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Developing a STEM Curriculum Through the Community History of Ban Prohm Thin Tai to Enhance the Ability to be a Tour Guide and the Local Consciousness of Elementary School Students

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Abstract

The objective of this research is 1) To study in-depth knowledge about the historical context of the Ban Prohm Thin Tai community, 2) To design an educational management approach a STEM Curriculum through the community history of Ban Prohm Thin Tai to enhance the ability to be a tour guide and the local consciousness of Elementary School students, and 3) To study the outcomes of using the community-based historical education approach through the STEM Curriculum through the community history of Ban Prohm Thin Tai to enhance the ability to be a tour guide and the local consciousness of Elementary School students. This research is Action Research. The sample in the study consists of (1) a group of informants regarding the community history of Ban Phrom Thin Tai, comprising 12 people, (2) A group of experts evaluating the curriculum management of learning includes 5 individuals including science teachers, educators, and curriculum experts, and (3) The experimental group using the learning management approach comprises 23 elementary school students selected through purposive sampling, totaling 40 participants. 1) A deep study of the historical knowledge related to the community of Ban Prohm Thin Tai revealed that this area has archaeological sites that have been inhabited since prehistoric times. Over time, it developed into an urban community during historical times, characterized by the construction of moats and earthen embankments influenced by Indian culture. Furthermore, archaeological excavations have unearthed prehistoric human skeletons and various artifacts such as pottery fragments, rings, beads, and axes. These discoveries indicate that the area around Ban Prohm Thin Tai has a long history of civilization, making it worthy of preservation as a heritage for future generations. 2) Designing guidelines for a STEM Curriculum through the community history of Ban Prohm Thin Tai to enhance the ability to be a tour guide and the local consciousness of Elementary School students found that, the researchers have developed a comprehensive approach to a STEM Curriculum through the community history of Ban Prohm Thin Tai to enhance the ability to be a tour guide and the local consciousness of Elementary School students. This approach is termed the STEM+H model, which includes (1) Science, integrated history (2) Technology, integrated history (3) Engineering, integrated history (4) mathematics, and integrated history. The overall suitability of the model was found to be highly effective based on the evaluation results. 3) A study of the results of using the STEM Curriculum through the community history of Ban Prohm Thin Tai to enhance the ability to be a tour guide and the local consciousness of Elementary School students found that the approach of the TEM Curriculum through the community history of Ban Prohm Thin Tai can enhance the ability to be a tour guide and the local consciousness of Elementary School students.

Keywords: STEM, community history, community local consciousness, elementary school students

1. Introduction

The concept of Sustainable Development Goals (SDGs) and Area Based Education (ABE) aims to establish an inclusive and equitable education system, promoting lifelong learning opportunities for all individuals worldwide. It seeks to access international higher-quality education standards and develop learning skills that integrate into local communities. Emphasizing environmental conditions as critical lessons in interdisciplinary learning across various fields. One of the operational approaches is the aggregation of community experiences derived from analyzing core curricula to design local curricula or learning methods based on societal phenomena. This aims to strengthen national core curricula and involves local and community-based learning experiences, ensuring community involvement in all dimensions. It serves as a guideline for teaching methods that align with the local context and community needs, fostering meaningful learning processes and cultivating desirable citizenship among all learners (United Nations, 2015; Kaewpanya, Mangkhang, & Dibyamandala, 2021; Mangkhang, Yimsawat, & Kaewpanya, 2021). Sustainable development focuses on achieving balance across three dimensions: economic, social, and environmental. Development in each dimension is interconnected and mutually reinforcing. The sustainable development strategies in all three dimensions include (1) Sustainable Economic Development, (2) Sustainable Social Development, and (3) Sustainable Environment Development. (Raktin, Laoha, and Panita, 2018) In applying sustainable development concepts, it is crucial to foster collaboration among all stakeholders involved, driving practices at every stage of operations toward genuine sustainable development goals.

Education is a crucial tool for shaping individuals, societies, and nations. It serves as a primary mechanism for developing quality human capital, enabling people to live harmoniously with others in society amidst the rapid changes of the 21st-century globalized world. Education plays a vital role in enhancing a country's competitiveness and resilience on the global stage under a dynamic economic and social system. Therefore, countries worldwide emphasize and invest in educational development to empower their human resources to keep pace with the evolving economic and social landscapes. Thailand places significant importance on educational management and enhancing the capabilities and competencies of its people, ensuring they possess skills, knowledge, and qualifications that align with market demands and contribute to national development. This commitment is integral to preserving Thailand's identity while adapting to the pressures of globalization. The internal pressures and crises that Thailand faces, for Thai people to have a good quality of life for Thai society to be ethical and moral, and for the country to be able to move beyond the middle-income trap towards developed nations, must be able to adapt to changes in the world, both current and future, through significant transformations that impact the education system, economy, and society of Thailand (Office of the Education Council, 2018). Moreover, under the National 20-Year Strategy (2018-2037), importance is still placed on harnessing the power of various sectors including the private sector, civil society, and local communities to drive forward. This is achieved by supporting the collective efforts of the people in collective thinking and action, decentralizing power and responsibility to local governance mechanisms, strengthening community resilience in self-management, and preparing Thai people across dimensions of health, economy, society, and environment to become a high-quality population capable of self-reliance and benefiting their families, communities, and society in the long term. By guaranteeing equitable access to quality services and welfare universally, the state aims to ensure fairness across all sectors (National Economic and Social Development Council, 2018). Education management must therefore focus on integrating collaboration from all sectors, harnessing local capabilities to participate in managing both basic and informal education levels. This is aimed at developing the quality of citizens in Thai society who must sustain themselves amidst the changing currents of the global society, under an education management strategy that aims to create equity and equality in society.

The Basic Education Core Curriculum Framework, Buddhist Era 2551 (2008), serves as a guideline for localities and educational institutions to develop educational curricula and ensure quality learning experiences that equip individuals with essential knowledge and skills for life in a rapidly changing society. It emphasizes continuous self-development through lifelong learning and adheres to the principle of decentralization, enabling communities to actively participate in educational management that aligns with local conditions and needs (Ministry of Education, 2008). Setting local curriculum frameworks is crucial as it guides school administrators, teachers, and education personnel in schools to align their operations in curriculum development, teaching management, and quality assurance according to the local community's conditions and needs. This involves setting learning standards as goals and criteria to develop local learning content. It also enables the assessment of student quality at the local level, aiming to provide direction in teaching practices to develop students with fundamental knowledge and skills necessary locally and globally in the current era. The focus on local learning content must emphasize the learner as central, based on the belief that everyone can learn and develop their full potential. Students should have the opportunity to learn about the stories of their communities, fostering

awareness, appreciation, and attachment to their locality. This approach encourages pride in cultural heritage, roots, and contributions to the community. Moreover, it equips students to solve problems, develop their lives, careers, families, and society appropriately (Siriwon Sripha, 1996). The educational guidelines of the core curriculum framework help to expand the scope of "perception" in educational management development, which better aligns with educational trends in society. This enables schools to have more options in designing curricula that are efficient and suitable for their specific areas.

History is fundamentally important in fostering values and understanding the significance of the past through analysis, interpretation, critique, and judgment based on cause-and-effect relationships. It draws upon diverse evidence to cultivate students into critical thinkers who question, seek answers, and learn lessons from the past and origins within society. History acts as a mirror that reflects human society at various points in time within a specific region, tracing continuous developments up to the present. It teaches self-awareness, including the origins of local communities and nations, instilling a sense of national identity, love, and pride in the ancestors who founded the homeland. The purpose of teaching history is to raise awareness of its importance and its various contents, aiming to develop skills, competencies, and desirable characteristics in students. Activities for learning history can be organized both within the classroom and through extracurricular activities. Understanding content, principles, and theories in the classroom becomes more straightforward and clearer when students directly experience and perceive what they are learning or studying. Extracurricular activities such as field trips to historical sites and learning outside the classroom are forms of learning that create direct experiences and meaningful learning for students (Thida Saraya, 1996). The past is the cause of the present, enabling us to fully understand the present. Simultaneously, the present is the cause of the future. If we can make the present as good as possible, history is created by human actions, and those actions have far-reaching consequences for society. Therefore, humans are called to be history makers and humans

Developing a local curriculum involves a process where national-level curriculum frameworks are studied and analyzed in terms of content and objectives. This process aims to expand, enhance, and adapt the content by incorporating the specific goals and content of the national curriculum to better align with the context of each educational region or locality. The local curriculum can be implemented both inside and outside the classroom to develop students' knowledge, abilities, attitudes, and quality of life. By utilizing local resources, students can learn based on the realities of their own lives, economy, society, and culture, aiming to prepare them for active participation in solving various community issues (Department of Curriculum and Instruction, 1997). The local curriculum should be developed based on the problems and needs of the students, aligned with the economic and social context of the specific locality. It should respond to the unique identities of each community, viewing the community as the core. The curriculum should provide learning experiences and content tailored to students in the local context, drawing from local wisdom. This enables students to learn and seek knowledge that meets the realities of their own lives, society, and culture. They can then adapt themselves to cope with changes in the globalized era and apply their knowledge to develop themselves, their families, communities, and society (Samlee Thongthiu, 2001).

Teaching local history is aimed at fostering students' love, pride, and appreciation for their local cultural heritage. To ensure quality learning in history, the initial step is to cultivate a genuine interest in learning history among students. They should be encouraged to ask probing questions at a higher level to derive meaningful answers. This process involves critical analysis and interpretation skills, which are essential in deepening educational insights. In essence, historical methodologies can be applied to teaching and learning practices. Moreover, history education should not adhere strictly to core content but should integrate interdisciplinary learning management. For example, scientific principles can be incorporated or considered alongside historical studies. The main objective of history education is to enable students to learn historical methodologies to develop skills in analysis, synthesis, and evaluation based on historical evidence using cause-and-effect principles. To align with educational contexts in the 21st century, it is necessary to integrate technology to design or produce media that are more engaging and compelling (Tisnna, Khemmamarn, 2012). Teaching history in the present should encompass diverse processes to sustain student interest and engagement continuously. These learning methodologies include various formats such as active learning activities that emphasize practical application and prioritize student-centered approaches. Another effective approach is blended learning, which combines different methods to meet educational needs. Furthermore, history is a subject that does not solely emphasize memorization. Therefore, skills such as inquiry and collaborative work are crucial to help students learn history effectively. This approach is referred to as collaborative learning, where students work together to achieve optimal learning outcomes. The learning methods can help alleviate the dull classroom atmosphere that leads to students' lack of understanding and appreciation of learning's significance (Chalerm Nitikhetpricha, 2016). This

approach aims to foster civic participation and become a significant driving force in local self-development.

STEM education originated from the issue of the United States' low scores on the PISA tests compared to many countries, affecting proficiency in science, technology, and engineering. The US government thus developed STEM policies with the hope of improving PISA scores and promoting essential skills necessary for learners in the 21st century. STEM education is an integration of learning in science, mathematics, technology, and engineering processes, aimed at applying knowledge to solve real-life problems and developing processes or products beneficial for future life and career. All four subjects are critically important for enhancing economic competitiveness, improving quality of life, and ensuring national security. They collectively promote the knowledge and skills necessary for individuals to sustain a high quality of life in the 21st century (Phonthip Siriphatrachai, 2013). STEM education integrates scientific literacy, technology literacy, mathematics literacy, and engineering literacy. Explain the meaning of each part as follows. 1) Science Literacy refers to knowledge and understanding of the content in science subjects (physics, chemistry, biology, earth science, astronomy), the ability to connect relationships between scientific content, and having practical scientific skills. 2) Technology Literacy refers to understanding and ability to use, manage, and access technology. 3) Mathematics Literacy refers to the ability to analyze, reason, and apply mathematical concepts to create explanations and predict phenomena under various contexts. It also includes the role of mathematics in decision-making and judgment. and 4) Engineering Literacy refers to understanding the development or acquisition of technology through engineering design and knowledge of science and mathematics (Kemwadee Pongsathorn, 2014).

The concept of community-oriented mindfulness emphasizes understanding reality and the meaning of life, enabling individuals to live in harmony with reality. It focuses on promoting peace education and ethics, consisting of 1) Integrating arts, culture, and economics, 2) Strengthening individual empowerment, 3) Being adaptable, and capable of change to address challenges, 4) Developing local wisdom for competitiveness (Chatchawal Butthong, Jarunee Tipmanee, and Charin Mangkhang, 2019). Community psychologists define "community" as a network of relationships that mutually support individuals in things they can rely on. They explain that a lack of or insufficient Psychological Sense of Community can disrupt the mechanisms through which people navigate life in society. The definition of "community" in sociology and psychology is divided into two approaches including locality, and relational group. In the context of social psychology and sociology, the concept of community consciousness and participation in urban social contexts aligns with Sarason's theory (1974). He describes the characteristics of a community as needing to share a common identity. When considering the components of psychological community consciousness, it includes membership, influence, integration and fulfillment of needs, and shared emotional connections. This psychological model emphasizes the awareness individuals have towards their community. The relationship between individuals' perception of the community and the community's perception towards themselves is crucial in fostering community consciousness. The experiences of community boards with the community and the roles of these boards are pivotal in enhancing a sense of commitment to the community. This developed framework can be used to reinforce psychological community consciousness among various community boards (Colombo et al., 2001). Having a shared consciousness with the community is considered a critical factor in driving sustainable development and enhancing citizen empowerment in shaping their society.

Therefore, the research team is interested in developing the STEM Curriculum through the community to enhance the ability to be a tour guide and the local consciousness of Elementary School students. The study will explore knowledge from the history of Ban Prohm Thin Tai. Subsequently, it will design and develop a holistic educational approach, the ability to be a tour guide, and the local consciousness of Elementary School students and apply this knowledge for the sustainable benefit of their community.

2. Method

Step 1 The research model

This research is Action Research (AR) involving the collection, analysis of data obtained from surveys, and group discussion questions. The study presents findings in a Descriptive Analysis, using both quantitative and qualitative data to synthesize.

Step 2 Populations and samples

The study population consists of three main target groups (1) members of the community providing information about the history of the Ban Phrom Thin Tai community including Local philosophers, (2) experts evaluating educational management approaches, including science teachers and educational specialists, and (3) experimental group comprising elementary school students selected through purposive sampling, totaling 40 participants in the research sample including of

1) The group providing information about the history of Ban Phrom Thin Tai community consists of 12 local philosophers from Ban Phrom Thin Tai.

2) The expert group assessing educational management approaches includes 5 individuals of science professors, science teachers, and educational specialists.

3) The experimental group for learning management consists of 23 elementary school students.

Step 3 Tools used in research

The tools used to collect data consisted of

1) Unstructured interview of the history of Ban Phrom Thin Tai community.

2) Evaluation form for the suitability of STEM Curriculum through the community history of Ban Prohm Thin Tai to enhance the ability to be a tour guide and the local consciousness of Elementary School students

3) Evaluation of the outcomes of using the STEM Curriculum through the community history of Ban Prohm Thin Tai to enhance the ability to be a tour guide and the local consciousness of Elementary School students.

Step 4 Data collection

1) The study involves a documentary study, gathering data from documents, books, and field interviews to collect information about the history of the Ban Phrom Thin Tai community. The gathered data will be used for further study.

2) Design and Development is designing and developing an educational approach through the history of the Ban Phrom Thin Tai community to enhance the ability to be a tour guide and the local consciousness of Elementary School students. It includes evaluating appropriateness with input from educational management specialists. The evaluation results and recommendations will be used to refine the holistic educational approach. The tool used for assessment is an evaluation form for the suitability of the educational approach through community history to enhance the ability to be a tour guide and the local consciousness of Elementary School students.

3) Assessment is the evaluation of students' ability to become a tour guide and the local consciousness of Elementary School students. The tool used for assessment is an evaluation form for the outcomes of using the educational approach through the history of the Ban Phrom Tai Tai community to enhance students' ability to local consciousness of Elementary School students.

Step 5 Data analysis

1) The researchers analyze qualitative data according to objectives using content analysis, derived from document analysis and interviews. This method summarizes issues based on data groups and analyzes the relationships within the data.

2) The researchers analyze quantitative data obtained from assessments using statistical package software to analyze. This involves descriptive statistical analysis, presenting results as a mean and standard deviation to summarize the data statistically.

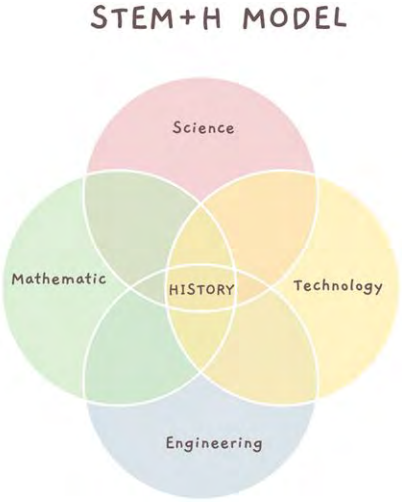
3. Results

For the research at this time, the research team has classified the data obtained from the study and presented the research results according to the determined objectives. The study results can be summarized as follows:

1. Study in-depth knowledge about the historical context of the Ban Prohm Thin Tai community found that, the community history of Ban Phrom Thin Tai includes an archaeological site located in Moo 11, Lum Kao Subdistrict, Khok Samrong District, Lopburi Province. The study of the Ban Phrom Tin Tai archaeological site began in the year 2529 B.E. (1986) when the Department of Fine Arts conducted surveys of ancient cities in Lopburi Province. Several ancient cities were discovered during this survey, including Ban Phrom Thin Tai. The archaeological findings from this site include pottery fragments ranging from plain to sophisticated types (indicating local production), Chinese-style bowls from the Ming Dynasty, Khmer-style ceramic vessels, and inscriptions in both Pali script (11th-12th Buddhist century) and post-Pali script (13th Buddhist century). The ancient city of Ban Phrom Thin Tai was built over the earlier Dvaravati-era city. The layout of Phrom Thin Tai City is in the shape of a quadrilateral with rounded corners, with earthen embankments surrounding the ancient site. A stream called Phan Tong flows through the eastern direction. The area was used for agriculture, including cultivating chili fields and plowing. Presently, remnants include traces of the southern brick wall and some old city moats towards the east. Most of the villagers are of Lao descent, having migrated from northeastern Thailand over a century ago. Temples and churches were later built on top of the ancient ruins, initially destroyed by fire and replaced with zinc-clad wooden structures. In 2543 B.E. (2000), the Department of Fine Arts Unit 1

in Lopburi carried out excavation and reformation of the earth mound, discovering that the ancient site was a monastery from the Ayutthaya period, built over the Dvaravati-era site. Behind the monastery, there were discovered brick alignments and bases of Buddha statues from the Dvaravati era, which are lower in level compared to the later chedis. These structures from the Ayutthaya period also yielded bases for old Semao 5 bases, stone Buddha images, pottery, brown-coated bottles, banana paper, and glazed tiles. Ban Prohm Thin Tai has been a human habitation site since prehistoric times. It later developed into a historical urban community with constructed moats and influenced by Indian culture. Moreover, archaeological excavations have uncovered prehistoric human skeletal remains and various artifacts such as pottery fragments, rings, beads, bracelets, and axes. These findings indicate that the area around Ban Phrommathep Tai is an extensive archaeological site with a long history, worthy of preservation for future generations.

2. Designing a learning management approach of STEM Curriculum through the community history of Ban Prohm Thin Tai to enhance the ability to be a tour guide and the local consciousness of Elementary School students found that, the researcher has developed a STEM+H model for integrating community history of Ban Prohm Thin Tai to enhance the ability to be a tour guide and the local consciousness of Elementary School students. STEM+H model includes 1) Science, integrated history, 2) Technology, integrated history, 3) Engineering, integrated history, and 4) Mathematics, integrated history. The details are as follows (Karnikar Keskhamkwa, Ladda Silanoy, and Angkana Tungkasamit, 2022).



Ficture 1. STEM+H model

Resource: Researcher (2024)

1) Science, integrated history is an educational approach that integrates science with history, combining two important disciplines to enhance students' understanding of narratives and processes. This can be achieved through various methods, such as using scientific events in history. For example, teaching about scientific revolutions in the 16th and 17th centuries, such as the works of Galileo Galilei, Isaac Newton, and Francis Bacon. Integrating science learning with history not only helps students better understand past events but also enables them to see the connections between science and history. It fosters an understanding of how scientific advancements have impacted society and culture throughout different eras.

2) Technology-integrated history is an educational approach that makes history lessons more engaging and effective by incorporating technology. It utilizes technology to enhance students' understanding and participation in the learning process. This can be achieved through various methods such as using digital media and multimedia, documentaries, films, and animations to depict complex or detailed historical events. This approach helps students comprehend historical events more easily. Integrating history learning with technology not only makes learning enjoyable for students but also helps develop crucial technology and research skills important for the future.

3) Engineering-integrated history is an educational approach that combines engineering with history to enhance the understanding and application of engineering knowledge through historical contexts. This method not only makes learning more engaging but also helps learners understand the significance and impact of technological and engineering developments on society in the past. It can be implemented in various ways, such as studying

engineering projects in history, and ancient architecture, teaching about the design and construction of significant engineering structures in the past like the pyramids in Egypt, the Great Wall of China, the Colosseum in Rome, and Notre Dame Cathedral, etc. Integrating engineering with history not only deepens students' technical and historical knowledge but also enhances analytical thinking, problem-solving skills, and the application of knowledge in real-world situations. These are crucial skills valuable for learning in the 21st century.

4) Mathematics-integrated history is an educational approach that enhances students' understanding and interest in both disciplines by exploring the relationships between mathematics and historical events, innovations, and significant figures from the past. This method helps students see the big picture and apply mathematics in diverse contexts. It can be implemented through various approaches such as studying important mathematicians in history, and teaching about the achievements of key mathematicians in the past like Pythagoras, Euclid, Archimedes, and Hypatia, etc. Integrating mathematics with history not only improves students' understanding of mathematics but also helps them see the connections between mathematical knowledge and historical events. It enhances interest and meaningful learning experiences for students.

The researcher then applied the STEM+H model of learning management through the community history of Ban Prohm Thin Tai to enhance the ability to be a tour guide and the local consciousness of Elementary School students, and the results appeared as follows.

Table 1. The results of the assessment of the appropriateness of the STEM+H model for learning management through the community history of Ban Prohm Thin Tai to enhance the ability to be a tour guide and the local consciousness of Elementary School students (n=5)

No.	Assessment list	$\bar{x}$ 错误！未定义书签。	SD	Results
1	Guidelines for learning management that promote scientific perception.	4.80	0.45	Highest
2	Guidelines for learning management that promote awareness of the importance of science learning for the everyday life of students.	4.20	0.45	High
3	Guidelines for learning management to foster pride among children and youth as strong citizens of their local community.	4.40	0.89	High
4	Guidelines for learning management that are suitable for local history content.	4.60	0.89	Highest
5	Guidelines for learning management that provide opportunities for students to learn through real-world practice to be a guide	4.00	0.71	High
6	Guidelines for learning management that facilitate learning activities to foster opportunities for discussion and exchange of ideas to find solutions collaboratively.	4.40	0.89	High
7	Guidelines for learning management that promote students' understanding of local context learning within diverse cultural contexts.	4.00	1.00	High
8	Guidelines for learning management that include using diverse examples of multimedia as learning aids.	4.40	0.89	High
9	Guidelines for learning management that serve as key guidelines for developing science learning management in the next century.	4.60	0.55	Highest
10	Guidelines for enhancing students' scientific literacy.	4.60	0.55	Highest
Total average		**4.42**	**0.73**	**High**

Resource: Researcher (2024)

From Table 1, it is shown that the STEM+H model of learning management through the local history of Ban Prohm Thin Tai community is highly appropriate ($\bar{x}$= 4.42, SD = 0.73). Upon detailed examination of each item, Guidelines for learning management that promote scientific perception ($\bar{x}$= 4.80, SD = 0.45), Guidelines for learning management that are suitable for local history content ($\bar{x}$ = 4.60, SD = 0.89), Guidelines for learning management that serve as key guidelines for developing science learning management in the next century ($\bar{x}$ = 4.60, SD = 0.55), and Guidelines for enhancing students' scientific literacy ($\bar{x}$= 4.60, SD = 0.55), respectively.

3) Studying the outcomes of using the STEM+H model of learning management through the community history of Ban Prohm Thin Tai to enhance the ability to be a tour guide and the local consciousness of Elementary School students found that, after students have completed the STEM+H learning management process through the community history of Ban Prohm Thin Tai, the researcher assessed their ability a tour guide. The assessment results are as follows.

Table 2. The average, standard deviation, and level of students (n=40)

No.	Assessment list	$\bar{x}$	SD	Results
1	The student has a positive attitude towards preserving the local culture.	4.80	0.45	Highest
2	The student collaborates with the community.	4.60	0.55	Highest
3	Students play a role in enabling communities to develop into exemplary models.	4.40	0.89	High
4	The student plays a role in enabling the community to develop into a role model community.	4.80	0.45	Highest
5	The student is aware of the importance of being a tour guide.	4.60	0.89	Highest
6	The student fulfills the role of a tour guide to the best of their ability.	4.80	0.45	Highest
7	The student has skills in multilingual communication.	4.20	1.10	
8	The student can manage their daily lifetime effectively.	4.80	0.45	Highest
9	The student has a good understanding of the local history of their own.	4.60	0.89	Highest
10	The student can adapt to changing situations.	4.40	0.55	High
The average total		**4.60**	**0.67**	**Highest**

Resource: Researcher (2024)

From Table 3, it is shown that the overall appropriateness of educational management approaches to a STEM Curriculum through the community history of Ban Prohm Thin Tai is highly suitable ($\bar{x}$=4.60, SD=0.67). When considering each item individually, 7 key points have been assessed at the highest level including 1) The student has a positive attitude towards preserving the local culture, 2) The student collaborates with the community, 3) The student plays a role in enabling the community to develop into a role model community, 4) The student is aware of the importance to be a tour guide, 5) The student fulfills the role of a tour guide to the best of their ability, 6) The student can manage their daily life time effectively, and 7) The student can adapt in changing situations. This indicates that educational management can approach a STEM Curriculum through the community history of Ban Prohm Thin Tai to enhance the ability to be a tour guide and the local consciousness of Elementary School students.

4. Discussion

1. Studying in-depth knowledge about the community history of Ban Prohm Thin Tai reveals that the community has archaeological sites that have been human habitats since prehistoric times. It later developed into a historical urban community with constructed moats and earthen embankments. Influenced by Indian culture, it also excavated prehistoric human skeletons and discovered various artifacts such as pottery fragments, rings, beads, earrings, and stone tools. This indicates that the area around Ban Prohm Thin Tai contains archaeological sites with a long history, deserving preservation as a heritage for future generations. This aligns with the work of the Royal Society and its colleagues (2565), which states that designing environmental and archaeological site maps can facilitate easier access to these sites. The principles of designing such maps should aim for clarity, clearly indicating the locations of buildings and religious sites using symbols rather than detailed descriptions. The benefits of using environmental and archaeological site maps include 1) providing knowledge of the location and entirety of each archaeological site, 2) ensuring accurate access to each site, and 3) fostering motivation to study the history and significance of these sites among the local community. Furthermore, Case, Burnett, and Lertcharnrit (2023) also state that the Ban Prohm Thin Tai community shows a tendency to participate in networks for exchanging various types of stone and glass beads. Some of these items are linked to Vietnam and India. Additionally, Moro ornaments and ceramics connect Ban Prohm Thin Tai with other communities in the western, central, southern, and northeastern regions of Thailand. This indicates a greater involvement in exchange networks compared to other Iron Age communities in Southeast Asia and suggests potential for direct or indirect interactions with the northeastern region of Thailand. Furthermore, Surapol Promkul, Phrasopon Phatthanabat, and Vitthaya Thongdee (2020) also mentioned that archaeological sites and artifacts are tangible cultural resources, considered a type of "national heritage" in the academic community. They are collectively referred to as archaeological resources, which encompass locations, structures, and objects related to human civilization and culture throughout history. These resources hold significant value and can be managed to benefit the livelihoods of present-day people and passed on to future generations.

2. Designing an educational management approach to a STEM Curriculum through the community history of Ban Prohm Thin Tai to enhance the ability to be a tour guide and the local consciousness of Elementary School students found that, The researchers have developed a learning management framework through the local history of Ban Phrom Thin Tai community to enhance the ability to be a tour guide and the local consciousness of

Elementary School students, termed the STEM+H model. This model includes 1) Science, integrated with history, 2) Technology, integrated with history, 3) Engineering, integrated with history, and 4) Mathematics, integrated with history. The overall appropriateness of the framework is rated highly. Aligned with Kranikarn Kesakamkha, Ladha Silanoi, and Angkana Tungkasmit (2022), who stated that social studies knowledge and skills, scientific skills, mathematical skills, engineering skills, and technology skills can result in learners developing to the level of analyzing, testing, evaluating, creating, presenting solutions, and presenting their work. They also contribute to classroom evaluation, discussion of the results of their work together, and review and summarize the knowledge clearly and accurately. Furthermore, Siriporn Srijan, Pirapat Rungsathorn, and Pradit Wichai (2019) also proposed that teaching management helps students connect knowledge and skills learned from science, mathematics, technology, and engineering with real-life situations. Students apply this knowledge and skills to solve real problems in their communities or society, creating their own learning experiences. Teachers organize learning activities based on students' interests or problems, allowing them to define specific problems and their problem-solving methods. In framing the problems for students to study. Moreover, Piyawan Choksathaporn (2021) further elaborated that promoting integrated learning through STEM subjects - Science, Technology, Engineering, and Mathematics - by integrating knowledge to create challenging learning processes for students using scientific methods, occurs within classrooms to enhance the quality of learning for students.

3. The study evaluates the outcomes of implementing an educational management approach in a STEM Curriculum through the community history of Ban Prohm Thin Tai to enhance the ability to be a tour guide and the local consciousness of Elementary School students found that an educational management approach a STEM Curriculum through the community history of Ban Prohm Thin Tai can enhance the ability to be a tour guide and the local consciousness of Elementary School students This includes fostering positive attitudes towards preserving their local culture, collaborating with the community, taking responsibility for their roles, understanding the importance to be a tour guide, fulfilling their duties effectively, managing their daily lives appropriately, and having a good knowledge of their local history. This aligns with Maturot Eiamsupha's (2015) statement that tour guide should be play the role of teachers, imparting detailed knowledge to tourists about the specific location. They cover both historical and contemporary aspects, arts and culture, traditions, and archaeological sites, and even perform as actors to create engaging activities that alleviate tourists' boredom. As psychology analysts, they must observe tourists' needs closely, gauging their desires and preferences. Acting as ambassadors representing the local community, they strive to leave tourists impressed each time they visit. Furthermore, Panyha Senphuang and Phramaha Maha Mit Tatpanyo (2020) emphasized that a good youth volunteer must be mindful of their attitudes, which have consequences for both them and others. Training involves cultivating physical, verbal, mental, and emotional qualities through kindness, compassion, and harmony. These qualities contribute to the success of youth volunteer work and enhance the group's distinctiveness. Furthermore, Kamolasa Phuwachonathipong and colleagues (2023) also emphasized the process of instilling a sense of pride in young people to preserve their hometown. This involves storytelling about community lifestyles, cultural values, traditions, and local wisdom through online social networks, leading to sustainable local development. Achieving this requires collaboration among local communities, government, private sectors, and the public, and the integration of local development issues. Understanding shared goals with community members using beliefs, religions, customs, and local wisdom creates a network within schools that connects to the community. This integrated learning approach includes subjects such as history, arts, social studies, and Thai language, promoting youth learning through real experiences and cultural immersion. This process instills local cultural pride in youth and highlights the value of local wisdom, collectively contributing to community-driven economic creativity.

5. Conclusion

Development of the STEM Curriculum through the community to enhance the ability to be a tour guide and the local consciousness of Elementary School students. The study will explore knowledge from the history of Ban Prohm Thin Tai. Subsequently, it will design and develop a holistic educational approach, the ability to be a tour guide, and the local consciousness of Elementary School students and apply this knowledge for the sustainable benefit of their community.

6. Suggestions from the Research

6.1 Suggestions for Implementing Research Results

1.1 Teachers should familiarize themselves with the steps of implementing STEM education by adapting teaching processes to the context of their school and enabling students to apply them practically in their daily lives.

1.2 There should be a systematic planning of teaching activities based on the principles of process planning, implementation, and evaluation steps.

6.2 Suggestions for Next Research

2.1 Further studies should explore integrated interdisciplinary teaching approaches to enhance students' multi-dimensional skills and knowledge. These approaches should aim to develop students' learning skills that are suitable for the 21st century.

2.2 There should be expansion of the outcomes of integrated learning management through community history for elementary school students in various contexts.

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Authors contributions

Thanin Intharavisit were correspondence and responsible for study design and revising. Vijitkr Khamrat, Juthamas Sukyaeng & Anodar Ratchawet responsible for data collection. Prof. Yuttana Chaijalearn drafted the manuscript and Prof.

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No additional data are available.

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