analyze the strategies of translating American comedy movie titles into the Thai language. The researcher analyzed the titles of 98 American comedy movies released in Thai films between 2008 to 2010 by using Skopos Theory. It was suggested that the primary determinant of any translation should be its intended purpose, guiding decisions to ensure the translated text fulfils its specific communicative function for the target audience (Munday, 2016). She added terms about translation based on research on the translation of foreign horror movies and so on, then collected questionnaires from 100 movie viewers, and an in-depth interview of 5 respondents were collected for use in this study. The results showed that 10 methods of translation were used as follows:

1. All transliteration without adding Thai language
2. All transliteration and adding Thai language
3. Partial transliteration without adding Thai language
4. Partial transliteration and adding Thai language
5. All translation without adding Thai language
6. All translation and adding Thai language
7. Partial translation and partial transliteration without adding the Thai language
8. Partial translation and adding the Thai language
9. Naming a new based on the original meaning
10. Naming a new name regardless of the old name

The results of thongwan's (2012) study align with Janthajumrusrat's (2019) study. The most popular strategy used by translators is naming a new name regardless of the old name. This result is inconsistent with the results of the survey by moviegoers, which found that the names of American comedy film titles translated by the strategies of all translation and adding Thai language was the one they consented. It is a strategy for translating movie titles that conveys the meaning of the story and is the most attractive.

In conclusion, most of the previous studies concluded that there is no best translation strategy for movie title translation because of the inconsistency among movie viewers and the scattering employment of strategies. Most of them studied the strategies during a few years, but the current study tries to extend the period and number of samples as described in the next part.

## Methodology

### 1. Data Source

1.1 Monomax application is the source for primary data in this research containing a list of translated movies' titles. The application offers a vast and varied dataset of English movies with Thai translation, providing rich material for analysis. Moreover, the main company, known as Mono Next, provides a free TV channel, Mono 29, with the nuanced logo with Monomax application. Audiences who want to watch more movies from its application can access this application easily at a cheap price of 99 Baht per month according to the information in 2024.



**Figure 1** Logos of Mononext's chain (Source: Researcher, 2024)

1.2 The samples were the data collected during the years 2011–2020 out of the population of all movie titles in the application. The stated decade was the scope of the collected data because the timeframe of a decade helps in setting clear boundaries for data collection, analysis, and interpretation in the trend of film industry and translation practices during specific time.

## 2. Data Collection

- 2.1 Studied translation strategies, especially the emphasis on titles.
- 2.2 Set a model list of translation strategies on movie titles
- 2.3 Analysed the translation of movie titles using theories of translation strategies.
- 2.4 Categorized the analysis results according to the translation strategies.
- 2.5 Summarized and presented the results and discussion.

## 3. Data Analysis

### 3.1 Research Tools

The conceptual framework for this research study is derived from translation strategies in the study *Translating American Comedy Film Titles into Thai: Strategies and Analysis* by Supawan Thongwan (2012) because the strategies in the study were created to fit the specific English-to-Thai movie title translation strategies. According to Thongwan (2012), the information of movie title translation was compiled then the sample movie titles were categorized by the characteristics following movie title translation strategies. The result strategies from the previous study were adjusted in the present study to ease the categorization. There are 3 main categories: transliteration, translation, naming a new name, with different details. *Transliteration* means the act of writing the same words using letters of a different alphabet or language (Oxford Learner's Dictionary). *Translation* in this case is literal translation of the words in English movie titles into Thai movie titles. *Naming a new name* is the use of new movie titles in Thai language not derived from the meaning of English movie titles. The strategies of Transliteration and Translation contain the details of partial and all together with adding and not adding Thai language apart from the original English words. Totally, there are 10 strategies for the movie title analysis process as follows:

**Table 1** Lists of movie titles' translation strategies from English into Thai

No.	Strategies of translations	Examples from Previous Study
1	All transliteration without adding Thai language	<u>Toy Story 3</u> ทอย สตอรี่ 3
2	All transliteration and adding Thai language	<u>Kung Fu Panda</u> กังฟูแพนด้า วิบัติการณ์สยองโลก
3	Partial transliteration without adding Thai language	<u>High School Musical: Senior Year</u> ไฮสคูล มิวสิคัล
4	Partial translation and adding Thai language	The House <u>Bunny</u> บ้านนี้สาว หัวใจซี้ด
5	All translation without adding Thai language	<u>You don't mess with the Zohan</u> อย่าเหยียดโซฮาน
6	All translation and adding Thai language	<u>Killers</u> เทพบุตรหรือนักฆ่า บอกรมาชะดิด้า
7	Partial translations without adding the Thai language	N/A
8	Partial translations and adding Thai language	How to Train Your <u>Dragon</u> อภินิหารไวคิง พิชิตมังกร
9	Naming a new name based on the original meaning	Cats & Dogs: The Revenge of Kitty Galore สงครามพชัคร์ร้ายขนปุย 2
10	Naming a new name regardless of the old name	Despicable Me มิสเตอร์แสบ ร้ายเกินพิภัก

### 3.2 Method of Data Analysis

3.2.1 The percentage is used to present the frequency of the strategies of movie title translation using the Excel program, with the following formula.

$$(N \times 100) \div T$$

N = The frequency of a strategy used

T = The total number of strategies used

3.2.2 The collected data, English and Thai movie titles, was categorized by the strategies for translating movie titles from English into Thai. The results in each strategy were rechecked by 5 interraters.

3.2.3 The results were analyzed and classified by the noticeable differences in percentage.

### 4. Data Presentation

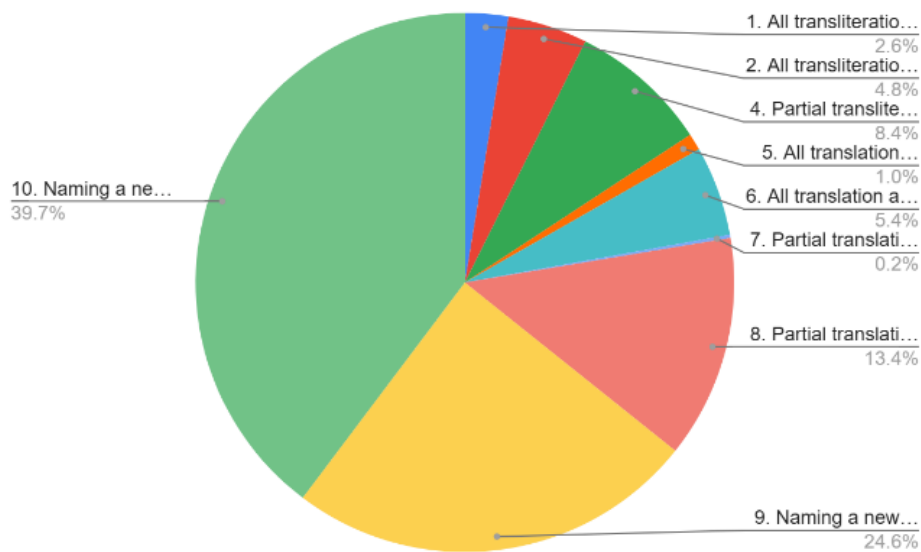
The results of movie title translation strategies from English into Thai, during 2011-2020 are presented in, first, tables showing frequency and percentage found, together with other details of the results. Other details are in the discussion of results of how these strategies are used.

## Results

In order to answer the research questions “which translation strategies are mostly employed for translating English movie titles into Thai?” and “how are the discovered strategies utilized in the translation of movie titles from English to Thai?”, the following table shows the strategies found ordering from the most to the least employed strategies respectively.

**Table 2** Results of strategies for translating English movie titles into Thai ordered by the frequency of strategies used

No.	Strategies	Frequency	Percentage
1	Naming a new name regardless of the old name	199	39.72
2	Naming a new based on the original meaning	124	24.75
3	Partial translation adding Thai language	66	13.17
4	Partial transliteration adding Thai language	41	8.18
5	All translation adding Thai language	27	5.39
6	All transliteration adding Thai language	24	4.79
7	All transliteration without adding Thai language	13	2.59
8	All translation without adding Thai language	5	1.00
9	Partial translation without adding the Thai language	1	0.20
10	Partial transliteration without adding Thai language	1	0.20
<b>Total</b>		<b>501</b>	<b>100</b>



**Figure 2** Pie chart of the Results (Source: Researcher, 2024)

Regarding 10 strategies for translating movie titles from English into Thai, it was found that all 10 translation strategies were found in the translated movie titles in the Monomax application from 2011-2020 with different frequency. It is noticeable that the most used strategy was “naming a new name regardless of the old name”, 199 out of 501 calculated as 39.72%. The least frequently used strategies are “partial translation without adding the Thai language” and “partial transliteration without adding Thai language”. More details were discussed below.

### Discussion of Each Strategy

The results of the most employed strategy reveal that the titles of foreign movies mostly create new Thai names and ignore the original name in English. Table 3 shows some examples of the 199 findings categorized in “naming a new name regardless of the old name”.

**Table 3** Examples of the translated movie titles using the strategy “Naming a new name regardless of the old name”

<b>1. Naming a new name regardless of the old name</b>				
<b>No.</b>	<b>Years</b>	<b>English Movie Titles</b>	<b>Thai Movie Titles</b>	<b>Meaning of Thai-Language Titles</b>
1	2011	Polisse	สู้เพื่อดวงใจอันยิ่งใหญ่	Fight for the great heart.
2	2011	Violet & Daisy	เปรี้ยวซ่า...ล่าตัดหัว	Sour and tangy...hunt for the head.
3	2012	King Of the Street	ซัดไม่เลือกหน้า ฆ่าไม่เลือกพวก	Beat whoever and kill anyone from any gangs.
4	2012	Magic Mike	เขย่าฝันสะบัดซิกแพค	Shake off your dreams, shake off your six pack.
5	2013	Twice Born	สายสัมพันธ์แห่งรัก	Bond of love
6	2013	Very Good Girls	มิตรภาพ...พิสูจน์รักแท้	Friendship proves true love.
7	2014	Lost River	ฝันร้ายเมืองร้าง	Abandoned-City Nightmare
8	2014	Love, Rosie	เพื่อนรัก ก็กัเป็นแฟน	Close friend, concealing the desire of being a lover
9	2015	Little Boy	มหัศจรรย์พลังฝันบนลิ้นโลก	Miraculous power of dreams which is well-known throughout the world
10	2015	Child 44	อำมหิตซ่อนโลก	Cruelty hidden in the world
11	2016	Brain on Fire	เผชิญหน้า ท้าปาฏิหาริย์	To face and challenge the miracle
12	2016	The man with the iron heart	ปฏิบัติการลับดับนาซี	Secret operation to extinguish Nazis
13	2017	Kidnap	ล่าหยุดนรก	Hunting to stop hell
14	2017	Sleepless	คืนเดือด คนระห่ำ	Fierce night, daredevil
15	2017	Wind River	ล่าเดือด เลือดเย็น	Fierce hunting, cold blood
16	2018	Future world	สงครามล่าคนเหล็ก	War of the iron man hunt
17	2018	Peppermint	นางฟ้าห่ากระสุน	Bullet hell angel
18	2018	The Row	สวยราวเลือด เชือดลากไส้	Bloody beautiful, cut and dragged out the guts
19	2019	Cold Pursuit	แค้นลั่นนรก	Wrath is noisy in hell.
20	2020	Brahms : The Boy II	ตุ๊กตาซ่อนผี 2	The doll with ghost hidden inside 2

Regarding the analysis of the strategy, it was found that the translated movie names preferred to follow their story's main idea as mentioned in Laongpol, 2020. If the titles had been literally translated, some might be incomprehensible. On the other hand, the translation in Thai language is not fascinating enough. Thus, creating a fresh title that effectively communicated the genre or content of the film, ensuring maximum understanding for the audience is needed. The most found strategy supports the study of Thongwan (2012), Janthajumrusrat (2019), and Laongpol (2020).

For example, the title “Peppermint” (2018) was translated with the meaning “Bullet hell angel” (นางฟ้าห่ากระสุน - nang-fha ha kra-sun). Generally, peppermint is a strong fresh flavoring from a type of mint plant, used especially to give flavor to sweets (Cambridge

Dictionary). The character of the English title is short and implies something as stated in Bai's (2018) study that a great English movie title is usually one or two keywords with strong implication. Once it is turned into a Thai title, it may sound like a flavor of gum which makes it difficult to guess the story. In contrast, the translator seemed to guide the plot and used evocative words to attract and excite audiences. The Thai title was derived from its storyline. Riley, whose husband and daughter were murdered by drug dealers, thought the law would bring justice to her family, but the courts failed to punish them. Amidst her disappointment and grief, anger drove Riley to change and train herself to become a killer, and bring justice to the wrongdoers in her own way. The movie "Peppermint" gets its name from a key moment involving Riley's daughter, who loved peppermint ice cream. This memory symbolized Riley's motivation and the contrast between her daughter's innocence and the violence she faced. The name highlights Riley's grief and her drive for justice.

Regarding second employed strategies: naming a new name based on the original meaning which were found in 124 titles, 24.75%, examples of the strategies are shown in table 4. The words related were underlined as shown.

**Table 4** Example of the translated movie titles using “Naming a new name based on the original meaning”

2. Naming a new name based on the original meaning				
No.	Years	English Movie Titles	Thai Movie Titles	Meaning of Thai-Language Titles
1	2011	<u>Creature</u>	อสูรของแดนดิน	Terrifying <u>Demon</u> on the land/earth
2	2012	<u>Aftershock</u>	คนคลั่ง 8.8 ริกเตอร์	People are crazy at 8.8 <u>Richter Scale</u> .
3	2012	<u>Now is Good</u>	ขอบคุณวันนี้ที่เรายังมีเรา	Thanks for having each other <u>today</u> .
4	2013	Fading <u>Gigolo</u>	ขอชายนายดอกไม้	<u>Mr. flower</u> , the great man
5	2014	<u>Boychoir</u>	จังหวะนี้ใจสั่งมา	This <u>rhythm</u> is commanded by my heart.
6	2014	<u>Hercules 3D</u>	โคตรคน พลังเทพ	Great man with <u>god</u> power
7	2015	Life <u>Partners</u>	กิ๊กเพื่อนรัก กิ๊กเพื่อนเลิฟ	<u>Part-time lover</u> friend, concealing the falling in love with a close friend
8	2015	Queen of the <u>Desert</u>	ตำนานรักแผ่นดินร้อน	love legend, <u>hot region</u>
9	2016	<u>Abattoir</u>	บ้านกักผี	A <u>house</u> imprisoning ghosts
10	2017	Before I <u>Fall</u>	ตื่นมาทุกวันฉันตาย	Waking up every day, I <u>die</u> .
11	2017	The <u>Zookeeper's</u> Wife	ฝ่าสงครามทรงสมรภูมิ	Through the battlefield- <u>cage</u> war
12	2018	<u>Freaks</u>	คนกลายพันธุ์	<u>Mutant</u> human
13	2019	<u>Departures</u>	จะรักใครอย่าให้หัวใจต้องคิเล็ย	If you love someone, don't let your heart be <u>delayed</u> .
14	2019	Little <u>monsters</u>	ซอมบี้มาแล้วจับ	<u>Zombies</u> have come to bite.
15	2020	<u>Howling village</u>	อุโมงค์ผีคู่	<u>Fierce ghost</u> tunnel

The strategy of naming a new name based on the original meaning involves using some Thai words that are recognizable similar to those in the original English movie names, but the overall meaning may not be related. They may relate in general or relate with Thai culture. For example, of the titles with close meaning between the original and the translated, the movie title “Aftershock” (2012) was translated as คนคลั่ง 8.8 ริคเตอร์ (khon klang 8.8 Richter). The Thai version means people were crazy when the earthquake reached 8.8 Richter Scale. Both “Aftershock” and “Richter” are related to earthquakes. *Aftershock* means a slighter sudden movement of the earth's surface that often follows an earthquake, and “Richter”, generally known by Thais, was shortened from the word Richter Scale which is a system used to measure the strength of an earthquake. Regarding the movie *Creature*, the word “อสูร” (a-soon) is related to the word “creature” because “อสูร” (a-soon) refers to “a devil” or living things in an unpleasant way and “creature” refers to living things in common as well.

On the other hand, some translated Thai movie names are associated with Thai culture in language use. For the first example, *Little Monsters* (2019) was translated as ซอมบี้มาแล้วจับ (Sombie ma laeo ngab) in Thai. According to the plot, the story in this movie occurred in a school with children to be saved from zombies. The Thai meaning is Zombies have come; the word “zombie” is related to the word “monster” as they are scary non-human creatures. Moreover, to make the Thai title catchier, the word “ngab” can be interpreted as 2 meanings. The first is “to bite” expressing the action that zombies always do in any film. Another meaning of “ngab” is a cute pronunciation of the word “krab” which is the ending sound in a sentence for men to show politeness in Thai language. Perhaps, this cute pronunciation was used to express the cuteness of most characters in the story who were children.

Secondly, the title “Fading Gigolo” in English is translated in Thai as ยอดชายขายดอกไม้ (Yod Shaai Naai Dok Maai). The word gigolo and Nai Dok Mai are similar in meaning. *Gigolo* means a man who is paid by a woman to have sex with her or spend time with her”. (Cambridge Dictionary). Meanwhile, the word *Dok Maai* which means *flower is* compared to the situation where *flowers* on the side road are collected by anyone to smell temporarily then they throw the flowers away. In addition, Naai in Thai is the title to call a man, compared to the title Mister. Although the lead actor was a florist, flower seller, according to the plot, the meaning expressing Thai culture appeared in Thai movie titles. Similar to the results of subtitle translation by Taowan (2021), cultural substitution can be found in the movie title if the context fits the words in the target language. With this technique, it is more interesting and seems to access audiences as well.

**Table 5** Examples of the translated movie titles using “Partial translation adding Thai language”

3. Partial translation adding Thai language				
No.	Years	English Movie Titles	Thai Movie Titles	Meaning of Thai-Language Titles
1	2011	<u>Family</u> of Cannibals	ตระกูลโหด โหดไม่ซ้ำ	Brutal <u>family</u> , unrelentingly brutal
2	2012	Stash <u>House</u>	คนโหดปิดบ้านเชือด	Cruel guys locking a <u>house</u> to kill
3	2013	<u>Spiders</u> 3D	ฝูงแมงมุมยักษ์ถล่มโลก	Swarms of giant <u>spiders</u> attacking the world
4	2014	Hungry <u>Ghosts</u>	คืนปล่อยผี	The night of <u>ghost</u> release
5	2015	The <u>Curse</u> of Downers Grove	โรงเรียนต้องคำสาป	A School being put a <u>curse</u> on
6	2016	Before I <u>wake</u>	ตื่นแล้วเป็น หลับแล้วตาย	<u>Wake</u> up and alive. Sleep and die.
7	2016	Come and <u>Find</u> Me	ยิ่งหา ยิ่งหา	The more <u>finding</u> , the more losing
8	2017	<u>Rescue</u> Under Fire	ทีมกู้ชีพมหาประลัย	Mass destructive <u>rescue</u> team
9	2018	Midnight <u>sun</u>	หลบตะวัน ฉันรักเธอ	Hiding the <u>sun</u> , I love you
10	2019	<u>Scary</u> Stories to Tell in the Dark	คืนนี้มีสยอง	Tonight, there are <u>scary</u> things.

Table 5 shows more examples for “Partial translation adding Thai language” with the frequency of 66 calculated as 13.17%. It is to translate some English words in a title into Thai, together with adding Thai language. For examples, the movie “Spiders 3D” (2013) was translated in Thai as ฝูงแมงมุมยักษ์ถล่มโลก (Foong maeng-mum yak talom lok). The word spider is translated directly as “maeng-mum”. The word 3D which means, according to Cambridge Dictionary, the objects looking real and solid instead of looking like a normal flat picture, is not translated. However, the meaning of 3D is transferred as attacking the world together with the sense of spiders possessing the town by their amount as the word *swarms of giant spiders* following the plot of the movie. Regarding its plot, according to some problems with the Russian space station that crashed in New York, some pieces fell into an underground subway. Some molecules from space reacted with the spider's cells causing the spiders to be as big as a 30-storey building. They destroyed the city like crazy, thus terrifying the human race.

It is noticeable that this strategy was mostly used to translate nouns from English titles, such as the words *family*, *house*, and *ghosts*. This might be the main part that translators see and keep before adding Thai modifiers. However, there were some other parts of speech chosen to be translated before adding Thai language, such as *wake* and *rescue*.

**Table 6** Examples of the translated movie titles using “Partial transliteration and adding Thai language”

4. Partial transliteration adding Thai language				
No.	Years	English Movie Titles	Thai Movie Titles	Meaning of Thai-Language Titles
1	2011	Midnight in <u>Paris</u>	คืนปมรักที่ปารีส	A Night of Love in <u>Paris</u>
2	2013	Last <u>Vegas</u>	แก๊งค์เก๋า เซซ่าเวกัส	Cool (slang) gang shaking <u>Vagas</u>
3	2014	The <u>babadook</u>	บาบาดูก ปลูกปีศาจ	<u>Babadook</u> , the Demon Awakening
4	2015	The Hunger Games: <u>Mockingjay</u> Part 2	เกมล่าเกม มีอกกิ้งเจย์ พาร์ท 2	Game of hunt: <u>Mockingjay</u> Part 2
5	2016	Pride & Prejudice & <u>Zombies</u>	เลดี้ซอมบี้	Lady <u>Zombie</u>
6	2017	A Bad Moms <u>Christmas</u>	คริสตต์มาสป่วนแก๊งค์แม่ชวนก๊ก	Chaotic <u>Christmas</u> with the gang of excited mothers
7	2018	The Hummingbird Project	โปรเจกต์สายรวย	Rich-line Project
8	2018	The <u>spy</u> who dumped me	2 สไปย สวมรอยข้ามโลก	2 <u>spies</u> impersonate across the world.

Regarding the third strategy, 41 titles, 8.18%, employing partial transliteration adding Thai language were found. It is obvious that most movie titles using this strategy have the characteristic of a proper name of, for example, city and people. However, some words which can be translated but well-known in Thai are also used in the form of transliteration, such as *Christmas*, *project*, and *spy*. Considering the proper name, The movie “Last Vegas” (2013) was transliterated with adding Thai language as แก๊งค์เก๋า เซซ่าเวกัส (Gang gao kha-yao Vegas) interpreted as cool gang shaking Vegas. The word “gao” means *old and experienced*; it refers to the 3 protagonists who were post-retired seniors traveling to have fun and chaos in Las Vegas, a famous city full of entertainment of resort, party, gambling, etc., and the word “kha-yao Vegas” means *to shake Vegas*. Maybe, the reason for choosing to transliterate “Vegas” is because the word “Vegas” is generally spoken by Thais to refer to Las Vegas.

At the same time, the fifth and the sixth strategies have close numbers in frequency. All translation adding Thai language, ranking the fifth, have 27 titles, 5.39% as shown in table 7. Meanwhile, all transliteration adding Thai language appeared in 24 titles, 4.79% as shown in table 8.

**Table 7** Examples of the translated movie titles using “All translation adding Thai language”

5. All translation adding Thai language				
No.	Years	English Movie Titles	Thai Movie Titles	Meaning of Thai-Language Titles
1	2012	Run Hide Die	ทริปสยอง วิ่ง ซ่อน ตาย	Horror trip: <u>Run Hide Die</u>
2	2014	Insects in the Backyard	แมลงรักในสวนหลังบ้าน	<u>Insects</u> of love <u>in the backyard</u>
3	2014	Wolves	วูล์ฟ สงครามพันธุ์ขี้	Wolves: war of mauling species
4	2016	Nine Lives	แมวเก้าชีวิตที่ขิ้นสุดโลก	The world's most unusual <u>nine-life</u> cat
5	2018	Wish Upon	พร ขอ ตาย	- Blessing, <u>wish</u> , die - The blessing which you <u>wish</u> and die
6	2019	The Warriors Gate	นักรบทะลุประตุมหัศจรรย์	<u>Warriors</u> go through a miraculous <u>gate</u>

The whole words in the English titles were translated or transliterated then Thai words were added. There were various techniques to add Thai language. For example, some adjectives or modifiers were added. Concerning *all translation adding Thai language*, *Nine Lives* (2016) was translated with the meaning “The world's most unusual nine-life cat”. Moreover, verbs and adjectives were added from direct translation words to make it more attractive. For example, *Warriors Gate* turned “Nakrob Talu Pratu Mahassajan (นักรบทะลุประตุมหัศจรรย์) which means a warrior getting through a miraculous gate. Similarly, for the all transliteration adding Thai, the meaning of the Thai version of *Wolves* (2014) were “Wolves: war of mauling species”. It is noticeable that there were one or two words in the original titles, so once they were translated or transliterated, the meaning was not clear nor attractive in the Thai sense. Anyway, these strategies were used with the titles which already contain the storyline but still need some explanation. However, these two strategies were not quite chosen.

**Table 8** Examples of the translated movie titles using “All transliteration adding Thai language”

6. All transliteration adding Thai language				
No.	Years	English Movie Titles	Thai Movie Titles	Meaning of Thai-Language Titles
1	2012	Cloud Atlas	คลาวด์ แอตลาส: หยุดโลก ข้ามเวลา	Cloud Atlas: stop the world to skip the time
2	2013	Jobs	สตีฟ จ๊อบส์ อัจฉริยะเปลี่ยน โลก	Steve Jobs, a genius who changed the world
3	2014	Wolves	วูล์ฟ สงครามพันธุ์ขี้	Wolves: war of mauling species
4	2016	Bad moms	แบด มัมส์ มันส์คะ คุณแม่	Bad moms: it's gonna be fun, moms.
5	2017	Logan Lucky	แผนปล้นลิคี่ โชคดีนะโล แกบน	<u>Lucky</u> robbery plan: good luck, <u>Logan</u>
6	2019	Polaroid	โพลารอยด์ ถ่ายติดตาย	Polaroid: a person whose portrait is taken has to die.

The characters of all transliteration adding Thai language is that the original names are just one or two words. They are borrowed words in Thai titles with a plus of Thai language to tell the theme of the story. Maybe, the transliteration was used because the original English name seems to be an important part in the story and it's the keywords which attract Thai audiences or be familiar for Thais. However, it is still too short and specific, not enough for Thai audiences, so Thai explanation was added to tell the genre or feeling of the movies.

Now focusing on the rare strategies, tables 9 - 12 show the results of little employed strategies. They are all transliteration and all translation without adding Thai language and partial transliteration and partial translation without adding Thai language with the percentage of 2.59, 1.00, and 0.20 for the last two.

**Table 9** Examples of the translated movie titles using “All transliteration without adding Thai language”

7. All transliteration without adding Thai language				
No.	Years	English Movie Titles	Thai Movie Titles	Meaning of Thai-Language Titles
1	2013	Romeo Juliet	โรมิโอ จูเลียต	Romeo Juliet
2	2015	Irrational Man	อิเรชันนัล แมน	Irrational Man
3	2016	The Salesman	เดอะ เซลส์แมน	The Salesman
4	2017	Spider-man: Homecoming	สไปเดอร์แมน: โฮมคัมมิ่ง	Spider-man: Homecoming
5	2018	Stockholm	สตอกโฮล์ม	Stockholm

**Table 10** Examples of the translated movie titles using “All translation without adding Thai language”

8. All translation without adding Thai language				
No.	Years	English Movie Titles	Thai Movie Titles	Meaning of Thai-Language Titles
1	2014	Before I Disappear	ก่อนที่ฉันจะหายไป	Before I Disappear
2	2015	Visions	ลางสังหรณ์	Visions
3	2016	I am a Hero	ข้าคือฮีโร่	I am a Hero.

**Table 11** Result of the translated movie titles using “Partial transliteration without adding Thai language”

9. Partial transliteration without adding Thai language				
No.	Year	English Movie Titles	Thai Movie Titles	Meaning of Thai-Language Titles
1	2017	Eric Clapton: Life In 12 Bars	เอริก แคลปตัน	Eric Clapton

**Table 12** Result of the translated movie titles using “Partial translation without adding Thai language”

10. Partial translation without adding Thai language				
No.	Years	English Movie Titles	Thai Movie Titles	Meaning of Thai-Language Titles
1	2015	The Last Witch Hunter	เพชรฆาตแม่มด	Witch Hunter

The remark found from these 4 tables is that the translation *without adding Thai language*, appeared as the bottom 4 strategies, ranked 7 to 10, were rarely used as the strategy for English to Thai translation of movies. Focusing on the characters of the four bottom strategies, for the seventh, there were 13 titles (2.59%) using all transliteration without adding Thai language, such as *Romeo Juliet* (2013). Moreover, the movie titles using all translation without adding Thai language, ranking the eighth, appeared in 5 titles (1%), such as *Before I Disappear* (2014). The titles with these two strategies sound comprehensible and express the main idea of the story themselves. Thus, it seems not clear without adding Thai language.

On the other hand, it is also remarkable that partial both transliteration and translation without adding Thai language, the least adopted strategies, were found only one each in the sample movie titles during 2011 to 2020. The result agreed with Thongwan's (2012) study which found only 1 movie (1%) using partial transliteration without adding Thai language strategy. This translation strategy might be suitable for some specific name which is well-known and sounds clear according to the plot. In addition, for partial translation without adding Thai language, *The Last Witch Hunter* (2015) is translated as *Witch Hunter*; only one adjective “the last” was removed. Anyway, the lost word did not affect the main plot in the Thai title.

Briefly, it is quite outstanding that the translation *without adding Thai language* is not a favourite norm in the field of movie title translation in Thailand. These strategies seem to contrast to, as mentioned before, the characters of a movie's translation which need to convey the meaning of the theme and plot of the movie and must be attractive for audiences, and it is rare to find the movie titles which are translated or transliterated with no need of more Thai translation.

## Discussions

Regarding the overall aspect of the results, the points are discussed below.

1. The results of the most adopted strategies in this study supports the results of Thongwan (2012) and Janthajumrusrat (2019) stating the top strategies used in movie title translation are naming a new name regardless of the original name. In the present study, naming a new name based on the original name is also ranked as the second top. Thus, instead of translation or transliteration of some words in the titles, the hint of the story using new words seems to be easier to control the mood of the movies. Ruangsri (2004) also mentioned the related characteristics of the catchy name in her study of creating titles for TV programs in Thailand. For example, the word “La” (ล่า) meaning “to chase” appeared in 43 movie titles, and the word “Deud” (เดือด) meaning “being furious or being boiling” appeared in 14 movie titles. Arousing words which guide the exciting theme of the movies seem to rouse audiences to watch the movies. Bai (2018) also mentioned that informative function is crucial to movie title translation. It can be inferred that the catchy, attractive, and comprehensible movie names are the most concern in the film industry although the translation in Thai name is not related to the original English name.

2. Another focus is drawn to the strategies *without adding Thai language* which are at the bottom part of the result table, totally calculated as 3.99% while the four strategies with adding Thai language are calculated as 31.74%. Moreover, regarding the group of strategies adding Thai language, the finding shows that both partial and all *translation* outnumbered partial and all *transliteration*. These two points can be interpreted that the translators try to catch up with the theory concerning the deepest understanding of audiences, so they rather tried to convey the meaning or used a domestication strategy. During the past decades, domestication in film strategy was mainly concerned.

3. Anyway, the all and the partial “transliteration” (15.76%) was not adopted much less than the whole kinds of the “translation” (19.76%) according to the analysis of the current research. It was found that, first, the words in the titles are some specific names, such as main characters or places. Second, translators may use the same English word because the original titles are already well-known or clear in meaning for the target audiences. The transliteration is a foreignization strategy. According to Xu (2024), the foreignization strategy in English film title translation is chosen because the translators aim to immerse audiences in the feeling of the original language's culture.

4. It is also found that the aesthetic idea is applied frequently in the translated titles including rhyme and alliteration. Some titles with rhyme - the same sound words - are, for example, *Love, Rosie* (2014) translated as *phuenrak kak pen fan* (เพื่อนรัก ก็ก็เป็นแฟน - close friend, concealing the desire of being a lover) and *Before I Fall* (2017) was *tuen ma tukwan chan taai* (ตื่นมาทุกวันฉันตาย - Waking up everyday, I die). Additionally, alliteration - the use of words beginning with the same sound or letter - was also used frequently in the translated movie titles in Thai although it was used less than rhyme. For instance, *Queen of the Desert* (2015) was translated as *tamnan rak, phandin ron* (ตำนานรักแผ่นดินร้อน - love legend, hot region) and *Come and Find Me* (2016) was translated as *ying ha ying haai* (ยิ่งหา ยิ่งหาย - The more finding, the more losing). According to Xu's (2024) English film title translation to Chinese, the factors of film title translation are related to language and culture features, aesthetic ideas, and commercial factors. Comparing the results of Thai language in movie title translation, it is quite clear that culture features, aesthetic ideas, and commercial factors are also concerned as mentioned in Nida's (1964) *Translating for Dynamic Equivalence*.

## Conclusion and suggestions

### Conclusion

In conclusion, the present research investigating translation strategies used in movies' titles from English into Thai found all 10 strategies. While previous studies stated that there was no precise conclusion about the best strategies, the current study made it clearer from 501 movie titles during 2011-2020 that, overall, the most employed strategy group for movie title translation is naming a new name. Next group is the strategies adding Thai language, and the last group employed is strategies without adding Thai language. The most used was “naming a new name regardless of the old name”, and another naming a new name ranked the second. It also discovers that the strategies without adding Thai language, whether with all or partial translation or transliteration are not adopted much in the movie title translation in Thai. It can be seen that the strategies used in movie title translation have the characteristics of “interchangeable in a given situation” (p. 49) and translation is better when the situation is shared in common although they rarely are similar in linguistic sense (Catford, 1965).

According to the above parts, the discussion was explained along with Naida's (1964) and Newmark (1988) translation theory claiming that translation is an analysis of source text going through a simple process that is easy to understand, and the translation conveys meaning as much as possible to match the target language using the strategies appropriate for that movie. Obviously, meaningful translations play an important role in mass media translations because Naida's translational theory and procedures focus more on semantic interpretation (non-literal translation, meaning-based translation, and idiomatic translation) than word-by-word. Therefore, the translator needs to accurately convey the ideas from the original to the translated language and not distort the original meaning. Translators can also adopt words, idioms, and euphemisms to express the translated language in a way that is equivalent to the original language.

### **Recommendations**

1. Further study may investigate the strategy of translating movie titles from English into Thai provided in other applications, such as Netflix, Disney+, VIU, Aisplay, WeTV and Line TV, etc.
2. Further study can compare the titles of the translated movie titles provided in more than one application using the strategy of translating movie titles from English into Thai.
3. It is also suggested to survey moviegoers' opinions on Thai translated titles for other foreign movies such as Indian, Korean, and Chinese movies, etc.

### **New knowledge and the effects on society and communities**

The current research on movie title translation from English to Thai offers benefits for translation education and the film market. By providing extensive information on translation strategies and numerous detailed examples, it serves as a valuable resource for translation learners. These learners can use the insights to create compelling movie titles that resonate with Thai audiences, whether they follow common strategies or experiment with new ones.

Additionally, the research's vast sample size can guide marketing strategies for international film translations, ensuring promotional materials are culturally and contextually appropriate for the Thai market. Effective localization can enhance a film's marketability and audience engagement, contributing to the success of foreign films in Thailand.

In conclusion, this research promotes effective communication and offers valuable insights into translation practices, making it an essential resource for future research and understanding in the digital media landscape.

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## A study of the Decision to Enter Higher Education in Ordinary Upper Secondary School Students in Chiang Mai Educational Service Area

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### Abstract

This research aimed to study factors, problems, and suggestions that affected the decisions to study in the Higher Education of the Ordinary High School Students in Chiang Mai Educational Area. The researcher used stratified random sampling and collected data from 399 students by questionnaire deviation with descriptive statistics including percentage, mean, and standard deviation. The personal factors were as follows: the students decided to study by themselves at a high level with a mean score of 4.38. The factors of higher educational institutes were as follows: the has modern media, equipment, and teaching and learning at a high level with a mean score of 4.33. The factors of society, economy, politics, and competition were as follows: when they graduated, they would have opportunity to get a job and high income in high level with the mean score of 4.37. The important problems of personal factors were as follows: the students did not know their preferences or aptitudes or potential, so they were confused to choose higher education institute and study major. The important problems in the factors of the higher educational institute were as follows: the university will be acceptable from university's teaching and learning, and study curriculum of higher education institution. The most important suggestion curriculum should be updated to suit the current situation. Next is suggestions for the quality of teaching and learning, the university should have modern and up-to-date development for responding to students' requirements effectively and suggestions borrowing money for ducation. The loan limit should be increased in accordance with the current economic situation.

**Keywords:** Factors affected by decision, Higher school students, Higher education

## Introduction

In today's world, there are rapid changes in technology, economy, society, culture, and education. Including the change of the population structure from the working age to an aging society with more elderly people and a lower birth rate. The transition to an aging society will soon take place as well, with 10 percent of the population aged 65 years and over, or more than 7 million people, and it is expected that in 2021 the proportion of the number of The number of elderly people will increase to 20-30 percent, indicating that for every 100 people we will find 30 elderly people. Department of older persons Ministry of Social Development and Human Security of Thailand (2024).

To attend school and students who will enter higher education institutions in the future Institute for Population and Social Research, Mahidol University (2006) from the National Statistical Office. It shows the number and proportion of the population compared to the total population. Classified by age group, it was found that the population of children (under 15 years) amounted to 11,304,871 people, 17.08 percent of the population of the working age (15-59 years) amounted to 43,097,272 people, representing 65.11 percent, and the elderly population (60 years and over). There are 10,225,322 people, representing 15.45 percent. It can be observed that the proportion between the childhood population and the elderly population is significantly similar National Statistical Office (2017). The future impact on the number of young people who will attend school has a reduced rate, resulting in smaller schools closing or merging smaller schools. Due to the decline in the childhood population, including the value of Thai society to allow their children to study in prestigious schools, as well as the impact on higher education institutions in the future where students who are referred from schools will have a higher enrollment rate. study in tertiary institutions, reduced rates affecting the operations of higher education institutions in the future.

In such a situation, the government has a solution to the problem by improving the quality of education and lifelong learning. To be a guideline for developing the potential of human resources in the country to have quality lifelong learning have professional skills adjust the school management system. Adjust the curriculum to produce teachers that focus on competency have a teacher's spirit Be a guide and able to stimulate the learning of learners. Develop a standardized quality assessment system that can measure and evaluate the quality of learners. in terms of skills, knowledge, abilities, and competencies according to learning standards for each educational level Promote incentive measures for medium-sized enterprises with the potential to participate in bilateral or cooperative education.

The guidelines, it has been defined in the 12th National Economic and Social Development Plan Office of the National Economic and Social Development Board. (2015). Higher education institutions in Thailand are diverse and established to develop the country's population quality. Including raising the level of education to meet international standards that are accepted nationally and internationally Universities and colleges in Thailand are categorized as follows: 15 autonomous universities, 65 public higher education institutions, 72 private higher education institutions, 21 community colleges, and 90 other higher education institutions, totaling 182 institutions University Council Association of Thailand (2018).

. From the situation, the number of students studying in higher education institutions has decreased compared to the number of students that higher education institutions can accommodate up to 136,030 people, but 81,232 people have been selected and are eligible to enter. continuing education 70,689 people, compared to 121,654 people in the 2019 academic year, 73,675 people who passed the selection process, and 51,183 people eligible to study,

from the comparison of the 2017 academic year with the 2019 academic year There is a decline in all segments of students entering higher education institutions. As for the academic year 2018, there is no information because it is the first year that the middle selection system is applied to study in higher education institutions (TCAS). Due to this situation, the competition for student admissions is more intense, including many universities in the country. Both public and private universities Including the form of online teaching as a new alternative for students. As a result, it affects the number of students enrolled in higher education. This is an important factor in the management of university operations in the future where all universities must adapt themselves to be quality universities and raise teaching and learning standards. By emphasizing being a life-long university, that is, it is an education management for people of all ages. Able to come and learn at the university throughout their lives Lao (2018), including being accepted and entering international standards, as well as meeting local needs. community satisfaction response and parents who will send their children to study in higher education institutions in the future from such importance The researcher therefore has an idea to study A study of factors affecting the decision to study in higher education of ordinary upper secondary school students in the Chiang Mai Educational Service Area. To be able to know the opinions of studying in higher education and reasons for choosing to study in higher education of high school students. It will lead to a proactive strategy in planning public relations to match the student admissions goal, creating a curriculum that is suitable for the needs of parents and students in the future of universities in Chiang Mai Province.

### **Objective**

1. To study the factors affecting the decision to study in higher education of general upper secondary school students in the Chiang Mai Educational Service Area.
2. To study problems and suggestions the factors affecting the decision to study in higher education of ordinary upper secondary school students in Chiang Mai Educational Service Area.

### **Methodology**

This research is a survey research with the following methods:

#### **1. Population and sample**

1.1 The population used in this study was high school students. General line in Educational Area, Chiang Mai Province, academic year 2020, amounting to 29,108 people Office of Secondary Educational Service Area 34, Private Education Promotion Group, Chiang Mai Provincial Education Office (2018).

1.2 The sample group used in the research was high school students. number of 399 people in the Chiang Mai Educational Area with a confidence level of 95%, a margin of error of 5%, which was obtained from the sample size determination using Yamane's formula, random stratification. This was obtained from determining the sample size using Yamane's formula, Kitpridaborisut (1997).

Sampling method used stratified random sampling. By random sampling proportional to the size of the population.

**Table 1** Showing the stratified random sampling method

Grade level	People	Sample group
Secondary 4	9,845	135
Secondary 5	9,756	134
Secondary 6	9,507	130
<b>total</b>	<b>29,108</b>	<b>399</b>

Year 2020 information

## 2. Creation of data collection tools

2.1 Study concepts and theories related to the study and data collection. to create a questionnaire.

2.2 Create a questionnaire.

2.3 Prepare a draft questionnaire to submit to experts. To verify the accuracy and let 3 experts check the structural integrity.

2.4 Modify the questionnaire according to the recommendation of experts.

2.5 Take the revised questionnaire and try out with 30 students in Chiang Mai who are not a sample. Find confidence in the questionnaire using coefficients Alpha Akronbach Gets the confidence value of the questionnaire at 0.93.

2.6 Prepare a complete questionnaire to be used as a further data collection tool.

Presentation Item-Objective Congruence Index As the following details.

**Table 2** Summary of results Item-Objective Congruence Index

Questionnaire	Results of the evaluator's consideration	Interpret results
Personal information of respondents Questionnaire Part 1 Items 1-9	Level 1 for all items	Can be used. All items are not eliminated.
factors affecting secondary school students' decision to enter higher education At the end of the general line in the Chiang Mai Educational Service Area. Questionnaire Part 2		
Personal factors in deciding to study in a higher education Questionnaire Part 2.1 Items 1-14	At the level of 0.67-1	Can be used. All items are not eliminated.
Personal factors in deciding to study in a higher education Questionnaire Part 2.1 Items 15	At the level of 0.33	Cut off
The internal factors of higher education institutions affecting the decision to study in higher education Questionnaire Part 2.2 Items 1-14	At the level of 0.67-1	Can be used. All items are not eliminated.
Social, economic and competitive factors That effect the decision to study higher education Questionnaire Part 2.3 Items 1-6	At the level of 0.67-1	Can be used. All items are not eliminated.

### 3. Data collection

Data collection is divided into accidental sampling, and primary data from the student questionnaire. The questionnaire was divided into 3 parts consisting of.

#### Primary data

3.1 Questions in the questionnaire Gender, age, class, school affiliation cumulative grade point average Student's domicile Parent's occupation family income student know the news of admissions.

3.2 Questions in the questionnaire The level of factors affecting the decision to study in higher education of general upper secondary school students in the area of Chiang Mai Educational Service Area

3.3 Questions in the questionnaire that are Recommendations for making the decision to study in higher education of ordinary upper secondary school students in the area of the Chiang Mai Educational Service Area

#### Secondary data

Collecting additional information from published documents, the Internet, and previous research on factors affecting the decision to study in higher education of high school students.

### 4. Methods of data processing and data analysis

Data processing and data analysis were used in this study. The data were analyzed using descriptive statistics consisting of statistical methods of percentage, mean and standard deviation. For measuring the level of opinions of students about factors affecting their decision to study in higher education of ordinary upper secondary school students in the Chiang Mai Educational Service Area. Each sample will give each question a score of 1-5 points and have an average total score in each aspect of 1.00-5.00 points, Then the total average score was used to assess the level of each factor in the sample group. The criteria for assessing the level of expectations and needs It was modified from the classification of Likert's Scale Srisaard (2004) Scoring levels are divided as follows, Most, Most, Moderate, Little, Least, and Binary Logistic Regression Analysis by Tested at the significance level of 0.05 to find factors that affect the decision to pursue higher education.

## Results

The research results were summarized as follows:

1. Factors affecting the decision to study in higher education of general upper secondary school students in the Chiang Mai Educational Service Area.

1.1 Table 1 shows Personal factors in deciding to study in a higher education institution of general upper secondary school students in the area of the Chiang Mai Educational Service Area.

**Table 3** Personal factors in deciding to study in a higher education

Item Statements	mean	S.D.	Interpretation
1. As follows: decision to study on their own was at a high level	4.38	0.88	Good
2. Decision to continue studying because after graduation, finding a job was at a high level	4.30	0.74	Good
3. Personal factors in deciding to study in a higher education The overview of the research	3.94	0.99	Good

Personal factors in deciding to study in a higher education. The overview of the research was at a high level mean score of 3.94, as follows: decision to study on their own was at a high level mean score of 4.38, followed by a decision to continue studying because after graduation, finding a job was at a high level mean score of 4.30.

1.2 Table 2 shows the internal factors of higher education institutions affecting the decision to study in higher education of ordinary upper secondary school students in the area of the Chiang Mai.

**Table 4** The internal factors of higher education institutions affecting the decision to study in higher education

Item Statements	mean	S.D.	Interpretation
1. Fully modernized teaching and learning equipment	4.33	0.73	Good
2. Universities with spacious buildings that could accommodate a large number of students	4.28	0.74	Good
3. The internal factors of higher education institutions affecting the decision to study in higher education Educational Service Area the overview of the research	3.96	0.65	Good

The internal factors of higher education institutions affecting the decision to study in higher education educational service area. The overview of the research were at a high level mean score of 3.96, as follows: fully modernized teaching and learning equipment was at a high level mean score of 4.33, followed by universities with spacious buildings that could accommodate a large number of students mean score of 4.28.

1.3 Table 3 shows social, economic and competitive factors that effect the decision to study higher education of ordinary high school students in the area of the Chiang Mai Educational Service Area.

**Table 5** Social, economic and competitive factors That effect the decision to study higher education

Item Statements	mean	S.D.	Interpretation
1. When you graduate, you will have the opportunity to get a job and earn a high income	4.37	0.70	Good
2. followed by graduation, will be able to adjust their academic standing	3.75	0.99	Good
3. Social, economic and competitive factors That effect the decision to study higher education The overview of the research	3.77	1.07	Good

Social, economic and competitive factors that effect the decision to study higher education. The overview of the research the overall research is at a high level mean score of 3.77. When you graduate, you will have the opportunity to get a job and earn a high income high level mean score of 4.37, followed by graduation, will be able to adjust their academic standing at a high level mean score of 3.75.

2. Problems affecting the decision to study in higher education of ordinary upper secondary school students in the Chiang Mai Educational Service Area.

2.1 Problems with personal factors affecting the decision to study at the higher education level of ordinary upper secondary school students in the area of the Chiang Mai Educational Service Area as follows: ignorance about their preferences, aptitudes, or potentials, confusion in choosing. If you know the need knowing your abilities, choosing an institution and a field that you like should be easy.

2.2 Problems with factors in terms of higher education institutions affecting the decision to study at the higher education level of general upper secondary school students in the area of the Chiang Mai Educational Service Area as follows: The university will be accepted from teaching and learning. Courses of higher education institutions problem of higher education institutions is that some programs and some faculties are not accepted by students, so few students come to study. Therefore, it is an important part of deciding to choose to continue studying because it will have an effect in the future. The quality of teaching and learning depends on the quality of instructors as an important part that will be reflected to society. And it helps to create an important image for those who will continue to study to recognize and decide to continue studying.

2.3 Social, economic and competitive problems affecting the decision to study at the higher education level of ordinary upper secondary school students in the area of Chiang Mai Educational Service Area are as follows: This is more specific to the decision to have your child attend any educational institution. For example, a higher education institution that produces teachers with a long reputation will be accepted by parents of students who wish to pursue this profession.

3. Recommendations towards the decision to study in higher education of ordinary upper secondary school students in the Chiang Mai Educational Service Area on the decision to study in higher education of ordinary upper secondary school students in Chiang Mai Educational Area Areas as follows.

3.1 Recommendations on the curriculum should be updated to suit the current situation and support the labor market. And should create a curriculum with the private sector to be accepted or should have a long-term internship or increase the internship period.

3.2 Recommendations on student loans. The credit limit should be increased according to the current economic situation and the selection of those who will receive scholarships. It should be those who are truly poor and use the borrowed money to benefit their studies.

3.3 Recommendations on the quality of university teaching and learning should be developed to be up-to-date. To meet the needs of learners effectively.

## Discussions

The results of the study of factors affecting the decision to study in higher education of general upper secondary school students in Chiang Mai Educational Service Area discussions of the study results can be divided into 4 parts, consisting of personal factors factors within the university factors Social, economic, competitive, and problematic factors affecting decision-making are as follows:

Personal factors that decide to study in higher education most of them expressed their opinion that deciding to study on their own. Which is important at a high level followed by the decision to continue studying by deciding to continue studying because after graduation, they can find a job. Others decide to continue studying because they think they can study. Deciding to study further because the university has cheap student dormitories available. The decision to study further because the curriculum meets the needs. Decisions to continue education by a guidance counselor. The decision to continue studying because the university offers student loan services. Deciding to continue studying because university is close to home the decision to study further by the teacher's recommendation. The decision to continue education is guided by parents. Deciding to continue studying because it is a reputable university. Deciding to study further because of a trending field of study. Decision to continue education based on peers. The decision to study further is recommended by seniors. Which is consistent with the concept of Sangkhao (1997).

Opinions of tourists on factors affecting their decision to choose to travel in Pai District Mae Hong Son Province It was found that selecting several available alternatives based on the single best option could meet the goal or desire of the selector.

Factors in the university that decided to study at the higher education level mostly expressed that the university has modern teaching and learning media and equipment. Which is important at a high level secondly, the university has spacious facilities that can accommodate a of many students. The other is that the university offers a wide range of undergraduate programs to choose from. The university has an ideal location, not too far away, so it's easy to come and study. The university has various laboratories that contribute to quality teaching, such as a computer room. Science laboratories, libraries, university teachers have knowledge and ability to transfer knowledge. Courses offered at the bachelor's degree are popular and in demand in the labor market, making it easy for graduates to find work. The university offers a beautiful environment for teaching and learning. The university actively disseminates or publicizes admissions. The university provides employment for students to earn extra income while studying and the university provides guidance. According to schools or events such as higher education market. The university provides scholarships regularly. Students receive news from the university regularly. The university's alumni have a reputation that is accepted by society. This is in line with the concept of Saikham (2017). Factors in deciding to choose to study in higher education of high school students in the lower northern

region found that regarding the guidance/recommendation media factor, it was found that the guidance for continuing education in the school of that institute had the greatest effect. Factors on the quality and image of institutions found that the results of educational quality assurance. Or ranking results (University ranking) that are published through various media are the most effective. The environmental factor of the institute found that the availability and modernity of teaching and learning equipment has the greatest effect. Factors of various facilities found that the library had the greatest effect and was in line with the concept of Wongsumit (2004). Principle of public relations. Said that the strategy that can easily create an image of the organization comes from the word image (Image), that is, I: Institution is to create an image by the institution, including the building, its surroundings, internally and externally M: Management is the management by the management to set the image to be satisfactory to the public A: Action is the performance of the production process to make the product available, work efficiency or provide services. G: Goodness is to create an image by doing good deeds such as socially responsible actions. E: Employee is to create an image by personnel. Because every personnel in the agency is like a representative of the agency that will create an impression or hatred for the contact with the organization. Consistent with Thiangoen et al. (2022) findings provided useful information about factors behind the decision of the upper secondary school students to choose an institution for their undergraduate study. The results could be utilized for a proper strategic planning in order to encourage students to accept an offer of place from the University.

Most of the social, economic and competitive factors that made the decision to study at the higher education level expressed that upon graduation. There will be an opportunity to get a job and earn money. Which is important at a high level secondly, after graduating, they will be able to adjust their academic standing. When you graduate, you will be accepted by society. Tuition fees play a part in deciding whether to study at a higher education institution. When graduating, it is considered to raise the level of social status. Higher education institutions have courses that are professional. Which, if graduated, can receive government service such as civil servants, soldiers, police, teachers, which is in line with the concept of Jam (1996). Theory of Motivation. It states that behavior may satisfy multiple needs, and more than one at the same time. Such as intending to work to raise salary and gain fame and prestige praise and acceptance from others.

Problems affecting the decision to study in higher education of general high school students in the Chiang Mai Educational Service Area.

Problems with personal factors in deciding to study in higher education consisted of: Ignorance of one's preferences or existing aptitude and potential. Therefore, there is confusion in choosing a field of study, choosing a faculty, and the higher education institution that one wishes to study. Which provides the best information to guide students in choosing a higher education institution. choice of field of study Especially for students whose GPA is not very high. The problem facing is the level of importance of students that the guidance counselors give priority to students who are good and have high GPAs that will be able to enter a prestigious university and build a reputation for the school. May neglect students whose GPA is not high, causing these students to receive unclear information from the guidance counselor. For the decision to continue studying. The problem of concern about learning cost of education University reputation future employment. This is consistent with the idea of Khirachit (2014) on factors affecting the decision to study in higher education of high school students. It was found that personal ability factor, GPA had the greatest effect on university choice. Basic knowledge and professional and academic aptitudes affect the choice of university at a high level and in line with Wonganutaroj (1992) motivation in person management Psychology.

It was found that the needs of individuals were hierarchical in order of importance from basic needs. to complex requirements.

Problems with factors on the part of higher education institutions in deciding to choose to study in higher education, consisting of: Some courses cannot meet the needs of the students and the labor market. The quality of teaching and learning depends on the quality of the instructors, which is an important part that will be reflected in the society. And it helps to create an important image for those who will continue to study to recognize and decide to continue studying. Public relations, communication guidance for outsiders to know Be aware of teaching and learning activities or the quality of teachers, courses, alumni will make the image of the university clear. And is an important choice for those who will continue to study, so the problem is the lack of access to university information. Lack of public relations thoroughly and regularly. This is in line with the idea of Khirachit (2014). Factors affecting the decision to study in higher education of upper secondary school students found that the channel factor in receiving information found that the information of the educational institutes that the students received from attending the counseling fair had the greatest effect on the students' choice of universities. It is a way to search for information about faculties, universities or subjects offered at high level. Social, economic, and competitive problems in deciding to study in higher education include: 1) The spread of Coronavirus disease 2019 affecting the economy adaptation society, including education. Effects caused by Coronavirus 2019 on the economy resulting in insufficient income for living due to the damaged economic system. Due to various measures to prevent the spread of the Coronavirus 2019, the economy has been greatly damaged. 2) Problems from social values, perceptions and reputations, past images of higher education institutions are components in decision making to send their children to study in educational institutions. Which is more specific, for example, a higher education institution that produces long-established teachers will be accepted by parents of students who wish to pursue this profession. This is consistent with the idea of Khirachit (2014). The university quality factor found that a university's reputation, faculty, current students, and alumni in fluence a student's choice of university at a high level.

### **Conclusion and suggestions**

In conclusion, factors that are important to the decision to study in a higher education institution include personal factors, internal factors for higher education institutions social factors economy, and competition. The internal factors of higher education institutions are the most important factors, with the reason being most expressed their opinion that the university has complete and modern teaching media and equipment. Which is important at a high level as the main factor affecting the decision to study in a higher education institution. Factor influencing the decision to study in higher education institutions, ranked 2<sup>nd</sup> in personal factors by deciding to study at the higher education level by himself with reasons from aptitude, ability, and studying various information for decision making and the third rank social factor economy and competition with reasons such as job opportunities and high income in the future.

In doing research in the future, there should be research with high school students in the region such as the northern region to know the opinions of students who have not yet decided to choose a higher education institution. Moreover, research should be done in depth in different areas by interviewing a sample of high school students from the target school In the next study. Factors related to decision making should be analyzed by analyzing basic statistics and analyzing inferential statistics. Such as independent sample t-Test analysis and

one way anova and multiple regression analysis. There should be would be used the proportion of students who submit into and fail in the higher education.

### New knowledge and the effects on society and communities

The decision-making process for tertiary education is important for high school students. It is the selection and planning of students in the future to study in the field that they have knowledge, understanding, aptitude, and hope for the future. After graduation, they will work directly in the field they have studied. The said process is the concept and direction in choosing to study higher education institutions with many elements, which will affect the future of students or selected because if choosing to study the subjects that are not skilled and lacking. Comprehension will affect the efficiency of study and after graduation may affect work that does not correspond to the field of study, affecting the needs of the labor market. Including if unable to get a job, it will affect the family economy and the overall community economy.

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## Community and Social Development Journal : CSDJ

Formerly known as Rajabhat Chiang Mai Research Journal

is a Journal to support academic work for Community and Social Development

Aim and scope to publish articles that are beneficial to society or locality in Social Sciences & Humanities, with 5 sub-subject. 1) General Social Sciences 2) Development 3) Education 4) Political Science and International Relations 5) General Business, Management and Accounting, which can be shown that it is able to solve problems or improve society, community and locality. Moreover, it clearly brings benefits, or changing in awareness and perception of problems and solutions of community and locality, with research elements that indicate the spatial change condition of community and society. It is the participatory research and accepted by society. It is the research that uses knowledge or proficiency, which transforming in the better way, or it can be anticipated. Evaluate changing results and propose guidelines for social development, community and local to be sustainable.

### Journal format

1. Issued 3 editions per year:

1<sup>st</sup> Issued January – April,

2<sup>nd</sup> Issued May - August

3<sup>rd</sup> Issued September – December

2. Published articles must be considered by 3 experts per subject, who are outsiders from various institutions. Whereas, the experts do not know the names of the authors, and the authors do not know the names of the experts (Double-blind Peer Review)

3. Community and Social Development Journal : CSDJ

From Vol 25 No 1 January - April 2024 onwards.

- Electronic format (Online) published since 2004 (Year 25, 1<sup>st</sup> Issue), ISSN 3027-7493 (Online)

- Publication format (Print) published since 2004 (Year 25, 1<sup>st</sup> Issue) ISSN 3027-7485 (Print)

4. Formerly known as Chiang Mai Rajabhat Research Journal : RCMRJ has created 2 forms:

- Electronic format (Online) published since 2018 (Year 19, 1<sup>st</sup> Issue), ISSN 2651-2068 (Online)

- Publication format (Print) published the first issue year 2000 to 2019 ISSN 1513-8410 (Print)

### Journal template / research articles

The editorial team has established regulations of manuscript submission for the authors to use as the guidelines of submitting manuscripts for publication. "Community and Social Development Journal : CSDJ Formerly known as Chiang Mai Rajabhat Research Journal". The editors can review the manuscript before publication for the quality of the journal, and can be used as references. By the way, journal is the support academic work for society by setting aim and scope. To publish articles that are beneficial to society or localities in Social Sciences & Humanities with 5 sub-subject. 1) General Social Sciences 2) Development 3) Education 4) Political Science and International Relations 5) General Business, Management and Accounting, which can be shown that it is able to solve problems or improve society, community and locality. Moreover, it clearly brings benefits, or changing in awareness and perception of problems and solutions of community.

**Preparation for the original article, the details are as follows**

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**First name Last name** (Times New Roman, 14 pt, **Bold**)

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**(E-mail: e-mail)** (Times New Roman, 12 pt, **Bold**)

*(Received: xxx, Revised: xxx, Accepted: xxx)* (Times New Roman, 10 pt, *Italic*)

**Abstract Text** (Times New Roman, 12 pt, Tab 0.8 cm)

It is a summary of the main point, type of research, research objective, research methodology. Summarize the research results in a concise, clear and a new knowledge including things that will effect society and local community. Identify important statistics. Use concise language in complete sentences and prose, not divided into sections. The abstract in both Thai and English should not exceed 1/2 page of A4 size paper, and specify

**Keywords:** Keyword, Keyword, Keyword, Keyword, Keyword (Times New Roman, 12 pt; 5-7 keywords/phrases)

**Introduction:** Text (Times New Roman, 12 pt, Tab 0.8 cm)

Write the background and importance of the problem. Theoretical concepts used, objectives and advantages.

**Methodology:** Text (Times New Roman, 12 pt, Tab 0.8 cm)

Describe the instruments and equipment used in the experiment, and describe the experimental study methods. Population and sample, research method, research instruments, data collection and data analysis.

**Results:** Text (Times New Roman, 12 pt, Tab 0.8 cm)

Writing a study proposal should be concise and show research results clearly.

**Discussion:** Text (Times New Roman, 12 pt, Tab 0.8 cm)

Writing discussions of study results is to clarify the research results whether it corrects according to the objectives, research hypothesis. It is consistent or inconsistent with previous research of others, how and for what reason. Compare or interpret to emphasize the importance of the research and summarize as easy as possible.

**Conclusion and suggestions:** Text (Times New Roman, 12 pt, Tab 0.8 cm)

Write a summary of the main points of the research whether it corrects to the objective or not, by focusing on the problems or argument in the main points including useful suggestions.

**New knowledge and the effects on society and communities:** Text (Times New Roman, 12 pt, Tab 0.8 cm)

Write a summary of the new knowledge that happened, and the effects on the society, local and communities.

**Acknowledgement:** Text (Times New Roman, 12 pt, Tab 0.8 cm)

May or may not be there. It was an expressing gratitude to those who contributed to the research, but not the participants in the research.

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There should be at least 15 items. (To cite an article from a journal, include a link to that article at the end.)

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### Format for writing bibliography / reference lists

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Surname. (Year of publication). Title of book. (Edition). Place: Publisher

Rangkhakunnuwat, P. (2013). *Time Series Analysis for Economics and Business*. (4<sup>th</sup>ed.). Bangkok: Chulalongkorn University Printing House.

Courtney, T. K. (1965). *Physical Fitness and Dynamic Health*. New York: McGraw-Hill Inc.

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Sunretphol, N. (2004). *A Development of Educational Indicators for Lifelong Learning*. (Ph.D., Srinakharinwirot University).

Magyar, C. E. (2014). *The discourse of tourism and national heritage: A contrastive study from a cultural perspective*. (Doctorial's thesis, University of Madrid).

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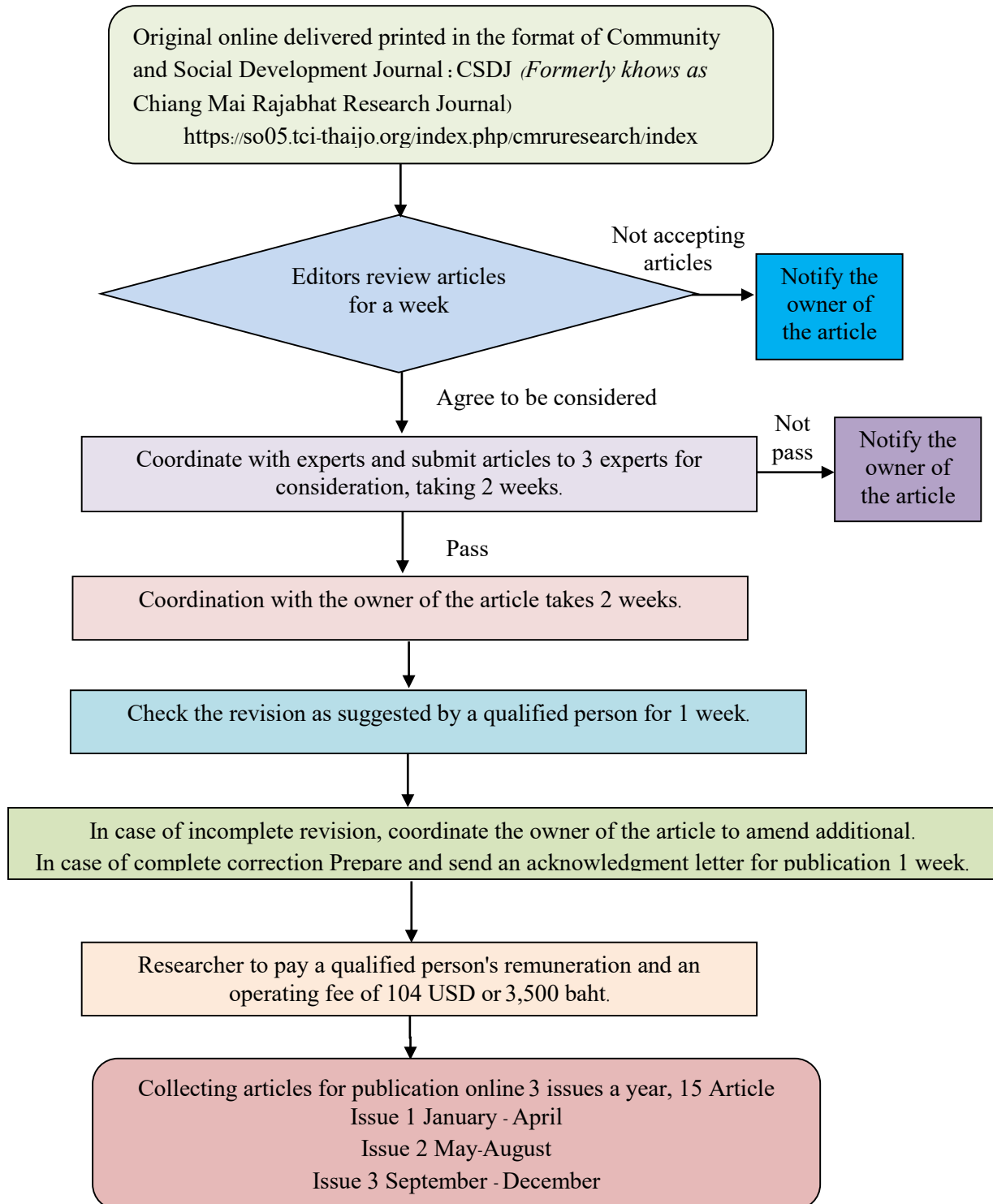
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**Process for submitting articles for publication in Community and Social Development Journal : CSDJ (Formerly known as Chiang Mai Rajabhat Research Journal)**



# COMMUNITY AND SOCIAL DEVELOPMENT JOURNAL



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