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Editor’s note

Journal of Multidisciplinary in Social Sciences is the development of SDU Research Journal Humanities and Social Sciences ISSN 1905-2847 which was an academic journal of Suan Dusit University that had been publishing for 14 years from 2004 to 2018 and evaluated to be in Thai-Journal citation Index Centre (TCI) tier 1 and ASEAN Citation Index (ACI). In 2019, the journal’s name will be changed to Journal of Multidisciplinary in Social Sciences ISSN 2672-9806

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TVET Attractiveness: Thailand and International Perspectives

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Abstract

This article is written to reveal ideas, situations, and factors that influence the Technical and Vocational Education and Training (TVET) attractiveness by international perspectives. The documentary research was conducted. Data and information such as the research articles, academic documents, and empirical data, were collected to review for analysing and synthesising the TVET international situation and complex relationship model of factors that relate to TVET attractiveness. The conclusion of the article presents the TVET development in order to progress for attractiveness that must be developed as a holitstic system. Developed and developing countries, including international organizations, both for-profit and non-profit, are the key components of a holistic system. There are many efforts to promote TVET in levels including policy level, supporting level, and practical level, by empirical beliefs, attractiveness that is the basis of country development. The factors relevant to TVET attractiveness are very complicated in the relationship. Finally, the relationship model of TVET attractiveness was initiated by documentaries review.

Introduction

Technical and Vocational Education and Training (TVET) has a highly critical role to play in supporting economic and social growth, moreover, it has played as a key part in UNESCO's mandate for education. It offers valuable benefits to individuals and enterprises in social, economic, culture, technology, and education development (Kitiashvili & Sumbadze, 2018; Meesuk, 2019). In addition, the importance of TVET has been mentioned in other organisation, World Bank, which place more priority of TVET than previous. The policy of TVET promoting is seen as the human resources investment and as a manner for supporting economic growth. As has been summarised in the World Bank strategy, the bank considers system reform via assessments and evaluations, especially, assessment of learning and skills; including team skills, critical thinking, ICT, problem-solving, and creative thinking. This definition is for the entire education system: public schools, colleges, universities and training programmes. That reveals the learning and skills are not only in general education, but also in the overall education system. Learning and skills have been mentioned in the area of general education, higher education and especially in vocational education. Learning and skills training are significant and delivered by cross-sectoral working (UNESCO-UNEVOC, 2013).

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Recently, UNESCO (2016) issued the strategy for technical and vocational education and training (TVET) 2016-2021 which aims to enhance the TVET system and to support youths and adults with gaining skills required for appropriate work, employment, entrepreneurship, and lifelong learning. Furthermore, to contribute to the implementation of the 2030 Sustainable Development agenda. The strategy for TVET including (1) fostering youth employment and entrepreneurship -- this strategy aims to reduce youth unemployment. Because one of the recent problems for societies and economies is the rising youth unemployment both in developed and developing countries. Hence, TVET will equip youth with the skills required including skills of entrepreneurship. TVET can also increase productivity and increase wage levels and reduce access barriers to the world of work, enhance responsiveness to changing skill-demands by enterprises and communities, for example through work-based learning, and ensuring that skills gained are recognised and certified. In addition, TVET can also offer skills development opportunities for low-skilled people who are unemployed, out-of-school youth and individuals not in education, employment and training; (2) promoting equity and gender equality -- this strategy aims to reduce gender-bias of TVET programmes and lack of opportunities for skills development and proper work. Ensuring all women and men, youth and adults, have equal opportunities to develop and enhance their knowledge, skills and competencies; (3) facilitating the transition to green economies and sustainable societies -- this strategy aims to focus on ways to create effective partnerships across governments and between agents and institutions concerned at the national and local levels and ensuring and sharing knowledge development in the field of greening skills especially through the UNESCO-UNEVOC Network.

TVET has been discussed in many forums throughout the world. The contribution of changing and supporting, TVET has been discussed at the policy level including an increase in the skills gap within and between countries. After TVET became worldwide recognized as a major driving force of technological development and socio-economic growth which has caused policymakers to focus on improving TVET programmes to ensure that both youth and adult learners acquire the essential skills for poverty reduction and economic recovery. Policymakers worldwide have been reminded that TVET is the backbone to achieve skilled human resources for the manufacturing and services sector. They have been responding to TVET system improvement by establishing educational policies at all education levels to be linked to the TVET system. There are many efforts of organisations, both private and public, to combine education and training depending on occupation and employment. Moreover, countries have increasingly promoted TVET during times of financial crisis and have used this advantage to address the policy measures to improve TVET attractiveness. TVET is interested in the input, process, output, and outcome. Cause the TVET attractiveness is considered the improvement of permeability and diversity of pathways and programmes, campaigns and improvement to guidance and counselling. (European Center for the Development of Vocational Training, 2014; Musyimi, Malechwanzi & Luo, 2018).

Many countries policymakers have promoted TVET in order to respond to the current situation of the world. The model established regarding professional occupational competencies usually accounts for four aspects of competence: vocational knowledge, belief/values, motivational orientations, and self-regulating capabilities. Vocational knowledge is further divided into four subcategories including content knowledge, pedagogical knowledge and pedagogical-psychological knowledge as well as counselling knowledge. These have been delivered to various countries in order to manage vocational education and build TVET to be an attractive education (Zinn, Raisch & Reimann, 2019). We found that the results of the performance of promoting TVET still face problems. Four challenges confronting TVET are uncoordinated government, fragmented delivery, lack of recognition for technologists and competency gaps among instructors (Khirotdin, Ali, Nordin & Mustafa, 2019). The challenges cause TVET attractiveness to be discussed in both developed and developing countries (International Labour Organisation, 2017; Ismail, Adnan, Masek, Hassan, Hashim & Ismail, 2019; Henseke, 2019; Chakroun, 2019).

Hence, it is necessary to review the situation, opportunity, ideas, and the challenges of TVET i through an international perspective as the aims of this paper is to summarise the TVET situation and how countries deal with TVET changes in their country, especially in TVET attractiveness. The analysed information review will be useful for vocational educators and educational policymakers to understand TVET in the ways of the development of TVET to meet the needs of society and to be a key to economic and social development.

International TVET attractiveness situation

Although there is a lot of effort to promote TVET by specifying in the national policy and enhance the implementation, many countries are still facing the problem that TVET is generally not as highly esteemed as other educational options, upper secondary or higher education. The attractiveness of technical and vocational education has shown to be low based on the information of the relevant documents and reports such as legislation on counselling practices, implementing documents, and the social factors by means of which the TVET education system can influence the individual's decision to enroll both student and parents. (Lovsin, 2014)

According to the Germany vocational education system, which is known to be the model of the TVET system that produces effective labour based on the labour market needs. Germany has a very powerful vocational education system and its dual apprenticeship system is based on strong coordination and mutual trust between the social partners including employers, chamber of commerce and industry, trade unions and government, at all levels from national to local. Germany has a vision that technology is being integrated into all professions and industries. It is transforming traditional occupational profiles in the majority of industries, products, processes and services are undergoing constant change, and new occupations are going to emerge. Moreover, in the labour market with innovations and the requirement for skills of the 21st century, TVET must have the know-how learned from theoretical coursework and imitation of skills by learners. The learners will require flexible skills to prepare themselves to be hired for jobs in the future. In addition, the traditional models of TVET which initial training have been inadequate in preparing workers for the continuously evolving labour markets (Kanwar, Bakasubramanian & Carr, 2019; Henseke, 2019; Moodie, Wheelahan & Lavigne, 2019)

In the year 2018, by the formal education system, England had approximately 40% of upper secondary enrolled in vocational education, less than 47% in Germany (Moodie, Wheelahan & Lavigne, 2019). England has called 'further education' which comprises of basic vocational education, higher vocational and technician programmes, retraining programmes, and several education programmes offering adults a second chance at essential learning. England has a model of apprenticeship reforms by replacing qualification-based 'frameworks' with 'employer-led standards'. The current problem of England's TVET is the lack of qualifications and status of classroom-based teachers. England's effort to transfer TVET knowledge and skills from the workplace to education. Apprenticeships are facilitated by staff in various roles, each with their own form of professional formation, across different national TVET systems. This has set the UK government on the path of replacing the suites of qualifications that has made up apprenticeship frameworks to the introduction of apprenticeship standards. The employer-led apprenticeships have been designed in a way that varies significantly in content and complexity. Therefore, higher-level apprenticeships have been improved, many lower-level apprenticeships have less content and no qualifications (Esmond, 2019; Moodie, Wheelahan & Lavigne, 2019).

By the way, Australia is developing the vocational institution, system and teachers. In Australia more than half (55%) of students in upper secondary education enrolled in the dual education program, they have to study at least 1 vocational subject. Australia divides post-secondary education into vocational education and training, and higher education, sharply. Both sectors are of very similar size, but most private provider's share of publicly funded vocational education and training are equivalent to full-time students. This is the direct outcome of Australian federal and state governments, the model of 'marketise-privatise', first to marketise and then to privatise vocational education and training. By marketise, Australia means governments' allocation of resources are given by a competition, typically for students. This is said to make institutions have more competition by providing flexible and responsive programmes to respond to 'customer' need. Additional, privatisation means the prolongation of public subsidies are for profit private training providers and lets them subsidise and manage their programmes by themselves (Moodie, Wheelahan & Lavigne, 2019).

In Malaysia, a big challenge to the TVET situation is creating entrepreneurship as an available skill. Quality TVET graduates have become one of the major shifts as addressed in Malaysia Education Blueprint 2015-2025 which focus on delivering quality TVET graduates. Transforming TVET by the industrial and enterprise-led approach has three main strategies including (1) strengthening the governance related to TVET for better management, through the blueprint of the national qualification framework, and harmonising of various systems across both private and public TVET institutions; (2) enhancing the quality and delivery of TVET programme to improve graduates employability, eliminating duplication of programmes and resources, enhancing cost-efficiency and expanding funding for TVET to increase enrolment; and (3) enhancing TVET branding to increase its attractiveness. These are the strategies that Malaysia has addressed to achieve TVET through promotional activities that highlight TVET as an attractive career choice (Ismail, Adnan, Masek, Hassan, Hashim & Ismail, 2019; Khirotdin, Ali, Nordin & Mustafa, 2019).

In Hong Kong, China's education reforms have been upgraded and modernised including what it now terms the VPET (vocational and professional education and training) sector. It has implemented curriculum reforms in terms of knowledge, skills, values, and attitudes that prepare learners. Unlike, the previous system which Hong Kong inherited from the British colonial rule, the new model is designed to achieve the highest potential on multiple pathways including general education, TVET, higher education, and continuing education. TVET in Hong Kong is introduced at the senior secondary level via Applied Learning subjects (Pavlova, 2019). It allows TVET in Hong Kong to be interesting and attractive to students and parents decision to enrol. Moreover, the situation in China, China's transition rate from lower secondary education to higher secondary education has increased significantly, from 80.5 to 93.7 per cent. In light of this impressive progress, the Chinese government aimed at raising the gross enrollment rate in vocational education by 2020. Looking ahead, reforms in upper secondary education are necessary for China, given the increasing demand for a highly skilled labour force and China's fast demographic change as the young population cohorts decline. Quality and relevance in vocational and general education have been discussed for preparing the bottleneck in further expansion, regarding 21st century skills for a new career, employment or entrepreneurship.

On the other hand, there are not only positive changes towards TVET. In Iraq, the Kurdistan Region, the situation of TVET is an interesting matter. The government's poor recognition of vocational and technical schooling system. The enrolment in TVET is dropping but the increasing numbers of schools and teachers, and the budget for education has not increased. Consequently, the Kurdistan society considers TVET as a low-status education (Ismail, 2019). Similarly, in Australia, the problem that the Australian government faced is changing and reversing policies frequently, and have cut funding levels several times. Moreover, students' fees have risen and the range types of programmes available to students have been cut, as Australian governments limit public funding to programmes are deemed to be 'in demand' in the labour market (Moodie, Wheelahan & Lavigne, 2019). Moreover, in China, the TVET procedure is also a barrier to TVET attractiveness such as the teaching focuses on the transmission of knowledge and the training of skills while neglecting the values of action learning. Without treating "work" as an entity, a holistic understanding and reflection of work cannot be developed, so that eventually the highest level of professional cognitive competence cannot be achieved. In practice, due to the lack of equipment, facilities and organisational conditions, vocational schools and colleges usually focus on theoretical knowledge acquisition or they fail to conduct in-depth work practice, thus neglecting the acquisition of experience. Furthermore, under the current student admission mechanism, most of the TVET students are those who are left behind due to low scores in university admission examinations and high school admission examinations. They are not usually good at deductive learning approaches based on abstract thinking; they have extreme difficulty in deriving theoretical learning from the work situation and are unable to realise the knowledge transfer (Zhao & Shen, 2019).

Thailand TVET situation

In the case of Thailand, there are national development policies which are applied from the National Economic and Social Development Plan. The national education development plan has been developed and comprises the general education plan, informal education plan, higher education plan, particularly, vocational education plan, coherently. All plans aim to develop all education levels in the country to deal with the changes in the world and the nation's economic, social and technology conditions. This influence the education sector to be responsive and develop as well as prepare the manpower to work in many sectors including industrial, commercial, agriculture, tourism, and services follow the needs of social, economic and labour market. This influence can be seen from Thailand's government focus and emphasize on education policy as an urgent mission (Meesuk, 2016; Meesuk, 2019). The department involved in human resources development is the Office of Vocational Education Commission (OVEC) with the main responsibility to conduct education for the improvement of Thai people's quality of life. Its main aim is to enhance the knowledge, skills, experience and competencies of people for skilled careers to the labour market. Data from OVEC in 2019 revealed there are 913 vocational schools in Thailand classified as technical college, vocational college, polytechnic college, industrial and community education college, college of agriculture and technology, in addition, the college offers a variety of courses which are named by the type of subject taught (Office of Vocational Education Commission, 2019; Songthanapitak, Meesuk, Uapipatanakul & Jingjit, 2018).

In addition, Office of the Education Council (2018) has identified five proposals for vocational education reform in Thailand: (1) Develop the basic skills of vocational students, especially mathematics and basic skills, as they find that graduates have very low skills in this field. (2) Increase the budget for education. In particular, the availability of adequate supplies to provide quality teaching and learning. (3) Development of teachers by setting up vocational training institutes that offer a clear standard in addition offer Train the Trainer with the new knowledge in the enterprise. At the heart of vocational education is the development of teachers as well as other levels of education. (4) Enhance external quality assurance. The improvement consists of the two indicators; one indicator is the educational achievement which includes indicators of learning and professional skills and the second indicator focuses on school readiness to measure the readiness of personnel. If the school is not evaluated the quality assurance agencies must follow up and assist in making improvement plans. It also punishes school administrators who cannot perform as planned. (5) Establish a central organization for the link between educational institutions and enterprises. Both in terms of placement of trainees and learners. Preparation of professional standards and Quality Assurance of establishment and quality graduates (Songthanapitak, Meesuk, Uapipatanakul & Jingjit, 2018).

As reported by the Center for Information Technology and Vocational Education, the Office of Vocational Education Commission. There is an interesting issue that the number of vocational students in the academic years 2016-2019 has not declined, both in public and private vocational schools. Moreover, there is a slight increase each year as shown in Figure 1.

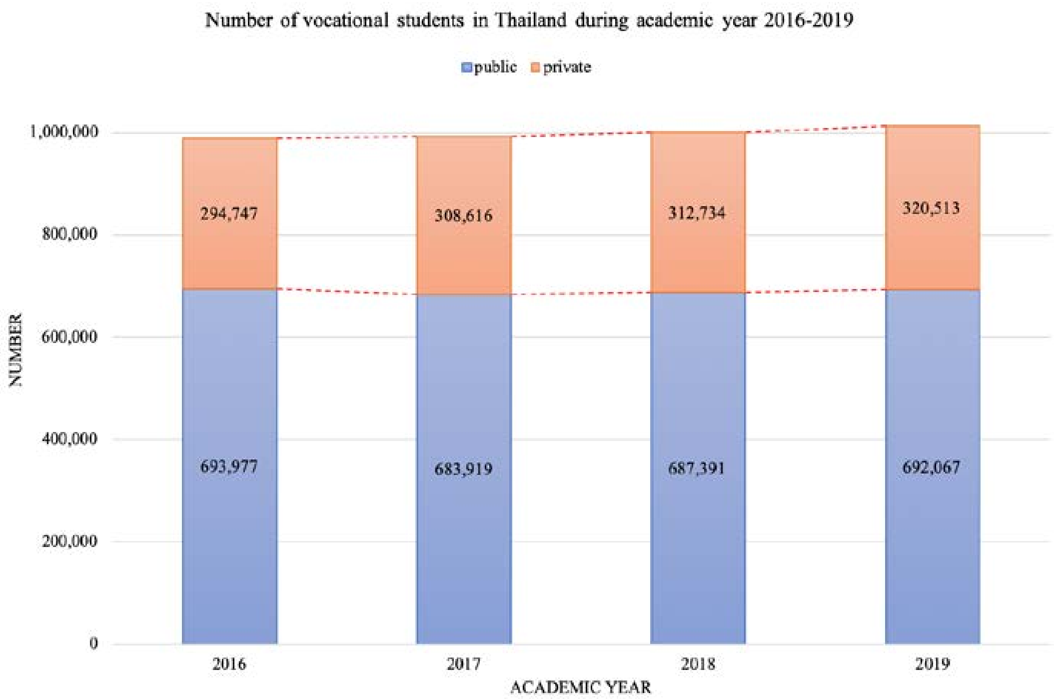

Figure 1 Number of Thai TVET students during the academic year 2016-2019

Thailand is facing the problem of vocational education such as in preparing the manpower for the labour market. As the input of education is student, the quality and achievement of vocational students have been declining (Ruamchomrat, 2015). . Considering the likelihood of labour demand, from the study of labour market trend in Thailand during 2011-2021 by the National Statistics Office (2018). Based on the estimated data of workers who have worked for 5 years from the National Statistics Office during 2017 – 2021, it was found that the trend of workers decreases annually from 37.69 million people in 2017 to 37.37 million people in 2021. This could be due to developments in technology, where technology could replace the human workforce and business management style could also be changed. The data is shown in Figure 2. (Songthanapitak, Meesuk, Uapipatanakul & Jingjit, 2018).

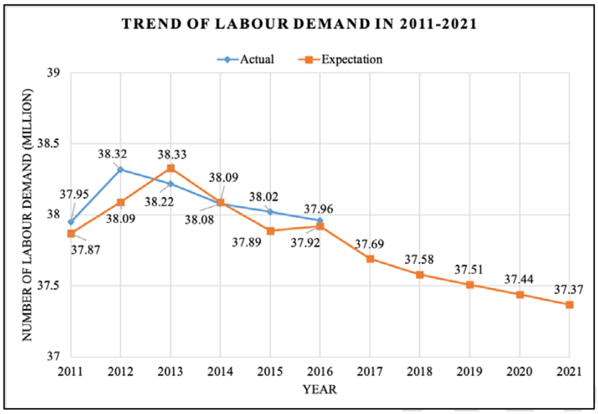

Figure 2 Trend of Labour demand in 2011-2021
Source: National Statistics Office Thailand (2018)

From the situation of Thailand, it can be seen that this is happening in the opposite direction. While the demand for labour is declining, the number of vocational students is stable and also slightly increased. But, the quality of students and the achievement of vocational graduates are not satisfied. Due to government offers beneficial policies and the popularity of vocational education and careers in society. Hence, consideration of TVET attractiveness should be mentioned including sustainability, feasibility, and quality of TVET both in terms of attractiveness to students and parents, and attractiveness to the enterprises. Therefore, it can be reliably stated that Thailand has an attractiveness in TVET.

Factors influence TVET Attractiveness

The concept of "attractiveness" is complex and can be defined in different ways, though it has two main focuses: (1) its subjective nature, or how the beholders sees it and (2) factors such as quality assurance, relevance to the labour market, recognised qualifications, and others. There are some factors that significantly influence TVET attractiveness such as student's interest, parental roles, teacher's teaching style, etc. (Ismail, Adnan, Masek, Hassan, Hashim & Ismail, 2019). In this article a review of the main factors which influence TVET attractiveness that is beyond the policy—and focuses on the initial process--including teacher qualification, curriculum and instruction development, the line between TVET and industry, TVET image and value.

Teacher Qualification

In developing countries, TVET teachers have mostly been trained under the traditional knowledge-based (vocational) educational system and have little understanding of the real situations in enterprises; on the other hand, 'applied knowledge' is a widely accepted concept; TVET teachers do not have enough knowledge and sensitivity to understand the difference between 'applied knowledge' and the knowledge in use. TVET college teachers, especially, possess several different qualifications or missing qualifications. Emphasis on teaching students means self-awareness and self-leadership. Teachers themselves need training, which is essential in building their competence in teaching the 21th century skills (Zhao & Shen, 2019; Zinn, Raisch & Reimann, 2019; Okon, 2019).

In developed countries such as Australia, that requires properly qualified and re-coursed teachers with enough time to engage in the scholarship of teaching and learning, and to research the way their field is changing. TVET teachers need to be supported to become a dual-professional who are industry experts as well as expert teachers. This process is important in supporting the most disadvantaged students to ensure they have access to programmes and support that helps them to succeed. In Germany, regulations extend to vocational teachers and to the in-company trainer. School teachers of general vocational subjects are required to undertake a master degree and preparatory practical service. In-company trainers are responsible for training apprentices in the workplace. They are required to be registered by the relevant organisation (Moodie, Wheelahan & Lavigne, 2019). The expectation of the teacher is not only a person who transfers knowledge and skills. A condition for success of TVET is the ability of the teacher to analysis and identification of suitable work tasks that are conducive to students for competency development (Schroder, 2019). Hence, it can be concluded that the importance of teacher qualification is a factor that influences TVET attractiveness directly and indirectly via the trust of social and community on TVET quality.

Curriculum and Instruction Development

The traditional TVET curriculum of TVET institution is composed of two relatively independent didactic parts including theory courses and operational technical skill training called 'parallel curriculum'. Identifying the training contents relies mainly upon a transformation of discipline-specific knowledge generated from science and technology. The content of teaching is knowledge with 'fact' and 'symbol' as the main forms of the presentation without a direct connection with the world of work. Practical teaching emphasises to operation skills but without integration learning in real work situations and the work process. Therefore, it is difficult to meet the requirement of competence development and to achieve the educational goal (Zhao & Shen, 2019).

Curriculum development is a process of adapting the curriculum to social, economic and technological needs by means of necessary review and improvement. Strengthening TVET attractiveness by the development of curriculum including means of learning, activities, the pathway of student work in the future, and assessment and evaluation. International approaches to curriculum development based on job and occupation analysis such as Competence-Based Education, Work Integrated Learning, Dual Training System, and the DACUM (Development a Curriculum) method have been integrated. Their application has massively improved the TVET curriculum's relevance to practice and its effectiveness and attractiveness (Zhao & Shen, 2019; Kitiashvili & Sumbadze, 2018).

Countries conduct TVET by several models. The first model is the liberal market economy where enterprises, have the power to describe knowledge and skills relevant to the market. Second, the state-regulated bureaucratic model where the government, such as in France, has power and is responsible for deciding what knowledge and skills would be taught at TVET institution. Third, it employs a dual system, in Germany, where two models above are applied leading to public-private partnership (PPP). Despite the increase in entrepreneurship activities and programmes in the educational institute, these activities and programmes are often being implemented beyond the curriculum. This causes difficulty for students to balance the concept of academic needs and entrepreneurship activities and integrate knowledge and skills in the classroom by themselves (Ismail, Adnan, Masek, Hassan, Hashim & Ismail, 2019).

Most teachers and instructors in TVET colleges do not possess up-to-date knowledge for solving technical issues. The instructors who are professionals tend not to stay in TVET colleges because of higher paying job opportunities. (Ismail, 2019). Hence, Work-based learning, in particular, for apprenticeship is drawing increased TVET attractiveness. It refers to all forms of learning which take place in a real work environment, providing individuals with the skills needed to successfully obtain and keep jobs and progress in their career. Work-based learning has a huge difference between classroom-based learning and laboratory-based learning. It combines elements of learning in the workplace with classroom-based learning. Several international and regional organisations have developed approaches and tools to support the promotion of work-based learning. For example, the European Training Foundation (ETF) published a handbook for policy-makers and social partners to understand some of the ways in which learning in the workplace can be encouraged and how its quality can be improved. More recently, the International Labour Organization (ILO) produced a Toolkit for Quality Apprenticeships with the view to improve the design and implementation of apprenticeship systems and programmes internationally. Furthermore, in details of potential changes that might affect the world of work in years to come, it is important that TVET curriculum and instruction will be changed to respond to learner's demographic changes, globalisation and technological progress which affects the workplace. (International Labour Organisation, 2017; Chakroun, 2019).

The link between TVET and Industries

More widespread forms of uncertain employment, income insecurity and the growing demand for general competences in the labour market may further contribute to the declining TVET attractiveness among high-achieving youth. Despite advantages at career start, vocational skills are at greater risk to become out-of-date when compared to current technological advancements (Henseke, 2019).

The concept of 21st century skills aims to meet the future demand on educational systems that emerge from the socioeconomic megatrends. Therefore, the competencies can not be taught through instruction, but have to develop as the learner activity engages with tasks, learning situation must be designed didactically in such a way that they have a holistic character that comprises of planning, decision-making, execution, evaluation, and reflection, sequentially (Schroder, 2019). In addition, 'the employability skills' is the key to the current situation, which is classified into subject skills and transferable skills. The subject skills are the discipline-related skills and the transferable skills refer to the possibility of applying the knowledge acquired and used in different jobs (Okon, 2019). All skills that are needed are required to be built and developed in the education sector and the industrial/enterprise sector together and have been reflected by the curriculum with two parts of the study, one is in the school for initial knowledge and skills, another is in the industry/enterprise for applied and advanced knowledge and skills. Strong linkage between TVET and industry is necessary for the TVET system.

As mentioned, to promote TVET to be more attractive it should express how the TVET benefits the graduate and society. However, there is a lack of enthusiasm on the part of industrial enterprises. The government is supposed to play a role to facilitate cooperation and ensure that small and medium enterprises and local industries are offered interesting incentives to enter into cooperation with TVET colleges. This is related to the policy and if there is a lack of effective policy and regulation, cooperation between colleges and small and medium enterprises, and industries will remain superficial. In Germany, the cooperation between TVET and industries has been mentioned. A key success factor of cooperation in Germany is that technical-vocational training funds, venues, facilities and trained instructors are provided almost entirely by enterprises and industries. The government has a key role between TVET colleges and employers. It sets up the legal framework and delegates the authority to all relevant groups, including local chambers of commerce and industry, employers, labour unions, and related government departments. Moreover, most important, the government must act inclusively to ensure that everyone, individuals and organisations, have open access to TVET (Postiglione & Tang, 2019).

The practical approach should be enhanced in school and on-the-job through shadowing experiences, internship, part-time jobs, refresher courses, among other means. The learning process in school will be improved by setting up virtual educational environments and linkage with the real work environment to enhance the linkage to the enterprises where the students can contribute by offering service as a class or individually. When TVET provides more real-life training, less theory, more hands-on training, therefore, the enterprises will be working closely with members of the academic community to avail them the opportunity to inject into the school system. The kind of skills they need and school adaptation of the academic programmes will be developed and adjusted. It allows for the TVET to become more strongly attractive to both individuals and industrial enterprises (Okon, 2019).

TVET image and value

Image and value could be highlighted as a major factor in determining the overall attractiveness of the organisation. Thus, recognition of TVET image and value are determinants to the success of TVET policies. TVET still lacks recognition in the labour market (Hamdard, 2019; Okon, 2019). This leads to a reduction in the rate of return on private and industry sector investments. The informal lack of recognition is mainly through the poor standing of qualifications issued while the formal is through the structures that issue the certificates.

The policymakers emphasize on the need for establishing more colleges to graduate skilled students. They attribute the problems to the declining value and poor attitude towards TVET. They reported the decline of desire for TVET because the government pays all its attention to certain colleges such as medical college, engineering college, science college, but has ignored TVET colleges (Ismail, 2019). This negligence has been emerging in developing countries, where students are not applying to TVET colleges because they believe they will not have a good future career by graduating ed from a TVET. Moreover, they and their families see the government and corporations pay attention to 'high-class' occupations particularly, therefore, they feel TVET will not offer them a good chance of getting hired. Moreover, Ismail (2019) has discussed that it is time for the government to re-evaluate TVET concept and people's view of TVET by reforming TVET which should explore opportunities for employment.

In the U.S., policymaker's have been pushing the positive image of TVET in high school, before they make a final decision to study in general education or TVET. Which TVET deters capable students from college and prepares them for jobs, takes the focus to the occupationally relevant skills and credentials that graduates need for a smooth transition to adulthood. Empirical reporting finds that use of a nationally representative sample of early-career Americans shows that students tend to enrol in vocational classes based on whether such options are available to them (Daniel & Stange, 2019; Okon, 2019). In addition, Henseke (2019) reported that the demand for high-skilled labour is typically inferred indirectly from wage differentials and influence TVET attractiveness. In the case of Germany, there is good evidence for a substantial and steadily growing wage premium associated with higher education, especially in TVET for recent graduates. This influence TVET to become attractive to people, increasing enrollment and retention rates until graduation. The future benefits from enterprises are an effective factor for the student either in general education and/or vocational education. TVET attractiveness issues such as image and value are effected by its benefit, positive feedback, positive outcome, powerful opportunity to be hired, from society and enterprises.

The TVET attractiveness could be initiated by starting from TVET policies that should accommodate to the systems including teacher qualification, curriculum and instruction development, the link between TVET and industry, and establish TVET image and value. The complexity of the model is a holistic relationship that cannot be separated to develop only one part. Partial development can be done but it will not have much effect as seen from the previous evidence. The complex model can be shown in Figure 3.

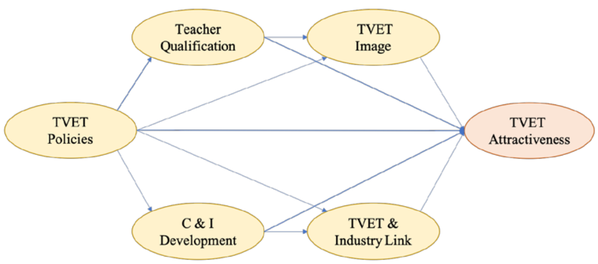

Figure 3 Factors influence TVET attractiveness

Conclusion

According to Moodie, Wheelahan & Lavigne (2019) who summarised about TVET development for progressing for attractiveness stated that a TVET must be developed as a system of institutions where TVET teachers are supported to develop as dual-professionals who support, contribute to, and have a mention in, the development of their college. TVET should have sufficient readiness by adequate and long-term resourcing. Moreover, TVET makes its strongest contribution when it is based on strong trust and coordination between the social partners comprises of employers, trade unions, and government. TVET's roles go further than developing the student as a person, it should play a role in developing their communities, and local occupations and industries.

Many countries are faced with the decreasing number of vocational students. There is a lack of required skills and knowledge of TVET graduates. Although some countries have no problems with the learners decreasing, but found that the quality of the student mismatches to the needs of the labour market. But the role of TVET as being important to society and to the economic development is widely discussed . There are many efforts to promote TVET in levels including policy level, supporting level, and practical level, by empirical believes that TVET is the basis of country development. Countries are promoting TVET in several ways such as addressing the national policy to increase the proportion of vocational education students, supporting more funding and investment in TVET, expanding programmes that matched the workplace's needs, etc. (Henseke, 2019; Khirotdin, Ali, Nordin & Mustafa, 2019; Ismail, Adnan, Masek, Hassan, Hashim & Ismail, 2019; Chakroun, 2019)

The factors relevant to TVET attractiveness are very complicated in the relationship among factors, including teacher qualification, curriculum and instruction development, the link between TVET and industry, and establish TVET image and value. Its complexity is a holistic relationship and can not be separated in developing TVET to be attractive to a larger student base.

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Metadiscourse Markers Analysis Used in Communication Research Articles

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Abstract

This research aims to analyze the metadiscourse markers used in communication research articles in terms of studying: (1) the frequency of using metadiscourse markers, (2) the differences between the metadiscourse markers used in the introduction part and the discussion part of the communication research articles and (3) the correlation of 14 metadiscourse markers in 4 categories of metadiscourse markers; self-mention words, attitudinal markers, boosters and hedge. The language data corpus used is 20 communication research articles and only the introduction parts and discussion parts of each research article were analyzed. The instruments used are (1) AntConc 3.2 computer program for research articles random and (2) PASW 18.0 computer program for statistical analysis. The findings revealed that: (1) the three most frequently used markers are attitudinal markers; adjective, booster; verb and hedge; modal verb, (2) there are 9 metadiscourse markers used in the introduction parts and the discussion parts that are significantly different and the other 5 markers are not significantly different and (3) there are 13 metadiscourse markers used in the communication research articles that show correlation and 1 marker that shows no correlation.

Introduction

Language is used with intention and with purposes. It is also used as a means of communication which Matthews (1997) defines that language is the phenomenon of vocal and written communication among human beings in everyday use. Thus, language is the basic means used for communication among people. This intention of communication is supported by Lyons (1981) who said that as we are people, we do not use only the languages originated in the world such as English, Chinese, Thai, etc. but we also use a variety of other systems of communication such as 'sign language' and 'body language' even if they are not written languages and we use them to communicate feelings among people.

As the aforementioned, it clearly defines the close relationship between language and communication in which the former is the ideal method but the latter is used in the real world. Supporting this, Crystal (1971) also stated that language is the most important method we have for communication. Language is not the only way that we use for communication but we also use other ways of communication such as gestures, facial expressions.

Communication is the process of transferring information from one living thing to another. Not only human who has the process of communicating but also

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other living thing. Communication consists of signal systems, such as voice, sounds, intonations or pitch, gestures or written symbols which communicate thoughts and feelings. According to the Mehrabian & Ferris (1967) there are three major parts in human communication especially in face-to-face communication. They are voice, words and body language.

Nowadays, research and linguists take an interest in studying discourse analysis because it relates to everyday language and the study of metadiscourse analysis has a close relationship with discourse analysis. This allows writers to try to find the way to interact with their readers.The writers can obtain several markers by analyzing metadiscourse.

The word “meta-” is a prefix which means "after", or "beyond,". It is a prefix used in English to indicate a concept which is an abstraction behind another concept and the word “discourse” means types of written or spoken communication.Therefore, metadiscourse means the discourse about discourse or language about language (Labov, 1989). In fact, the study of language is not that simple. Writers find that they cannot tell their readers what they are going to speak or write about in their text. They try to figure out how they can help their readers to understand what they want to tell. So, writers have to study metadiscourse for writing text in order to help their readers organize, understand, interpret, evaluate and react to texts on the way that the writers intended to (Crismore & Farnsworth, 1989; Hyland, 2004; Kopple, 1985; Labov, 1989).

Besides, Schiffrin (1980) indicated that the speakers use complicated talk or meta-talk for their expressions which organize and evaluate the conversation. Consequently, metadiscourse is not on the information itself but it is on the way that the information is conveyed. In other senses, the writer can make their readers to adopt their own way of thinking and more importantly, their stance may push their readers to adopt the same point of view by hinting at or cluing to or even by making up the details which strike the right point in the mind and heart of the readers.

This research studied the metadiscourse model offered by Hyland (2005) which is considered the basic model of metadiscourse markers analysis in the text. The study of Ädel (2006) used the non-integrative approach of metadiscourse to figure out the aspects of text organization, but exclude the interpersonal components but Hyland (2005) holds the very opposite idea of that model, that is, metadiscourse is interpersonal. The model set by Hyland (2005) is consisted of two dimensions of interaction as follows;

1. Interactive Dimension

The dimension concentrates on the awareness of the writers to participate with the readers and the methods which the writer finds to accommodate knowledge, interests, expectations and processing abilities. The writers try to shape and constrain a text to meet the needs of their readers. It can be said that this dimension helps to guide the readers to read through the text.

2. Interactional Dimension

The dimension concentrates on the methods used by the writers to manage interaction by intruding and commenting on their messages. The goal of the writer is to make himself explicit and involved with the readers by allowing them to respond to the text. It can be said that this dimension allows the writer to get involved with the reader in the text.

This research implements the metadiscourse markers analysis using the subcategories of the second dimension as the tool. They are self-mentions, hedges, boosters and attitude markers.

2.1 Self- mentions

According to Hyland (2005), this marker relates to the degree of writer’s presence in the text. These markers are the first person pronouns and possessive adjectives (I, me, mine, exclusive we, our, and ours). Regarding to the study of Hyland, it is found that the use of the first person pronouns is the most powerful markers of self-representation. The writers use this kind of marker to show how they are in relations to their argument.

2.2 Hedges

With regards to Hyland & Tse (2004), hedges indicate the writer's reluctance to the proposition as a created fact. Hyland (2005) states that they are markers such as “possible”, “might” and “perhaps” which are used to hold a complete commitment to a propositional information. They show subjectivity and make information look like an opinion rather than a fact. The point is that they show plausible reasoning of the writer rather than certain knowledge.

2.3 Boosters

Regarding to Hyland & Tse (2004) boosters relate to certainty and emphasize the force of a proposition. Hyland (2005) states that words such as “clearly” and “obviously” allow writers to close in alternatives and prevent conflicting views. Boosters focus on certainty by marking involvement with the topic and solidarity with a reader, and by taking an involved position against other points of views.

2.4 Attitudinal Markers

Referring to Hyland & Tse (2004) attitudinal markers express the appraisal of the writer on propositional information, conveying surprise, obligation, agreement, importance, etc. Hyland (2005) stated that words such as "agree," "prefer," "unfortunately" and "remarkable" indicate the affection of the writer rather than the attitude to proposition. They are lexical items which are much more powerful in expressing attitude than syntactic markers such as subordination, comparatives and punctuation, etc.

Metadiscourse is the newly invented term that is used when the writers mention their own acts of organization, thinking, writing or acts of their readers in reading and understanding. Metadiscourse is applied to help explain the essays, to indicate intentions of the writer, to guide the responses of the readers or to organize the texts as a whole and to improve the writing skills of the writers. Therefore, metadiscourse takes role as a guide which directs readers to the way they should understand, evaluate and respond to the propositional content. This research is to emphasize and promote the concept of metadiscourse markers in communication research articles and also their functions. The study used the samples from a journal which has a high impact factor and could represent a particular trend in writing a research article, namely the Online Journal of Communication and Media Technologies, and the researcher chose only two parts of research articles where the writers could express their own points of view, that are, the introduction part and the discussion part. This is because the introduction part and in the discussion part are the crucial parts of an article and hold the similar rhetoric characteristics in writing. It is simply stated that, in the introduction part, the writer tries to introduce the image of the whole article. It identifies the topics of content in the research and also condense what is in the entire research article. It also shows how each topic is important, why the research has to be conducted and how advantageous the research is. Writing the introduction part of the research article needs persuasive techniques in order to interest the readers to read through the article. The introduction part is like the threshold that the writers need to make the readers step over to get in and read the entire article. Doing this, the writer must make this part interesting, persuasive and clear. The same is said for the discussion part which should show the image of the whole article and the writers can additionally discuss on the research results to evaluate and make the research result clear cut and creditable. This part shows the accurate result and indemnifies how it is congruent with the hypotheses, concepts, theories, including the conflicts on the research results. Writing this information needs the same writing techniques and rhetorical use as writing the introduction part.

The reason why the researcher chose to analyze the metadiscourse in communication is that the field of communication takes a larger and more important role in everyday life. As currently found, there are numerous research articles on natural science, medicine, business and education, but only a few on communication. Nowadays, the field of communication studies has seen rapid growth in the 20th century and continued into the 21st century (Wei, 2017). There are many universities increasingly openning this field of study in both bachelor degree and graduate levels. These reasons influence the researcher to pursue conducting the research on metadiscourse markers in communication research articles to obtain the guidelines and improve research article writing.

Objectives

The research aims to analyze the metadiscourse markers in communication research articles with regards to:

1. study the frequency of using metadiscourse markers in the introduction part and the discussion part of communication research article.

2. study the differences between the metadiscourse markers used in the introduction part and the discussion part of the communication research articles.

3. study the correlation of 14 metadiscourse markers in 4 categories of metadiscourse markers; self-mention words, attitudinal markers, boosters and hedge.

Conceptual Framework

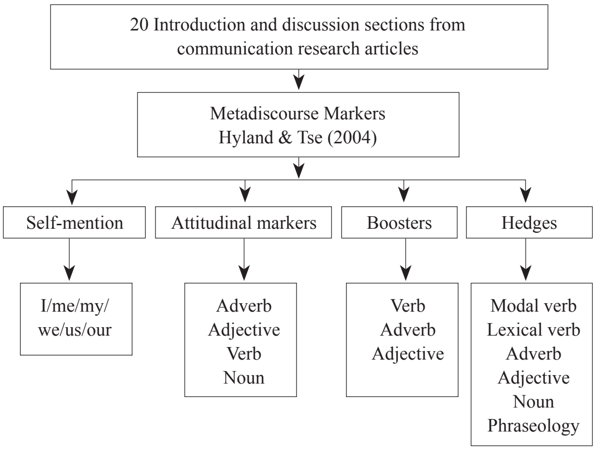

Figure 1 Conceptual Framework

Research methodology

1. Samples

The study includes twenty research articles particularly on communication research from Online Journal of Communication and Media Technologies with a total corpus of about 73,700 words. The chosen articles cover the period from 2013 to 2014. The choice of OJCMT in particular is based on its international reputation and on the grounds that the journal represents internationalized standard. Each article was randomly by AntConc 3.2 computer program.

2. Research Tools

The tool used is a code sheet for taxonomy, contexts and functions.

3. Collection of Data

3.1 The metadiscourse markers were identified in the corpus by applying 'Antconc 3.2' program.

3.2 The metadiscourse markers were examined according to the taxonomy code sheet.

3.3 The contexts and functions of each class were examined.

4. Data Analysis

PASW 18.0 program is applied to analyze statistical data.

Results

This research analyzed the 14 metadiscourse markers in 20 communication research articles taken from Online Journal of Communication and Media technologies. The findings are revealed as follows:

1. The three metadiscourse markers most frequently used in the introduction parts are: attitudinal marker (adjective), booster (verb), and hedge (modal verb). Shown in Table 1.

2. The three metadiscourse markers most frequently used in the discussion parts are: attitudinal marker (adjective), hedge (modal verb) and booster (verb). Shown in Table 1.

Table 1 Mean and SD of the fourteen metadiscourse markers used in the introduction and discussion section

Metadiscourse Markers	Introduction Sections (n = 20)		Discussion Sections (n = 20)	
	Mean	S.D.	Mean	S.D.
Self-mention	2.88	3.75	3.44	3.67
Attitudinal marker (adverb)	.58	.72	1.67	1.53
Attitudinal marker (adjective)	10.26*	8.99	18.83*	9.28
Attitudinal marker (verb)	.02	.11	1.07	2.92
Attitudinal marker (noun)	.30	.69	.79	1.18
Booster (verb)	5.56**	4.09	9.14***	5.76
Booster (adverb)	.47	.70	1.44	1.66
Booster (adjective)	.69	.79	2.02	2.29
Hedge (modal verb)	3.96***	3.87	11.51**	7.02
Hedge (lexical verb)	.65	.99	3.48	3.52
Hedge (adverb)	2.95	3.06	6.24	3.50
Hedge (adjective)	.55	.766	1.50	1.42
Hedge (noun)	.006	.03	.14	.42
Hedge (phraseological)	.14	.36	.10	.36

3. The five words most frequently used as the attitudinal markers (adjective) are 'important', 'significant', 'high', 'knowledge', 'still' and 'negative'. The five words most frequently used as the booster (verb) are: 'have', 'can', 'found', 'show', 'must' and 'cannot' and the five words most frequently used as the hedge (modal verb) are 'can', 'may', 'will', 'would' and 'should' as shown in Table 2-4.

Table 2 Frequency of the five attitudinal markers (adjective) used both in the introduction section and discussion section

The most frequently used word	Frequency (per 1,000 words)
important	4.6
significant	2.8
high	2.8
knowledge	2.3
still	1.9

Table 3 Frequency of the five boosters (verb) used both in the introduction section and discussion section

The most frequently used word	Frequency (per 1,000 words)
have	15.4
can	7.4
found	3.1
show	1.9
must	1.2

Table 4 Frequency of the five hedge (modal verb) used both in the introduction section and discussion section

The most frequently used word	Frequency (per 1,000 words)
can	7.4
may	6.8
will	4.1
would	3.1
should	2.7

4. There are nine metadiscourse markers which are significant difference among each of them in both introduction and discussion parts of the research articles. They are attitudinal marker (adverb), attitudinal marker (adjective), booster (verb), booster (adverb), booster (adjective), hedge (modal verb), hedge (lexical verb), hedge (adverb) and hedge (adjective) as shown in Table 5.

5. There are five metadiscourse markers that found no significant difference between the uses of each marker in the introduction and discussion parts of the research article. They are self-mention, attitudinal marker (verb), attitudinal marker (noun), hedge (noun) and hedge (phraseology) as shown in Table 5.

Table 5 The differences of metadiscourse markers used in the introduction section and discussion section

Metadiscourse markers	Introduction (n = 20)		Discussion (n = 20)		t	p
	Mean	S.D.	Mean	S.D.		
Attitudinal markers (adverb)	.58	.72	1.67	1.53	.16	.007**
Attitudinal markers (adjective)	10.26	8.98	18.83	9.28	2.01	.005**
Booster (verb)	5.56	4.10	5.56	4.09	.91	.030*
Booster (adverb)	.47	.70	1.44	1.66	.16	.022*
Booster (adjective)	.69	.79	2.02	2.28	.17	.019*
Hedge (modal verb)	3.97	3.87	11.50	7.02	.86	.000***
Hedge (lexical verb)	.66	.99	3.48	3.52	.22	.001***
Hedge (adverb)	2.95	3.06	6.23	3.50	.68	.003**
Hedge (adjective)	.55	.76	1.50	1.41	.17	.012*

6. There are thirteen markers that show relationship with each other. One marker which shows no correlation with others is attitudinal marker as a verb shown in Table 6.

Discussion

The results reveal that the three metadiscourse markers most frequently used in the introduction parts show significant differences in characteristics of stance and engagement model proposed by Hyland (2005) that identifies how the written texts embody interactions between writers and readers. This can imply that most writers try to develop their own style of persuasion. It is congruent with the study of Hyland (2006) who states

Table 6 The correlations of metadiscourse markers used in the introduction section and discussion section

marker	Introduction & discussion sections (N = 40)										
	14	13	12	11	10	9	8	7	6	5	3
1			.337*			.341*			.391*		
2			.428**			.610**	.396**	.410**	.364**	.522**	.449**
3				.453**		.396**			.487**		
5			.388**			.435**					
6				.443**	.387*	.496**	.496**				
7	.436**	.409**	.475**	.392*	.363*	.313*	.855**				
8	.346*	.517**	.534**	.428**	.491**	.420**					
9		.558**	.607**	.477**	.532**						
10		.328*	.573**								
11			.420**								
12		.576**									

Remark: Code of metadiscourse markers

1 = Self-mention *2 = attitudinal marker (adverb),*
3 = attitudinal marker (adjective) *5 = attitudinal marker (noun)*
6 = booster (verb) *7 = booster (adverb)*
8 = booster (adjective) *9 = hedge (modal verb)*
10 = hedge (lexical verb) *11 = hedge (adverb)*
12 = hedge (adjective) *13 = hedge (noun)*
14 = hedge (phraseology)

that while the writers try to control the personal identity, they are presenting and developing their own style of writing. However, each language has its own rhetorical structures that can indirectly enhance the academic writing, for example, the word like "self-mention" was used as central pragmatic feature or to refer to the majority of people such as “us” “our”. It is not only the writer’s construction of a text, but also of a rhetorical style of the writer (Hyland, 2003). This feature was frequently used by the writers in order to project the indirectness of their rhetorical structures and their cautious style when they want to express their opinion" (Scollon & Scollon, 1994).

This research intends to study and observe the use of self-mention words in communication research article. As Harwood (2005) stated the personal pronouns are used as techniques to promote someone’s work. It is believed that the personal pronouns are one of exclusive characteristics to make the writers' significance presence stronger in their studies, to support the new rhetoric under the study, and to emphasize the psychological nature of the ego identity of the writers. As Tang & John (1999) stated the first personal pronoun is not a homogeneous entity, but instead it can help to present some different roles or identities with various degrees of authorial presence. Besides, Scollon & Scollon (1994) also stated that the use of first personal pronouns is mostly unacceptable in the Asian traditional cultures because it is associated with individual rather than collective identity. To publish in the famous journals, it will help to process more self-confidence to share the uniqueness of the study via first or plural personal pronouns and to cross the boundary of culture and nations. Besides, hedge (lexical verb) and hedge (modal verb) like "can" in communication research article was considered to decrease the vagueness and tentativeness of the other modal verbs. The word "may" was marginalized in communication journals not only to express the writers' "due caution, modesty, and humility, and to negotiate diplomatically to the work of colleagues and competitors" (Hyland, 1998b), but also it had précised authorial attributes to first direct the attention of the readers to compare the present study to the literature reviewed in the study. Using this kind of modal intends to show less responsibility of the asserted previous literature and to preserve their face and to make the pleasant truce with other researchers and to avoid any open conflicts. The word "could" was used as the unconfirmed modal verbs. Also, Hyland (1998b) mentioned that "could" was used to hasten the unconfirmed arguments.

Hedge (lexical verb) was also a significant device in communication research articles. It seemed that the writers of communication research articles had a strong trend to improve the vagueness of the claims and strengthen the knowledge structures of the whole research. The writers of communication research articles actually invited the readers and professional researchers to correspond to the vagueness and the unconfirmed arguments or comments of the study more collaboratively.

'Hedge (adverb)' or called 'approximator' as the "institutionalized" language of science (Slager-Meyer, 1994) was significant more in communication journals focusing on the words; "some" and "somehow", "often" and "about". Those words served to clarify the unknown and unavailable attributes of other research and at the same time highlighted the strength of the essential characteristics and constructs of the research. Approximates such as "sort of, entirely, a little bit, roughly and approximately" never appeared in communication journal. The significant difference between the application of hedge (adverb) in communication journals could highlight the vagueness of the literature while indirectly impose their independence from it.

Boosters also were important in writing communication journals and specifically the use of "must and should" was significant. They were also the marginalized application of "no one" and "no" to express the previous literature's lacks. Communication articles seemed to develop a kind of authorial self and power and also call for cooperation and partnership at the same time. It is similar to hedges used for the persuasion and allow writers to show their opinions thorough certainty and marking involvement with the readers and the topic alike" (Hyland, 2005).

Hedges were used for making a balance between full certainty and assertiveness of the claims and their vagueness as the cautious markers of taking less responsibility of the asserted discussions to convince the readers from academia. Sometimes the excessive use of boosters and hedges in just the introduction parts of the communication research articles may lead to inconsistency. It may make the readers confused whether it is the crucial arguments or acceptance while negotiating with the main claims.

"Attitudinal markers" was among the attributes practiced in all articles. The attributes were to express commitment to theoretical and experimental literature while searching the degree of truth in order to generate the genuineness of the research. Over perseverance of these attributes in communication journal could be interpreted as being over dependent to popular statements of the writers as the best engagement attributes with less self-confidence to present one's own texts in at least the introduction parts of the research. Over statements and misuse of influential statements of the writers could express modesty and respectfulness toward them, try to meet the expectations of the skilled readers, and urge the uniqueness of the research, but at the same time may ask about the professional adequacy and capabilities of the writers. Hence, all writers need to rely to an extent on a personal presentation into the text through self-mention and attitudinal markers to invoke an intelligent reader and credible article writers (Hyland, 2005).

This research was conducted according to the set objectives and framework and developed with the research objectives. The metadiscourse markers are one of the exclusion that could illustrate the main problems of the research, research's design, and the types of the instruments (Hyland, 2005). Some journal writings may either neglect the significance of research objectives in building open relationships and interaction with the readers in determining an organized preconception about development process of the claims or might accept the whole responsibility on readers to develop the whole research's tentative hypotheses. Some journal writings may evaluate the procedures and predict the outcomes without posing the questions in qualitative or quantitative investigations.

The metadiscourse markers are essential to bond the interaction of the readers-writers, group work, and negotiation of meaning. Significant differences were examined in different markers namely self-mention, attitudinal markers, boosters, and hedges in the communication research articles. This significance may confuse the new readers to either embed as hedges and boosters or other characteristics that they could express in the academia or develop their own styles. In other words, the writers should practice authorial self and power over readers or indicate their modesty and honesty that neither nullifies other characteristic's influence (Hyland, 2005) nor practice over booster or over hedge using. Though the other option may be convenient, many writers follow the same path of some specific pieces of research article writings as the best stance without substantial instructions. It is necessary to emphasize impressions of these characteristics on the construction of rhetorical understandings of the readers, and to develop an exclusive content and provide it for the research article writers with implied interactional stance that is necessary in promoting the indirect persona of the writers in academia.

Suggestion

1. Suggestion for implementation

The benefits of this study is to provide research article writers with a guideline and how to use the discourse markers in writing the communication research article. From the research findings, metadiscourse markers take a crucial role in writing the communication research article. The researcher would like to suggest for implementation as follows:

1.1 The research article writers should select metadiscourse markers that are appropriate for writing each content and the topic presented, especially the stance of the writer. Even though the finding indicates the metadiscourse markers that should be used in what part of the article, research presentation of each writer is different by the research topic. Hence, the finding could not be used directly. The writers should apply for each content that the writer would like to present to the readers.

1.2 Even though some metadiscourse markers are determined reagrdong to use them, only some of them appeared in this research. In reality there are other metadiscourse markers used in the research article. Hence, the writers should consider when using them for writing the research article.

2. Suggestion for further research

2.1 The further research should consider doing on language in other field of study like mass mediaor communication technology.

2.2 The results of this study should be generalized to the field of communication arts and analyze a larger corpus, and articles written by more writers in wider ranges of journal.

2.3 The same framework used here should be applied for further research to make results more dependable and applicable.

2.4 The further research should consider doing the research on comparison of metadiscourse markers used by Thai researcher and native speaker researcher.

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Students' Ideas Anticipation through Flow of Lesson in Collaborative Lessons Planning for Classroom Using Lesson Study and Open Approach

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Abstract

This study analyzed students' ideas anticipation through a flow of lesson in collaborative planning of a lesson team for a math class using a Lesson Study and Open Approach. The teacher of the classroom used the Open Approach as a teaching approach and the lesson study as an improvement of the teaching approach's qualities. Research methodology relied on a qualitative research by employing a participatory observation in which a researcher was a member of the lesson study team, composed of five members, who collaboratively worked on the steps of the lesson study approach. Thai version of Japanese textbook was used as a principle tool for collaborative planning the lessons. The textbook emphasis on problem situations that connects the students' daily life, as a result, the students could make sense of the problem situations. Research results found that the teacher team solved problem situations inside the textbook, then anticipated the students' ideas through each component of the flow of lesson as follows: (1) considering representations of students' real world to anticipate the students' difficulties, (2) considering semi-concrete aids to anticipate the students' ways of problem solving and (3) considering representations of students' mathematical world to anticipate the students' ideas. The students' ideas focused on mathematics and emphasis on problem solving, the lesson study team, as a result, used the students' ideas to collaboratively design other components of lesson plans for the classroom using Lesson Study and Open Approach.

Introduction

A concept of a new teaching practice relies on a new didactic triangle that changes a definition of learning entirely from a traditional didactic triangle in which components are teacher, student, and content. These components are reflected through a traditional teaching practice; the teacher passes on the contents to the students, and the students just memorize such knowledge. While the components of the new didactic triangle are teaching process, learning process, and thinking process. These components are related to the students' ideas used for accessing the students' learning or thinking processes (Inprasitha, 2017a; 2017b; 2018).

In Thai context, Inprasitha has proposed two

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innovations; Lesson Study and Open Approach (Inprasitha et al. 2003) for changing a paradigm teaching practices of teachers and improving the teaching practices consecutively. The Open Approach emphasizes on individual differences, especially differences in each students' thinking, and is composed of 4 phases: (1) Posing Open-ended Problem, (2) Students' Self-leaning, (3) Whole Class Discussion and Comparison and (4) Summarizing through Connecting Students' Mathematical Ideas Emerged in Classroom. The Lesson Study, besides, emphasizes on improving collaborative working of teachers for improving and developing the Open Approach directly, composed of 3 steps: (1) Collaboratively Design Research Lesson (Plan), (2) Collaboratively Observe Research Lesson (Do) and (3) Collaboratively Reflect on Teaching Practice (See) (Inprasitha, 2011; 2015a; 2015b). These two innovations are incorporated in weekly cycles as illustrated in Figure 1.

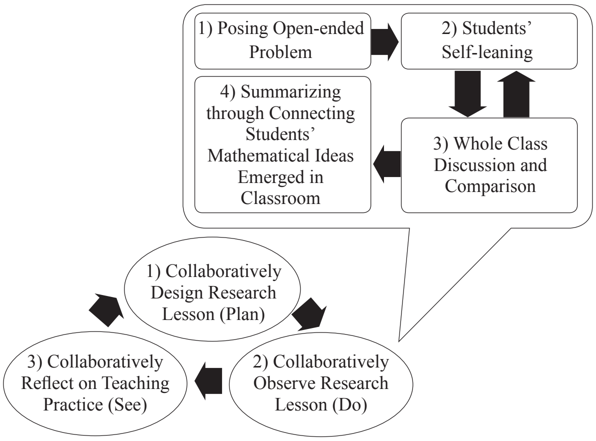

Figure 1 Open Approach Incorporated in Lesson Study (Inprasitha, 2010; 2011)

In the processes of the lesson study, the lesson study team will start with the Collaboratively Design Research Lesson (Plan) (Inprasitha, 2010; 2011). An important point of lesson planning is making notes of what has been designed and will encourage teachers to use their deep and profound thinking (Smith & Stein, 1998). In addition, when the teachers try to anticipate the classroom image, there will be a learning of the teachers through solving problems they have designed. In consequence, the teachers develop abilities to look for patterns, inspect conditions and hypotheses, determine information, and other processes of problem solving (Stein, Grover & Henningsen, 1996).

In this study a classroom using the Lesson Study and Open Approach focused on mathematics where teachers used the Open Approach as a teaching approach and used the Lesson Study as a way to improve the teaching approach (Inprasitha, 2015a). Moreover, the study was conducted in a real classroom context, implementing a Lesson Study which identifed changes for students' learning improvement as well as interchange knowledge and problems with other teachers (Loipha & Inprasitha, 2004). The students, in addition, learned from sharing ideas together in which their own views were derived from problem solving activities. In consequence of a principle of this classroom is accessing the students' ideas from the problem solving. Also, a lesson study team, which was composed of teachers who collaboratively plan, do, and see that encapsulate the steps of the Lesson Study, allowing increase access and learning from the students' ideas in various ways (Inprasitha & Isoda 2011; Inprasitha 2015a). This method of deriving subject matter from students ideas is different from a traditional classroom where the subject matters is pre-determined.

A new teaching method for mathematics has been increasingly called, for as an example a connection between out-of-school mathematics and school mathematics, adaptation of school mathematics in daily life of students, and also adaptation of out-of-school mathematics to make sense about school mathematics (Abreu, 1995; National Council of Teachers of Mathematics [NCTM], 2000; Inprasitha, 2017b). This topic has been mentioned in the 13th International Congress in Mathematical Education (ICME-13) (Gueudet, diSessa & Verschaffel, 2016). As a result, extreme interest of mathematics educators are focused on the connection of out-of-school mathematics and school mathematics as a method to enhance students' ideas in mathematical problem solving.

Even though, there are continual requests about the connection of out-of and in school mathematics, there is nothing obviously in practices for a mathematics' classroom. Therefore, a "Flow of Lesson" has been coined by Inprasitha (2017b), in order to connect students' real world and mathematical world, composed of three components: (1) Representations of real world (2) Semi-concrete aids (3) Representations of mathematical world. As a result, the students' ideas are accessible, and teachers use this tool for working together through the steps of the Lesson Study and Open Approach.

Furthermore, in the mathematics classroom emphasis on the students' ideas as a crucial part of the classroom contain steps for searching the subject matter of the mathematics classroom; (1) find the students' difficulties, (2) collect the students' way of solving those difficulties, and (3) group the ways of problem solving to be the students' ideas. These steps will lead to the subject matter of the mathematics classroom that emphasize on the students' ideas, as illustrated in Figure 2.

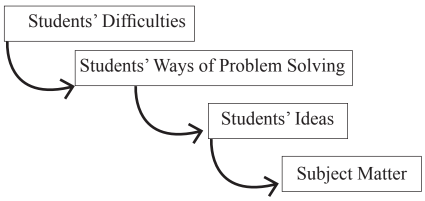

Figure 2 Subject Matters in Mathematics (Inprasitha, 2017a)

In addition, Inprasitha (2017a; 2017b) has noted that the students' ideas anticipation is an important part of the collaborative lesson planning for the classroom using the Lesson Study and Open Approach. Most teachers have questioned how to anticipate the students' ideas or what are a basics for the students' ideas anticipation. These questions have caused trouble in a practical way for the classroom lesson planning.

Objective

This research analyzed how a lesson study team, who collaboratively works in a weekly cycle following the steps of the lesson study approach, anticipate students' ideas by using the flow of lesson in a process of collaborative lesson planning.

Research methodology

Research methodology relied on a qualitative research by employing a participatory observation in which a researcher was a member of a second-grade lesson study team in Lampang province. This school has been participating in the Project of Students' Mathematical Higher Thinking Development in Northeastern of Thailand, Khon Kaen University, and has been using the Lesson Study and the Open Approach since 2009 academic year. The lesson study team was composed of five members,

1) two in-service teachers who worked with the pre-service to use the Lesson Study and Open Approach since 2009 academic year,

2) two pre-service teachers who were fifth-year students in Mathematics Education program, Faculty of Education, Khon Kaen University and worked with in-service teachers in school for a year, and

3) the researcher, who was a researcher assistance for the Center for Research in Mathematics Education, Khon Kaen University from 2009-2015 academic year.

The lesson study team collaboratively planned the lessons, taught and observed the lessons, and reflected about the lessons following the steps of the Lesson Study in weekly cycles. A Thai version of a Japanese textbook was used as a main tool for collaborative planning the lessons (Gakko Tosho, 2005). The textbook emphasized on problem situations in which connecting the students' real world in daily life for supporting students developing meaning from the problem situations and to try to solve the problems by themselves (Inprasitha & Isoda, 2010; 2011). The lesson study team, therefore, designed the problem situations based on the textbook as a guide to connect the students' real world and the mathematical world.

1. Data Collection

Processes of data collection started from 2016 academic year in which the researcher was at the research site to collaboratively observe the students' mathematical learning in the classroom with the in-service teachers and to collaboratively reflect about the students' ideas that emerged in the mathematics classroom. The data gathered in 2017 academic year and collected from the lesson study team while the ongoing processes of the collaborative lessons planning was obtained from the following research materials.

1.1 Thai version of Japanese textbook in Grade 2 of Length (1) learning unit (Inprasitha & Isoda, 2010; 2011)

1.2 Lesson plans of the Length (1) learning unit from 2016 academic year for a basic information of the lesson study team used for planning the lessons from 2017 academic year, has added a topic of the flow of lesson into the structure of the lesson plan (Inprasitha, 2017c),

1.3 Glossary of Mathematics Textbook Grade 2, Volume 1 (Inprasitha & Isoda, 2014)

1.4 Teaching Guidebook of Mathematics Textbook Grade 2, Volume 1 (Inprasitha & Isoda, 2014)

1.5 Audio, Video, and Photograph Recording.

Audio, video and photograph recording were done along 9 consecutive lesson plans in which previous lessons were established and a new 'how to' or 'tool for learning' for the next lessons.

2. Data Analysis

The collected data led to analyzed data; (1) Lesson plans of the Length (1) learning unit, and (2) protocol of the collaborative lessons planning derived from video-audio tapes, and (3) photos of the lesson study team while they were collaborative planning the lessons. The first period of the learning unit "Length (1)" was adapted to indicate how the lesson study team anticipate the students' ideas through components of the flow of lesson by using these two conceptual frameworks, as follows:

2.1 Flow of lesson is the steps of the mathematics lesson that starts from the students' real world and connected to the students' mathematical world (Inprasitha, 2017b). It is composed of three components as follows:

1) Representation of real world is a performance of using figure or other materials for communicating the students' real world experience related to the problem situations,

2) Semi-concrete aid is a performance of using relevant objects or concepts related to the students' ideas emerged from the students' understanding of the problem situations and solving those problems,

3) Representation of mathematical world is a performance of using numbers and symbols for communicating mathematics meaningfully related to the students' ideas.

2.2 Subject Matters in Mathematics Classroom is the steps of accessing the students' ideas that are the subject matter of the mathematics classroom emphasizing on problem solving (Inprasitha, 2017a). It is composed of three steps as follows:

1) Students' difficulty is an authentic students' problem or the real obstacle that the students need to overcome by themselves,

2) Students' way of problem solving is a process used to overcome the students' difficulties,

3) Students' idea is a category of those students' processes of overcoming the students' difficulties.

There was an analytic description used in accord to those conceptual frameworks to interpret the analyzed data, as the following research results will detail.

Results

The lesson study team first solved a problem situation inside the learning unit of the Thai version of Japanese mathematic textbook, as shown in figure 3, by themselves. The lesson study team, after that, were considering classroom flows and decided to form into two flows after the team recognized two problems that the students have to encounter when the students would be shown this problem situation. Then, the team collaboratively anticipated the students' ideas through each component of the flow of lesson, as the following details shows:

Figure 3 Mathematics Textbook (First Period of Length (1) Learning Unit) (Inprasitha & Isoda, 2011)

1. Students' anticipation through the flow of lesson in the first flow of classroom

1.1 Considering representations of students' real world for anticipation of students' difficulties

After the team had solved the problem based on the problem situation in the textbook, the team considered the students' difficulties by using a representation of students' real world to support what the thought the students' difficulties could involve. In this phase, the representation of students' real world is to mold a plasticine snake and to make it as long as possible in order to compare with peers. The students' experiences are snake's characters that they know; long and tapering to a head, as well as knowing how to mold the plasticine. Therefore, the team considered the students' difficulties to be how to mold the plasticine as long as possible to be their own snake and use the snake made from molded plasticine to compare with others, as a following protocol.

Team #4:	So, selecting couple of snakes to compare, and they have to be similar in length because it will be hard to look by the students' eyes
Team #2:	And we have to limit the time also.
Team #3:	If we do not limit the time, the snake made from molded plasticine will be longer. *The students in this classroom love to play with snakes made from molded plasticine.*

1.2 Considering semi-concrete aids for anticipation of students' ways of problem solving

The team considered the students' ways of problem solving by using a semi-concrete aid to support what they think about the students' ways of problem solving. In this phase, the semi-concrete aid in which connecting the students' real world and mathematical world is laying the snake made from molded plasticine to compare with peers in order to figure out which one is longer. Therefore, the team considered the way of solving the students' difficulty is how to compare the snake made from molded plasticine with others, as a following protocol.

Team #5:	*Pencils, pens* are additional materials, right?
Team #3:	*Straws, pencils.*
Team #1:	These will be used as main materials, but we will treat as the additional materials *and functioned as a semi-concrete aid.*
Team #3:	*If we use the pencils, there are both short and long, we will use the pens and straws instead because the pencils are different in length.*

1.3 Considering representations of mathematical world for anticipation of students' ideas

The team considered the students' ideas by using a representation of mathematical world to support what they think the students' ideas could be. In this phase, the representation of mathematical world is a direct comparison (Inprasitha & Isoda, 2014) the snake made from molded plasticine. Therefore, the team considered the students' idea to be the direct comparison, as a following protocol.

Team #1:	Next, *representation of mathematical world, unit or sense making of unit*
Team #3:	This is a mathematical unit, or not?
Team #1:	This is still not the mathematical unit. *There are tiles, pencils, straws as a basic unit of length measurement, using number to represent the length of using basic unit.* *We could separate them. First sentence compare length by using the basic unit. Second sentence, represent the length by using number of those basic unit.*

2. Students' anticipation through the flow of lesson in the second flow of classroom

2.1 Considering representations of students' real world for anticipation of students' difficulties

The team considered the students' difficulties by using a representation of students' real world to support what they think the students' difficulties could be. The representation of students' real world in this phase is the students do not have an idea of how to identify the difference in length. Therefore, the team considered the students' difficulties to be identifying the difference between the snake made from molded plasticizes, as a following protocol.

Team #4:	At last, we will select only the student who has the longer snake made from molded plasticine from each pair, to compare the length.
Team #3:	*So, the students have to find a unit to measure their snake to compare.*
Team #2:	*The problem will be the difference such as the snake is about seven and a little bit, then what materials do the students choose as a measure tool?*

2.2 Considering semi-concrete aids for anticipation of students' ways of problem solving

The team considered the students' ways of problem solving by using a semi-concrete aid to support what they think about the students' ways of problem solving. In this phase, the semi-concrete aids in which connecting the students' real world and mathematical world are materials such as plate, pencil, straw, paper, and tile. Therefore, the team considered the way of solving the students' difficulty is using those materials as an arbitrary unit to quantify the difference of the snake made from molded plasticine, as a following protocol.

Team #1:	During this period we would like to find how to compare the snake's length,i.e., direct comparison and indirect comparison.
Team #4:	*Indirect comparison is using pens to compare, right?*
Team #3:	*Maybe pens, andstraws located in the classroom.*
Team #1:	We will make sense of unit and lastly the students have to identify numbers of a basic unit that are used to make comparisons, like the snake made from molded plasticine is about ten tiles or seven pens

2.3 Considering representations of mathematical world for anticipation of students' ideas

The team considered the students' ideas by using a representation of mathematical world to support what they think about the students' ideas. In this phase, the representation of mathematical world is numbers of the arbitrary unit used to identify the differences of the length of snakes made from molded plasticine. Therefore, the team considered the students' idea to be the numbers of arbitrary unit as a unit to compare length, as a following protocol.

Team #5:	It is based on approximates, for example, *seven pens and a little bit.*
Team #1:	*If one student answers that four pens and another student answers that four pens and a little bit. We have to see which one is longer. The first one is approximated and another one is close to that one, so mark the difference.*
Team #2:	*If the snake of this student like this and mark it, then see another one and mark again.*

The lesson study team had anticipated the students' ideas by using each components of the flow of lesson, as shown in table 1. Furthermore, the students' ideas have been considered as a subject matter of the classroom using the Lesson Study and Open Approach (Inprasitha, 2017a; 2017b), or the classroom in which provides the opportunities for the students to solve the problems by themselves. The lesson study team, as a result, used the anticipated ideas for planning other components of the lesson plan, such as objectives and main ideas of the lesson, problem situation, and materials that would be used for the lesson. In other words, this classroom uses the students' ideas to proceed with lessons (Inprasitha, 2017a; 2017b; 2017c).

Table 1 Relationship between Students' Ideas Anticipation and Flow of Lesson

Steps of students' Ideas Anticipation	**Components of the flow of lesson**		
	Representation of students' real world	**Semi-concrete Aids**	**Representation of Mathematical world**
Considering students' difficulties	✓	✓	✓
Considering students' ways of problem solving	✓	✓	✓
Considering students' ideas	✓	✓	✓

Figure 4 The lesson study team had proposed the student' ideas through each components of the flow of lesson

Discussion

The results correspond with Fang & Lee (2015) who stated that the most difficult part of adaptation in the Lesson Study is the anticipation of the students' responses or the students' ideas that occur when the students encounter a problem situation. Therefore, the lesson study team should utilize each component of the flow of lesson to access the students' difficulties, ways of solving a problem, and ideas, respectively.

In addition, in a process of lesson planning the teachers anticipate students' responses to problem situations through components in the flow of lesson to clarify what they need to ensure student's learning. This research result is in line with Schoenfeld (2010) who explained that "lesson image" is teachers' anticipation about students' interpretation of tasks or activities and what will be connected to those interpretations and methods, strategies, and concepts that the teachers need for the students' learning. In other words, teachers create the challenge for their students and then anticipate the various responses of the students to those tasks or activities.

Moreover, the problem situation is designed close to the students' real world or the students' experiences, is very crucial part of the classroom in order to be comfortable to anticipate the students' ideas and involve the students to the problem situation as much as possible. This is in accord to Nunes, Schliemann & Carraher (1993) noting that in early stages of mathematics learning, should start from things s that are familiar with the students' experiences. This will lead to the meaningful learning for each student in the mathematics classroom.

Finally, the lesson study team are a key success to the process of anticipation of students in the process of lesson planning corresponding to Murata (2011) who described that knowledge of a team working in the lesson study as formed by collaborative questioning and sharing about the students' responses and to distribute what they have observed from the classroom. When the teacher could practice these processes continuously, the teachers will have plenty of chance in discussing about the students' learning.

Concluding Remarks

Research results found that the team anticipated the students' ideas through each component of the flow of lesson as follows:

1. considering representations of the students' real world to anticipate the students' difficulties,

2. considering semi-concrete aids to anticipate the students' ways of problem solving, and

3. considering representations of the students' mathematical world to anticipate the students' ideas, as illustrated in Figure 5.

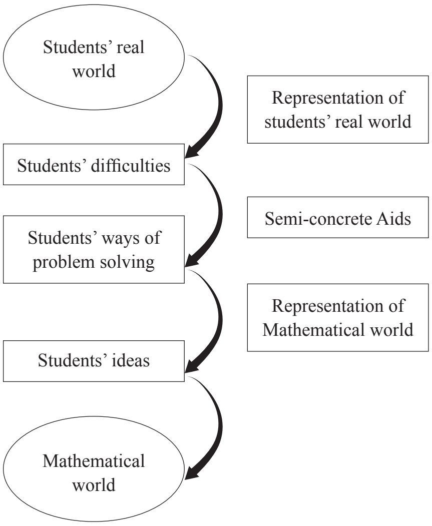

Figure 5 Students' Ideas Anticipation through Flow of Lesson in Collaborative Lessons Planning

Suggestions

In the mathematic classroom where the emphasis is on the students' ideas, the teachers could use the flow of lesson as a tool for accessing the students' ideas in the process of collaboratively planning the lessons, in order to derive the students' ideas from the students' difficulties and ways of problem solving, respectively. For the next study, the problem situation connecting the students' real world with the mathematical world would be interesting, especially the use of flow of lesson to establish the problem situations in the collaborative planning of mathematics lessons.

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Tracing Teachers' Technology Use in Classrooms: Alternative Measurement for Classroom Scale

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Abstract

The exponential speed of new technological developments such as Internet of Things, artificial intelligence and 3-D Printing has resulted in a greater urgency on preparing teachers to use technology in classrooms. This research developed a measurement tool for use of technology in classrooms and then examined the instrument quality by determining the validity and reliability. The Technology Use in Classroom Scale confirmed four dimensions of teachers use of technology, with a specific emphasis on the multidimensional nature of teachers' actual technology usage in instructional purposes: Technology for learning support, Technology in learning activities, Specific technology, and Communication technology. The 66-item instrument that resulted was based on theories and methodologies identified by the literature review. Online survey data collected from 623 K-12 teachers were analyzed using descriptive statistics, reliability and Confirmatory factor analysis (CFA) was conducted and the model fit are discussed. The results are as follows: (1) the Cronbach's alpha reliability estimate of 4 sub-tests ranged from 0.668 to 0.918. (2) In CFA results, the model was consistent with the empirical data. The model validation of the best fitted model. (Chi-square = 33.779, df = 22, p = 0.052, RMSEA = 0.029, CFI = 0.997, TLI = 0.993, SRMR = 0.013). Through the results from CFA, this study shows significantly acceptable model fits and suggests the feasibility of the development of Technology Use in Classroom Scale to a teacher population with relatively good construct validity and internal consistency.

Introduction

The future holds an even higher potential for human development as the full effects of new technologies such as the Internet of Things, artificial intelligence, 3-D Printing, energy storage, and quantum computing unfold (Baller, Dutta & Lanvin, 2016). The literature considering the use of technology in the classrooms is extensive and continues to emerge. Researchers have conducted studies on a variety of educational technologies in greatly different environments and settings. Many research results confirmed that technology-rich activities in classroom offer attributes that enable students to access information more quickly, increase academic achievement, self-regulation, motivation, persistence in learning. These attributes are meaningful for the development of learners' potential

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(Aldunate & Nussbaum, 2013; Cviko, McKenney & Voogt, 2014; Hyun & Davis, 2005; Livingstone, 2012; Tracey & Young, 2007). Likewise, using technology in the classroom helps prepare students to encounter the real world, prepare for future work and equalize opportunities for student in the different areas. (Rakes, Fields & Cox, 2006).

The definition of technology use in classrooms is dynamic, it's been modifying and updating in accordance with the rapidly changing word (Bebell, Russell & O'Dwyer, 2004). The study of related documents from the 90's indicated technology in classroom and defined as using computers in the classroom, which shows the context of technology during that period. (Becker, 1994; Ertmer, 2005). Traditional measures of technology use in classrooms have consisted of counting the numbers and types of devices such as computers, internet connections, etc. (Hogarty, & Kromrey, 2000). Consequently, the use of technology in the classroom refers to modern media such as the internet and email access. After 2000, the implication of using technology in the classroom becomes more reflective and related to teaching pedagogy and the creation of the key word "integration of technology in the classroom". The learning achievements have been adopting to outcome variables such as thinking skills, solving problems skills and useful work. (Drent & Meelissen, 2008). The statistical methodology used to measure technology in the form of latent variables (Bebell, Russell & O'Dwyer, 2004; Mama & Hennessy, 2013; Teo, 2015; Teo & Zhou, 2017).

Currently, the technology use in classrooms variable is divided into 2 categories; directed-observed or indicator and latent variables (Ahadzadeh, Sharif, Ong & Khong, 2015). Therefore, analysis techniques and statistical methodology have been improving to be suitable with the variable attributes such as higher order confirmatory factor analysis model (Chen, 2010). Accordingly, the purposes of this research were to develop an instrument that measures technology use in classrooms and examine the quality of technology usage in classroom scale by determining the validity and reliability for better understanding of how teachers use technology in the classroom and creating alternative measurement.

Objectives

1. To develop a measurement tool of technology use in classrooms.
2. To examine the instrument quality of technology usage in classroom scale by determining the validity and reliability.

Conceptual Framework

Conceptual framework for The Technology Use in Classrooms Scale adopted concept of the Use, Support, and Effect of Instructional Technology Study (USEiT) (Russell, O'Dwyer, Bebell, & Miranda, 2004). Accordingly, the components of technology use in the classrooms summarized into 4 components as follows: Firstly, *Technology for learning support* consists of 3 sub-elements which are (1) lesson preparation (2) monitoring and evaluation (3) teaching resources. Secondly, *Technology in learning activities* consists of 3 sub-elements which are (1) Content delivery (2) Higher-order thinking skills (3) Real world readiness, Thirdly, *specific technology* consists of 2 sub-elements which are (1) Supervising learners and (2) Frequency of use. Finally, *Communication Technology* consists of 3 sub-elements which are (1) Knowledge Sharing, (2) Providing Information (3) Internal and External Communication, as the diagram in figure1.

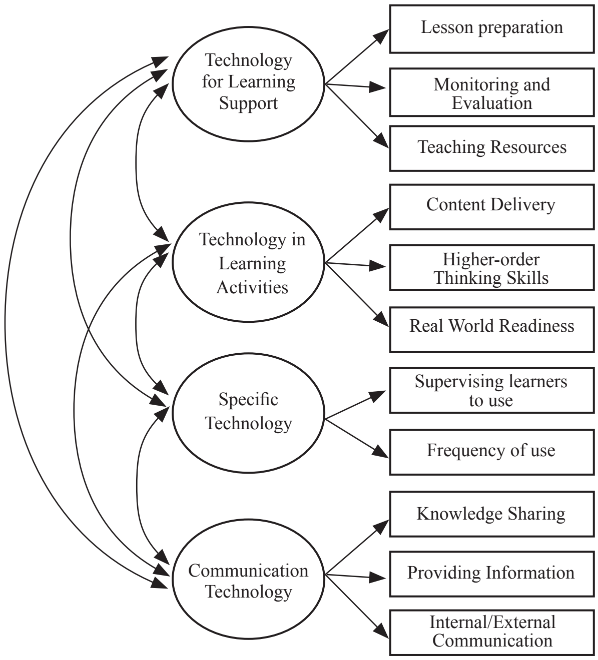


Figure 1 Conceptual Framework

Research methodology

1. Population and Samples

The population consisted of teachers under the Office of the Basic Education Commission. The Optimum sample size computation employed recommendation minimum numbers of Bentler & Chou (1987). The suggested sample sizes are based on ML estimation with multivariate normal data, which suggests 5:1 or 10:1 ratio of cases to free parameters. This CFA study has 4 latent variables and 11 observed variables with a submitted sample size of at least 220 samples. Finally, samples from online data collection consisted of 623 elementary and secondary school teachers in Thailand.

2. Research Instrument

The Technology Use in Classroom Scale assesses the extent to which teachers perceived their technology usage with the students. The quality of this questionnaire was verified by 6 experts to determine the conceptual framework, operational definitions, structure of variables, and language correction.

The structure of the questionnaire consisted of two main sections: Section I Demographics of the teachers such as gender, age, teaching experience, teaching pedagogy and accessibility to technology. Section II Information on using technology in the classroom. This part of the questionnaire comprised of 66 statements that characterized how teachers adopt technology in learning activities that are related to the context of formal educational system. (Table 1). The 66 items measured used a 5-level rating scale from 0-4 where 0 means never use; 1 means rarely to use, 2 means sometimes, 3 means often, 4 means usually.

Table 1 Example of Technology Use in Classroom Scale

No.	Sentences	never <---> usually				
0.	I use digital tools or applications that help students to be a self-directed learner, such as the Online Question Bank system (OQB).	○	○	○	○	○
1.	I use technology to make students aware of global concerns such as bullying, health care, election, global warming.	○	○	○	○	○
2.	I use and guide students to use technology with ethics in all works such as references, copyright information.	○	○	○	○	○
3.	I use digital tools in problem solving activities that are suitable for learners, such as virtual simulation technology, AirVisual App.	○	○	○	○	○
4.	I use the modern tools, allowing students to experiment and explore such as robots, 3D map, navigation map.	○	○	○	○	○
5.	You use technology to teach learners to be aware of personal information in online world.	○	○	○	○	○

The parceling technique applied for aggregating the 5 ordered scale of each set to 4 unobserved variables by factor score coefficient. Therefore, the structural model developed in this research are based on the 4 components of technology use in a classroom: (1) Technology for learning support consists of 3 sub-elements which are (1.1) lesson preparation contains 4 items, (1.2) Monitoring and evaluation contains 4 items, (1.3) Teaching resources contains 5 items; (2) Technology in learning activities consists of 3 sub-elements which are (2.1) Content delivery contains 4 items, (2.2) Higher-order thinking skills contains 4 items, (2.3) Real world readiness contains 5 items; (3) Specific technology consists of 2 sub-elements which are (3.1) Supervising learners and (3.2) Frequency of use, Both elements contains 15 items; and (4) Communication Technology consists of 3 sub-elements which are (4.1) Knowledge Sharing contains 3 items, (4.2) Providing Information contains 3 items and (4.3) Internal/External Communication contains 4 items.

Table 2 The factor score coefficient of the 66 items for parceling technique

lesson preparation		Content delivery		Knowledge Sharing		Frequency of use		Supervising learners	
RE1	.227	EL1	.203	NS1	.316	RE1	.027	UP1	.019
RE2	.318	EL2	.227	NS2	.218	RE2	.043	UP2	.037
RE3	.100	EL3	.215	NS3	.247	RE3	.033	UP3	.017
RE4	.086	DEL4	.127			RE4	.046	UP4	.035
Monitoring & Evaluation		**Higher-order thinking**		**Providing Information**		RE5	.048	UP5	.040
VA1	.152	OT1	.170	NF1	.457	RE6	.054	UP6	.039
VA2	.217	OT2	.361	NF2	.284	RE7	.048	UP7	.076
VA3	.213	OT3	.204	NF3	.118	RE8	.026	UP8	.016
VA4	.179	OT4	.085			RE9	.027	UP9	.021
Teaching resources		**Real world readiness**		**In/Ex Communication**		RE10	.051	UP10	.045
						RE11	.033	UP11	.026
ES1	.046	EA1	.182	OM1	.037	RE12	.057	UP12	.043
ES2	.105	EA2	.222	OM2	.314	RE13	.055	UP13	.044
ES3	.170	EA3	.112	OM3	.364	RE14	.038	UP14	.036
ES4	.166	EA4	.110	OM4	.028	RE15	.048	UP15	.042
ES5	.076	EA5	.206						

The internal consistency reliability of the instrument trial process with 30 teachers applied the formula of The Cronbach's alpha coefficient. The initial results showed that the instrument had the reliability values of the elements between 0.668-0.914. After the researcher applied the questionnaire to the actual sample of 623 teachers, it found the reliability value of the elements between 0.680 - 0.909, as shown in Table 3.

Table 3 The reliability of the 4 components of technology use in classroom

The 4 components of technology use in classroom	Cronbach's alpha coefficient	
	Trial	Actual
Technology for learning		
1. Lesson preparation contains 4 items	.797	.710
2. Monitoring and evaluation contains 4 items	.850	.775
3. Teaching resources contain 5 items	.700	.756
Technology in learning activities		
4. Content delivery contains 4 items	.775	.770
5. Higher-order thinking skills contains 4 items	.819	.785
6. Real world readiness contains 5 items	.829	.779
Specific technology		
7. Supervising learners contains 15 items	.883	.887
8. Frequency of use contains 15 items	.914	.909
Communication Technology		
9. Knowledge Sharing contain 3 items	.759	.715
10. Providing Information contain 3 items	.713	.680
11. Internal/External Communication contains 4 items.	.668	.687

3. Collection of Data

The data derived from in-service teachers was collected in 2019 via online Google forms questionnaire consisting of 66 items. This online survey was revised and tested the face validity by 5 volunteer teachers. Trial version has been tested by 30 in-service teachers.

The total number of samples was 623 in-service teachers of Thailand. An advantage of the online survey was it required participants to answer all questions; it caused no missing data. The participants were 72.2% female and 27.8% male, with an average age of 35 years old. The teachers were mostly from the northeastern region, whereas the proportion of central, south, eastern, capital, and western regions had slight differences. The number of primary teachers were greater than secondary teachers. The educational level of the samples appeared in two levels, undergraduate slightly more than graduate. From the 97 responses indicating ongoing education status showed master's degree (85.6%) and Ph.D. (14.4%). The teacher professional levels were moderately similar as follows: assistant teachers, practitioner teachers, professional teachers, senior professional teachers, and other.

4. Data Analysis

The purposes of this research were to develop a measurement tool of technology use in classrooms and examine the instrument quality by determining the validity and reliability. Therefore, analysis design was separated in two parts, Firstly, Data analysis in the preliminary used descriptive statistics such as mean, standard deviation, distribution coefficient. The reliability of items in each factor was examined by Cronbach's alpha by IBM SPSS Statistics version 22.

Table 4 The characteristics of samples (n = 623)

Characteristics			
Gender		**Teaching grade**	
1. Female	72.2%	1. Primary teachers	6.2%
2. Male	27.8%	2. Secondary teachers	3.8%
Educational Background		**Region**	
1. Undergraduate	6.6%	1. Northeastern	9.9%
2. Graduate	3.4%	2. Central	7.6%
Professional Level		3. South	5.7%
1. Assistant teachers	8.7%	4. Eastern	4.5%
2. Practitioner teachers	7.2%	5. North	3%
3. Professional teachers	1.6%	6. Capital	7.3%
4. Senior professional teachers	.2%	7. Western	2%
5. Other (contract teachers, officer)	.2%	**Age**	**= 35**

Secondly, in order to investigate whether The Technology Use in Classroom Scale confirmed four dimensions of teachers use of technology in classroom, confirmatory factor analysis (CFA) was conducted. Several model fit indices and their criteria were used to examine the goodness-of-fit of the model with the given dataset: Tucker-Lewis Index (TLI), comparative fit index (CFI), Standardized Root Mean Residual (SRMR), and root mean square error of approximation (RMSEA).

Results

The results of the instrument quality examination in the reliability of the experiment with 30 teachers to check the internal consistency reliability, the Cronbach's alpha coefficient showed that the instrument had the reliability of 0.903 with the value of the element between 0.596. - 0.847. After the researcher applied the questionnaire to the actual sample of 623 teachers, it was found that reliability of the whole tool was 0.837, with the value of the element having the reliability between 0.549 - 0.808 as mentioned above.

The 4-composite measurement of teacher technology use in classroom were categorized into 4 latent variables shown. The second approach to measuring teacher technology use involves examining the specific ways in which teachers make use of technology. In this case, multiple measures (i.e., scales) for the specific ways that teachers use technology are constructed from related survey item.

Table 5 The descriptive statistics of the 4 components of technology use in classroom

The 4 components of technology use in classroom	*M*	*SD*	*CV*	*Sk*	*Ku*
Technology for learning					
1. Lesson preparation	0.611	0.121	19.804	-1.117	0.910
2. Monitoring and evaluation	0.316	0.214	67.722	0.237	-0.871
3. Teaching resources	0.299	0.104	34.783	-0.500	-0.427
Technology in learning activities					
4. Content delivery	0.471	0.198	42.038	-0.482	-0.508
5. Higher-order thinking skills	0.435	0.222	51.034	-0.228	-0.774
6. Real world readiness	0.322	0.169	52.484	-0.157	-0.650
Specific technology					
7. Supervising learners	0.062	0.038	61.290	0.710	0.036
8. Frequency of use	0.052	0.029	55.769	0.688	-0.078
Communication Technology					
9. Knowledge Sharing	0.309	0.287	92.880	0.747	-0.381
10. Providing Information	0.786	0.301	38.295	-0.863	0.008
11. Internal/External Communication	0.596	0.165	27.685	-1.426	1.890

The results of the correlation analysis between the eleven variables comprised correlation coefficients were between .275 - .954 with statistical significance ($p<.05$). The results indicated the most significant level of correlation between The Supervising Learners to Use (SU) and Frequency of Use (FU) with the numerous correlation coefficient ($r = .954$, $p<.05$), followed by Higher-order Thinking Skills (HS) significantly correlated with Real-World Readiness (RR) ($r = .705$, $p<.05$). The results show that teachers have the frequency of using technology in the equivalent direction as monitoring students to use technology at an extremely high level. The study also found that teachers use technology to prepare learners to confront the real world in the similar direction by using technology in creating learning activities for students to have higher-order thinking skills.

Table 6 Pearson's correlation coefficient between eleven variables of four components of technology use in classroom

	LP	ME	TE	CD	HS	RR	SU	FU	KS	PI	CO
LP	1										
ME	.385*	1									
TE	.506*	.529*	1								
CD	.490*	.564*	.681*	1							
HS	.455*	.563*	.658*	.698*	1						
RR	.434*	.502*	.620*	.634*	.705*	1					
SU	.331*	.630*	.526*	.564*	.641*	.641*	1				
FU	.354*	.629*	.543*	.574*	.640*	.642*	.954*	1			
KS	.282*	.562*	.508*	.483*	.569*	.620*	.661*	.660*	1		
PI	.382*	.304*	.494*	.475*	.497*	.560*	.419*	.430*	.428*	1	
CO	.397*	.200*	.433*	.358*	.382*	.408*	.323*	.323*	.275*	.564*	1
M	0.611	0.316	0.299	0.471	0.435	0.322	0.062	0.052	0.309	0.786	0.596
S.D.	0.121	0.214	0.104	0.198	0.222	0.169	0.038	0.029	0.287	0.301	0.165

* p< .05 Correlation is significant at the 0.05 level (2-tailed)
LP: Lesson preparation, ME: Monitoring and Evaluation
TE: Teaching Resources
CD: Content Delivery, HS: Higher-order Thinking Skills,
RR: Real-World Readiness,
SU: Supervising learners to use, FU: Frequency of use,
KS: Knowledge Sharing, PI: Providing Information and
CO: Internal/External Communication

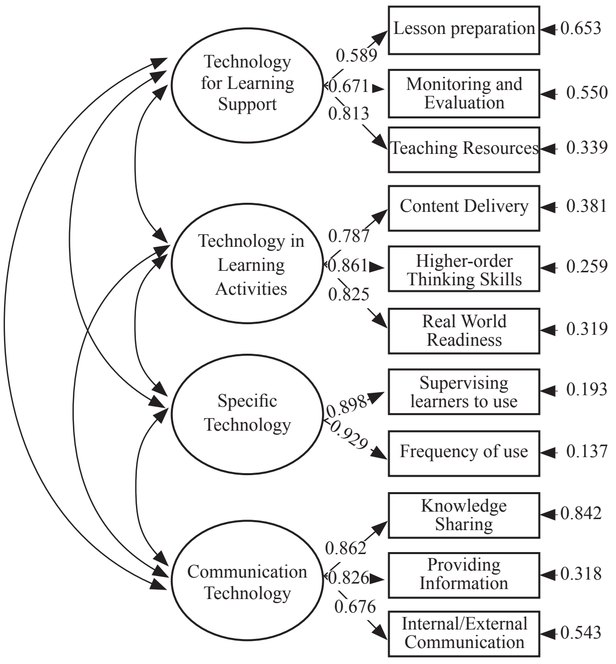
The Bartlett's Test of Sphericity indicated that Chi-square = 5007.104 (df = 55, p = .000) which is significantly different from the zero. This result corresponded to the Kaiser-Meyer- Olkin (KMO) index, which had a value close to 1 (KMO = 0.905) shows the correlation matrix of the observed variable was not an identity matrix. The composition of the standardized factor loadings of each observation variable found positive values from 0.589 to 0.929 ($p<.05$) indicating that these variables were significant indicators of each factor. Details as shown in Table 7 and Figure 2.

Table 7 The factor loadings and factor score coefficients of 11 variables in the model

Variables	factor loadings		t	r	factor score coeffi-cients
	b(SE)	B			
Technology for learning					
1. Lesson preparation	1.000(0.000)	.589	20.329*	.347	0.048
2. Monitoring and evaluation	2.020(0.153)	.671	25.875*	.450	0.048
3. Teaching resources	1.189(0.080)	.813	39.720*	.661	0.149
Technology in learning activities					
4. Content delivery	1.000(0.000)	.787	42.845*	.619	0.116
5. Higher-order thinking skills	1.225(0.053)	.861	61.579*	.741	0.225
6. Real world readiness	0.894(0.045)	.825	51.865*	.681	0.230
Specific technology					
7. Supervising learners	1.438(0.045)	.898	75.369*	.807	0.439
8. Frequency of use	1.000(0.000)	.929	85.422*	.863	0.535
Communication Technology					
9. Knowledge Sharing	1.000(0.000)	.862	17.486*	.158	0.056
10. Providing Information	1.007(0.076)	.826	29.207*	.682	0.452
11. Internal/External Communication	0.452(0.043)	.676	22.439*	.457	0.418
Chi-square = 33.779, df = 22, p = 0.052, RMSEA = 0.029, CFI = 0.997, TLI = 0.993, SRMR = 0.013					

**p < .05

The results of the confirmatory factor analysis (CFA) of Technology Use in Classrooms Model indicates that the model was consistent with empirical data with statistical significance ($p <.05$). four-factor model from the study for CFA is presented in Figure 2. Factor loadings and the model fit indices are as follows: TLI = 0.993, CFI = 0.997, SRMR = 0.013, and RMSEA = 0.029.



(Chi-square = 33.779, *df* = 22, p = 0.052, RMSEA = 0.029, CFI = 0.997, TLI = 0.993, SRMR = 0.013)

Figure 2 Standardized Technology Use in Classrooms Model Results

Discussion

The presented research examines whether (1) to develop a measurement tool of technology use in classrooms and (2) to examine the instrument quality of technology usage in classroom scale by determining the validity and reliability. The main results can be summarized as follows;

Firstly, this study supports the conceptual model proposed by USEiT (Russell, O'Dwyer, Bebell & Miranda, 2004), in The Technology Use in Classroom Scale confirmed four dimensions of teachers use of technology, with a specific emphasis on teachers' actual technology use in instructional purposes: *Dimension one, Technology for learning support* consists of 13 questions. Measures are divided into 4 levels: (1) never (2) some lessons (3) many lessons and (4) almost or every lesson. Examples of questions such as how teachers use technology to prepare a learning plan, how teachers use technology to produce lesson or supporting documents, such as work sheets, knowledge sheets and how teachers use technology to store lesson plans, teaching materials, and media that are created on the computer, such as google drive, drop box, cloud. *Dimension two, Technology in learning activities* consists of 13 questions. Examples of questions such as how teachers use the technology that help students to be a self-directed learner, how teachers use technology to make students aware of global concerns and ethics *Dimension three,* Specific technology consists of 30 questions. Examples of questions such as how teachers use the technology in activities, how teachers use communication and social media application in class and how teachers use interactive digital learning resources such as learning 3D objects or virtual objects such as AR? *Dimension Four,* Communication technology consisting of 10 questions. Examples of questions such as how teachers use technology for sharing information to others and are teachers a member of the online academic community.

Finally, the quality of the internal consistency exposed coefficient values between large sample (n = 623) and small sample size (n = 30) with similar values. Therefore, the model can be applied to different size populations. Moreover, the quality of structural validation examined by confirmatory factor analysis found the empirical data confirms to the hypothesized technology use in classroom conceptual model. In addition, the Knowledge Sharing correlation coefficient in the model was low (r =.158). The questions were about sharing information or explicit knowledge with their colleagues, it's perhaps due to the professional attitude at different workplaces.

In conclusion, the implication of this study was to develop accuracy instrument for gathering technology use in the classrooms data. A few important limitations must be acknowledged. Due to the data collection, only online questionnaire was used in the presented research.

Suggestions

1. The Technology Use in Classroom Scale is useful in collecting short-term and long-term data in order to plan, develop and enhance effective methods of using technology in the classroom. In addition, it is a guideline for evaluating and diagnose teachers' technology use before and after participating in projects or policies as well as to plan, develop and strengthen the use of technology in the classroom performance.

2. The Instruments can be applied to all K-12 subjects. Thus, applying this measure to other target group should consider the suitability of situations, technology, and components.

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Study of Key Factors Affecting Alcohol and Tobacco Abuse Prevention Behavior of Students in Central Thailand

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Abstract

The research aimed to (1) investigate the correlation of causal model affecting alcohol and tobacco abuse prevention behavior in students, (2) examine key factors and empirical data affecting alcohol and tobacco abuse prevention behavior and (3) study key factors affecting alcohol and tobacco abuse prevention behavior in students in Central Thailand. The sample group involved 1,342 students in Central Thailand selected by Multi-Stage Sampling. The research instruments were (1) perceived school policy on alcohol and tobacco abuse prevention behavior questionnaires, (2) alcohol harm awareness questionnaires, (3) tobacco harm awareness questionnaires, (4) alcohol abuse prevention behavior questionnaires and (5) tobacco abuse prevention behavior questionnaires. The data was statistically analyzed using Correlation Coefficient and Causal Model Analysis. The research findings were (1) Correlation Coefficient score equals 0.54 and statistical significance score equals.01, (2) The causal model affecting alcohol and tobacco abuse prevention behavior of students in the Central Thailand-Bangkok and surrounding provinces was consistent with the following empirical data (= 3.35, df = 1, p = .06, GFI =1.00, AGFI = 0.99, CFI = 1.00, RMSEA = 0.04, SRMR = 0.01) and (3) alcohol and tobacco abuse prevention behavior was directly influenced by alcohol and tobacco abuse prevention behavior awareness and perceived school policy on anti-alcohol and anti-tobacco abuse prevention behavior with all variables representing 59% of alcohol and tobacco abuse prevention behavior.

Introduction

Alcohol and tobacco abuse has spread widely among both males and females of all ages throughout Thailand. The challenge tends to increase rapidly. According to plenty of research, Thai males are more likely to encounter alcohol and tobacco abuse than females. Regarding ages, the underage youths, starting at 15 years old, are most likely to become alcoholics, the 2nd ranging stated adults between 25-44 years old, young adults between 20-24 years old, the middle-age between 45-59 years old, the retired-age more than 60 years old, and youths between 15-19 years old tend to became abusers, respectively (National Statistical Office of Thailand, 2018). Moreover, the research related to the

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study of drinking alcohol found that most adolescences who take drugs, mostly live in the central region about 23 percent, followed by Bangkok and the metropolitan area, about 21 percent. These are enable to health care at high risk such as wrangle smacking, getting pregnant or causing others to become pregnant, depression, gambling and gaming addiction and suicidal. Adolescence, generally called the age of curiosity, tend to start drinking and smoking, they also are hesitant to refuse when invited by peers based on the basic need of acceptance and sense of belonging within peer groups. In contrary, alcohol and tobacco abuse has a tremendous impact on health; directly affects immune functioning both physically and mentally, causes physical illnesses, limits consciousness and the capacity to inhibit impulsive behaviors commonly leading to violence, an increase in high risk of sexual behavior problems, gambling and game addiction. These problems crucially cause low self-responsibility, low academic achievement, high exposure to the more complicated social problems such as dropouts, violence and crimes. (Saengow, Wichitkunakorn & Antsanangkornchai, 2016). The 12th National Economic and Social Development Plan (2017-2021) profoundly focuses to develop learners particularly on self-care, self-awareness; healthy consumption, optimal exercises and sports, alcohol and tobacco abuse prevention behavior and mental health for each individuals' health and well-being through multiple learning strategies (The office of National Economic and Social Development Plan, 2017).

Alcohol and tobacco abuse prevention definitely is one of the key factors to strengthen appropriate behavior and mental immune functioning leading to appropriate adaptations or problem solving skills when problems occur such as peer pressure, distortion and misleading behaviors among friends or strangers. Alcohol and tobacco abuse prevention allows an individual to prevent one-self from alcohol and tobacco abuses. If one realizes the disadvantages of alcohol and tobacco, one tends to reject them immediately. (Otrakun, 1985). In fact, alcohol and tobacco abuse prevention behavior generates when an individual has developed the attitudes against alcohol and tobacco abuse, recognizing the hardship of alcohol and tobacco addiction can be a first step in preventing one from trying them. It is a self-realization process in seeking for appropriate solutions rather than problem avoidance by using alcohol and tobacco (Thanmanta, 2004; Wongsawan & Wongsawan, 2008). Besides, the research showed the importance of attitudes for living, a person with positive attitudes tend to understand, accept one's ability, and maintain purposeful living even during difficulties in life, one would never rely on using alcohol and tobacco as a solution. In fact, one would determine to seek other appropriate solutions until the problem was successfully resolved. Another key factor was good relationships, a person with good relationships consider appropriate solutions for each problem without involving alcohol and tobacco. A person with weak relationships lacks the skills to prevent alcohol and tobacco abuse, unconsciously and iseasily deceived by strangers. Alcohol and tobacco abuses creates harmful impacts; weak immune functioning and health, mood swings, anxiety, insomnia, self-exclusion, low self-responsibility for either school or workplace and joblessness (Mahakun, 2008). The person tends to be more exposed to crimes that causes the insecurity of a nation (Thunmanta, 2004). On the other hand, alcohol and tobacco abuse prevention behavior increasingly provides the human resource development, an individual's health and well-being is promoted to improve academic achievement and fulfill one's potential (Somjai, 2017). Due to the related research, stating that tobacco abuse prevention behavior of students in Benjamarajanusorn School was highly supported by the exposure to information resources such as media, teachers, and peers that taught about disadvantages, risks, diseases, health benefits between smokers and non-smokers and attitudes against smoking with the statistical significance at .01 (Ruecha, 2007). Another supporting study on tobacco abuse prevention behavior of students in TriamUdom SuksaNomklao School, also showed the correlation of tobacco abuse prevention behavior, anti-smoking attitudes, and tobacco information among peers with the statistical significance at.05, in agreement with the research focused on college students. The Faculty of Law, Bangkok University identified the key factors; general information on tobacco, anti-smoking attitudes, perceived tobacco smoking causes and consequence, media, anti-smoking policy had influence on tobacco abuse prevention behavior with the statistical significance at .01 (Jongcherdchutrakul, 2009; Ponatong, 2010). Due to alcohol abuse prevention behavior, the study showed that these crucial factors; alcohol abuse disadvantages, anti-alcohol attitudes, supportive families, peers, and schools enhanced alcohol abuse prevention behavior with the statistical significance at .01(Planisong & Kamson, 2016). However, there were more key factors; self-efficacy, family traits, genders, family financial status, general information of alcohol, and peer support enhanced alcohol abuse prevention behavior of college students in private universities with the statistical significance at .01 (Somjai, 2017).

Based on the Theory of Human Development, adolescence rapidly grow physically, emotionally, cognitively and socially called the most significant transition from childhood to adulthood as a path to explore self-identity, basic needs of love, understanding, acceptance and sense of belonging among social groups. They had a vital role to select peers with desirable behaviors in order to live happily and smoothly as they learn and imitate people that surround them. (Katawanich, 2003). Other risk factors affecting college students' health were surveyed and found that 68.70% were drinkers, 31.30 % were non-drinkers, less than 18 year-old youths averagely drink 4 glasses approximately 1-2 hours. Around 40.7% were non-smokers and 59.30% were smokers, 17 year-old youths smoke daily affected by attitudes, thoughts, behaviors and relationship among families and friends (Noimontri & Pipatvanicha, 2015). Regarding the family traits, dysfunctional family with conflict and violence as well as the irresponsible media led to alcohol abuse behaviors in youths with the statistical significance at .01 (Buasorn & Ratchadapunnathikul, 2012). Peer Pressure was one of the most key factors to self-control to prevent tobacco abuse behaviors of middle school students in Suphanburi, as well as school policy, academic achievement, gender, behavior, family and peer support, respectively. Most importantly, alcohol and tobacco abuse would lead to drug abuse. (Voraaroon, Kajornchaikul, Pruthipinyo, Techaboonsermsak & Pitikultang, 2017). Consequently, the team was interested in finding out the correlation of causal model affects on alcohol and tobacco abuse prevention behavior of students in Central Thailand emphasizing on the Theory of Planned Behavior: TPB (Fishbein & Ajzen, 1975) which explains an individual's intention leads to self-control over health. Behavioral intentions are influenced by the attitude about the likelihood that behaviors have the expected outcome and evaluation of risks and benefits of that outcome. The TPB has been widely used successfully to explain the wide range of health behaviors including intentions to drinking, smoking, and health related issues. There are three different types of beliefs, behavioral, normative and control based on the attitudes, behavioral intentions, subjective norms, social norms, perceived power and perceived behavioral control. Social norms has shown to be the key influence to self-control on alcohol and tobacco abuse prevention behavior in youths. (Waranusantikul, 2003).

The research team highly hopes that this study will benefit the organizations and individuals by sharing profound knowledge and authentic implementation for the success of preventing alcohol, tobacco and substance abuse in Thailand.

Objectives

1. Investigate the relationship of causal model affecting alcohol and tobacco abuse prevention behavior in Central Thailand students.
2. Examine the causal model and empirical data affecting alcohol and tobacco abuse prevention behavior in Central Thailand students.
3. Study the causal model affecting alcohol and tobacco abuse prevention behavior in Central Thailand students.

Conceptual Framework

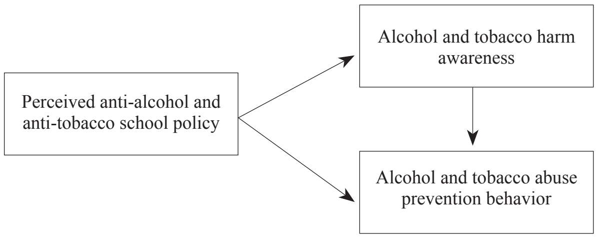


Figure 1 Conceptual framework

Research methodology

1. Research context

The research findings generated profound understanding on the correlation affect of alcohol and tobacco abuse prevention behavior of students in Central Thailand. The authentic knowledge within Thai social context made a tremendous impact on educators such as teachers regarding lesson planning allowed students to develop in-depth understanding on anti-alcohol and anti-tobacco school policy and also increase self-awareness on health impacts and mental immunity for the purpose of decreasing alcohol and tobacco consumption rate in the future. Organizations can support anti-alcohol and anti-tobacco policy in schools and educational sectors. The Ministry of Education can benefit from the evaluation of anti-alcohol and anti-tobacco policy for the further development and improvement of the future policy.

2. Research Framework

2.1 Samples:

The sample involved 1,342 students who studied in the 1st semester in academic year 2018 in Central Thailand. The samples were selected by structural equation modeling (SEM) (Hair et al. 2010) using 10-20 times per item. The questionnaires consist of 63 items, thus the samples aimed to use 20 times per item and finally had 1,342 students in total selected using Multi-Stage Sampling.

2.2 Steps:

Step 1: Purposive Sampling selected from 3 provinces (Bangkok, Nakornpathom and Ayutthaya)

Step 2:Stratified sampling selected based on the categories of school.

Step 3: Stratified sampling selected based on different classes.

2.3 Variables:

1) Exogenous Latent Variable: perceived school policy on anti-alcohol and anti-tobacco abuse prevention behavior.

2) Endogenous Variables as below;

2.1 awareness of harms caused by alcohol and tobacco consisted 2 components; harms caused by alcohol and harms caused by tobacco.

2.2 alcohol and tobacco abuse prevention behavior consisted of 2 components; alcohol abuse prevention behavior and tobacco abuse prevention behavior.

2.4 Instruments

The research instruments were (1) five rating scales for perceived anti-alcohol and anti-tobacco school policy questionnaires, (2) alcohol harm awareness questionnaires, (3) tobacco harm awareness questionnaires, (4) alcohol abuse prevention behavior questionnaires, and (5) tobacco abuse prevention behavior questionnaires. From the questionnaires 2-5, the research team created them using a four-rating scale.

2.5 Process

1. Research and literatures review: the team reviewed related research and literature as the guideline to create content in the questionnaires.

2. Questionnaire creation: the team then created 10 item-perceived anti-alcohol and anti-tobacco school policy questionnaire, 10 item-alcohol harm awareness questionnaire, 10 item-tobacco harm awareness questionnaire, 15 item-alcohol abuse prevention behavior questionnaire, and 15 item-tobacco abuse prevention behavior questionnaire.

3. IOC: all questionnaires were validated by three experts in Psychology, examined the terminologies and received IOC between 0.66-1.00. The research team improved and adjusted the terminologies accordingly.

4. Trials with the identical groups: the trail questionnaires were conducted with the identical group (100 identical samples). The discrimination was analyzed using Item - Total Correlation, scored from 0.20 upward which were accepted in the questionnaires. The Coefficient Cronbach's Alpha was analyzed for the reliability as showen in Table 1.

Table 1 Discrimination (Item - Total Correlation) and reliability (Coefficient Cronbach's Alpha (n = 100)

Questionnaires	Amount of Item	Item - Total Correlation	Coefficient Cronbach's Alpha
Perceived anti-alcohol and anti-tobacco school policy questionnaires	10	0.55-0.84	0.92
Alcohol harm awareness questionnaires	12	0.43-0.79	0.87
Tobacco harm awareness questionnaires	7	0.23-0.73	0.79
Alcohol abuse prevention behavior questionnaires	13	0.28-0.51	0.65
Tobacco abuse prevention behavior questionnaires	14	0.22-0.61	0.79

3. Data Collection

3.1 Permission Letters: The research team submitted permission letters to all stakeholders; Dean of Faculty of Education, Srinakharinwirot University, School Principles of the schools located in Central Thailand.

3.2 Questionnaire trials: The data were collected during June – August, 2018 using the trial questionnaire with the identical groups (100 samples in total) and then adjusted the content of questionnaires to be more appropriate.

3.3 Data collection: The data were continuously collected from 1,700 samples in total in the selected schools located in Central Thailand.

3.4 Questionnaire Completion Examined; the team examined the completion of all questionnaires, found 78.94 % (1,342 questionnaires) were fully completed and ready to be analyzed.

3.5 Causal Model Analysis; the team analyzed both quantitative data and empirical data provided using Causal Model Analysis and examined the key factors affecting alcohol and tobacco abuse prevention behavior of students in Central Thailand.

4. Statistics used

4.1 Pearson Product Moment Correlation: the key factors affecting alcohol and tobacco abuse prevention behavior was analyzed using Pearson Product Moment Correlation.

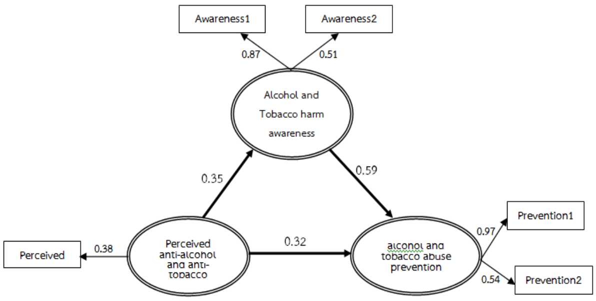
4.2 Structural Equation Modeling (SEM): the causal model affecting alcohol and tobacco abuse prevention behavior was analyzed using Maximum Likelihood (ML), Chi square (x^2), Goodness of Fit Index, Adjusted Goodness of Fit Index, Root Mean Square Error of Approximation and Standard Root Mean Square Residual.

Results

1. The correlation of causal model affecting alcohol and tobacco abuse prevention behavior of students in Central Thailand using Mean, Standard Deviation, and Coefficient Cronbach's Alpha, identified that perceived alcohol and tobacco school policy (POLI) (Mean = 3.61, S.D. = 0.69), Alcohol harm awareness (AWAL) (Mean = 3.41, S.D. = 0.51), Tobacco harm awareness (AWSM) (Mean = 3.23, S.D. = 0.62), alcohol abuse prevention behavior questionnaires (PRAL) (Mean = 3.08, S.D. = 0.53), tobacco abuse prevention behavior questionnaires (PRSM) (Mean = 2.90, S.D. = 0.39).

In term of Coefficient Cronbach's Alpha of causal model affecting alcohol and tobacco abuse prevention behavior of students in Central Thailand, revealed that alcohol and tobacco abuse prevention behavior overall was between 0.17-0.53 with the statistical significance at .01 ($\alpha = .01$), alcohol abuse prevention behavior (PRAL) and tobacco abuse prevention behavior (PRSM) had the highest correlation ($\alpha = 0.54$). On the other hand, perceived anti-alcohol and tobacco school policy (POLI) and alcohol abuse prevention behavior (PRAL) had the least correlation ($\alpha = 0.17$).

2. The correlation of causal model affecting alcohol and tobacco abuse prevention behavior of students in Central Thailand as shown on Figure 2 and Table 2.



x^2 = 3.35, df = 1, p = .06, GFI = 1.00, AGFI = 0.99, CFI = 1.00, RMSEA = 0.04, SRMR = 0.01

Figure 2 Causal model affecting alcohol and tobacco abuse prevention behavior in Central Thailand students

According to Figure 2, the findings demonstrate the consistence of causal model affecting alcohol and tobacco abuse prevention behavior of students in Central Thailand and the empirical data provided, the absolute index shows chi square (x^2 = 3.35), df = 1, p = .06, GFI = 1.00, AGFI = 0.99, RMSEA = 0.04, SRMR = 0.01. In fact, the comparative index shows CFI = 1.00. In contrary, it showed no consistency in chi square. However, all key factors are consistent with the empirical data which allowed to descry be both direct and indirect influences in the model.

Table 2 The correlation of causal model affecting alcohol and tobacco abuse prevention behavior in students in Central Thailand (n = 1,342)

Causal Model	Model of Affect					
	Alcohol and Tobacco Harm Awareness			Alcohol and Tobacco Abuse Prevention Behavior		
	DE	IE	TE	DE	IE	TE
Perceived anti-alcohol and anti-tobacco school policy	0.35**	-	0.35**	0.32**	0.21**	0.53**
Alcohol and Tobacco harm awareness	-	-	-	0.59**	-	0.59**
R^2	0.13			0.59		

*p<.01

According to Table 2, the findings Influence coefficient of causal model affecting alcohol and tobacco abuse prevention behavior of students in Central Thailand states that alcohol and tobacco abuse prevention behavior was directly influenced by alcohol and tobacco harm awareness with the influence coefficient (IC = 0.59), directly affected by perceived anti-alcohol and anti-tobacco school policy with the influence coefficient (IC = 0.32), and indirectly affected by perceived anti-alcohol and tobacco school policy with the influence coefficient

(IC = 0.21).

Causal model affecting alcohol and tobacco abuse prevention behavior was influenced by perceived anti-alcohol and tobacco school policy with the influence coefficient (IC = 0.35).

Forecast Correlation Coefficient shows 59% of alcohol and tobacco harm awareness influence of alcohol and tobacco abuse prevention behavior ($R^2 = 0.59$), and 13 % of perceived anti-alcohol and anti-tobacco school policy ($R^2 = 0.13$).

Discussion

1. The study shows the correlation of causal model affecting alcohol and tobacco abuse prevention behavior of students in Central Thailand. The findings of alcohol abuse prevention behavior (PRAL) and tobacco abuse prevention behavior (PRSM) ($\alpha = 0.54$) show that students were aware that alcohol and tobacco would harm their health. In fact, the family support, information resources, schooling and learning experience empower students in preventing alcohol and tobacco abuse in accordance with the study supporting alcohol and tobacco abuse prevention behavior definitely is one of the key factors to strengthen mental immune functioning leading to appropriate adaptation or problem solving skills when problem occurs; peer pressure, distortion and misleading behaviors among friends or strangers. This allows an individual to prevent alcohol and tobacco abuse. If one realizes the disadvantages of alcohol and tobacco abuse, one tends to reject them immediately (Otrakun, 1985).

2. The results demonstrates the causal model affects alcohol and tobacco abuse prevention behavior of students in Central Thailand, in agreement with the Theory of Planned Behavior: TPB (Fishbein & Ajzen, 1975) that emphasizes an individual's intention to have self-control over health. Behavioral intentions are influenced by the attitude shows the likelihood that behaviors have the expected outcome and evaluates either risks or benefits of that outcome. TPB has been widely used successfully to describe the wide range of health behaviors including intentions to drinking alcohol, smoking, and health in general. There are three different types of beliefs, behavioral, normative and control based on the attitudes, behavioral intentions, subjective norms, social norms, perceived power and perceived behavioral control. Social norms is shown to be the key influence to self-control on alcohol and tobacco abuse prevention behavior in youths. (Waranusantikul, 2003). While, Social Learning Theory based on Behavioral Theory describes about human development for adolescences, who are rapidly changing physically, emotionally, cognitively and socially is called the most significant transition from childhood to adulthood as a path to self-identity, basic needs of love, understanding, acceptance and sense of belonging among social groups. Humans basically learn from the social interactions especially parents, siblings, teachers, public figures, or other media as their role models. However, they are also in control of their own learning, imitating and expressing their behaviors appropriately (Katawanich, 2003; Aimsupasit, 2013). Moreover, the Health Belief Model Theory describes the nature of human interactions as the perceived information through surrounding people and media. Despite the fact that smoking, drinking alcohol leads to social acceptance and sense of belonging, an individual may perceive them as harmful behaviors leading to health risks, financial concerns and unexpected accidents. One will determine to avoid alcohol and tobacco and prevent themselves from these sorts of abuses due to Health Belief Model (Kanjanawong, 2008).

The findings indicate that alcohol and tobacco harm awareness affecting alcohol and tobacco abuse prevention behavior (Influence Coefficient = 0.59). In accordance to the empirical datarevealed the effects of school campaigns and learning experiences within the classroom focusing on alcohol and tobacco harms and disadvantages, for instance, International Day Against Drug Abuse and Illicit Trafficking, Scout camps and Red Cross camps, Life Skill camps, etc. These activities allowed students to learn and reflect on the negative impactsof alcohol and tobaccoabuse, thus they were able to fully develop awareness, and alcohol and tobacco abuse prevention behavior. Alcohol and tobacco abuse prevention behavior was also supported by providing information of alcohol and tobacco, preventive attitudes, media, families and peers. Ruecha (2007) is in agreement with the findings shown with a coherent results of alcohol abuse prevention behavior (α =.01). Although, perceived alcohol and tobacco had the least influence (Influence Coefficient = 0.32) (Somjai, 2017). Recently, the report states that if the educational sectors promote anti-alcohol and tobacco policy, students would potentially be cultivated on disciplined due to alcohol and tobacco regulations and policies within the school. (The Office of the Permanent Secretary, Ministry of Education; 2017) Government played a significant role on launching the Anti-smoking campaign leading to the development of tobacco abuse prevention behavior (Ponatong, 2010). School support also allows students to develop alcohol abuse prevention behavior (Planisong & Kamson, 2016) In addition, perceived anti-tobacco regulation directly affects self-control

Suggestions

1. Suggestion for implications

Regarding the findings, alcohol and tobacco abuse prevention behavior was influenced by perceived alcohol and tobacco harm awareness and perceived anti-alcohol and tobacco school policy, respectively. It is suggested that further research may investigate the risk of alcohol and tobacco and inform students on the negative impacts through various media. In terms of skills, schools may provide workshops on compromise skills and 'say no' to alcohol and tobacco.

2. Suggestion for further studies

2.1 Further research may investigate and develop the group counseling interventions, workshops, and learning experiences enhancing alcohol and tobacco abuse prevention behavior.

2.2 Further research may examine the reliability of the causal model affecting alcohol and tobacco abuse prevention behavior using multiple groups including genders, educational background, school categories.

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Thailand as a Tourist Destination for Nightlife: Comparison of Asian and Western Tourists' Attitudes

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Abstract

This study aimed to examine attitudes towards nightlife in Thailand between Western and Asian tourists. Thus, the objectives were defines as:

1. To investigate the push and pull factors for tourists to visit Thailand for the nightlife and to understand how these likely differ between Western and Asian tourists.

2. To explore the influence of tourists' attitudes from destination image perception to Thailand as a destination for nightlife on tourists' overall satisfaction, intention to return, and intention to recommend Thailand to others

The study used Mixed Method Approach; Qualitative and Quantitative approaches to survey and to interview the factors influencing tourists who experience Thailand nightlife. Select the sampling group from the 300 tourists by Accidental Sampling. Then, divide into Western and Asian as the research population. The area of the study was specifically selected to be the nightlife in Bangkok. The results demonstrate that the tourists attain a high-level satisfaction with the experiences of nightlife in Thailand. All push and pull factors were considered to be important in motivating and attracting them to visit nightlife in Thailand. This study confirms that the importance of destination decision process is on Information Search / Evaluation and Decision Platform, which allowed all related parties to exploit the marketing campaign planning. It is suggested that the Thai government and all related parties launch marketing communication and promotion to all countries in the same way.

Introduction

Tourism is one of the largest industries in the world, and is very important to the Thai economy. The most recent figures indicate Thailand recorded 38.27 million foreign visitors in 2018, with revenue overwhelming expectations and expected to reach 41 million in 2019 (Tourism Authority of Thailand, 2017). Also, the Tourism Authority of Thailand (2017) reveals that the tourist industry earned 2.01 trillion Baths in 2018, an increase of 10 percent from 2017. The Tourism Authority of Thailand's estimation on foreign and

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domestic tourists showed tourism revenue for all of 2019 may reach 2.20 trillion Baths. In 2018, approximate 10.4 percent of Thailand's GDP is recorded to be contributed by tourism industry (WTTC, 2019). The industry's direct contribution is expected to rise to 11.7 percent of Thailand's GDP by 2025 (WTTC, 2019).

Most visitors come from other ASEAN countries, East Asia (primarily China) and Europe (The Association of Thai Travel Agents, 2019). In 2014, ASEAN visitors accounted for about 74 percent with a contribution to GDP, the country economy will be in good shape and the nation is moving forward which implies that there is a development in the standard of living of the people in the country. Consequently, people have higher income which leads to higher spending on a variety of goods and services. Stated differently, it involves the wealth of its citizens. An attempt to increase GDP through the tourism industry, thus, is believed to help not only the country economy, but it also helps increase people's prosperity in the country at the same time. In order to attract tourists to the country, with an intention of improving the country GDP, it is necessary for the country to have good selling points. It could be wonderful landscape, excellent services, or interesting activities, for example. in Thailand, most of tourists visit the country with few common purposes including beautiful beaches, affordable expenses, great services, delicious food, and a variety of activities including exceptional nightlife experience.

"Thailand's nightlife is legendary" This statement is claimed to be accurate, especially for red-light districts. (Bangkok.com, 2019) Thailand is one of the most exciting places on earth for entertainment and nightlife, with many exceptional nightlife venues. Many tourists decide to visit Thailand for a party at night or nightlife experience. Bangkok, Pattaya, Phuket and many famous islands, such as Koh Phangan, are those famous places that one party travellers from all over the world go back. However, the party life is not the only activity that Thailand presents to both domestic and foreign travels. Thailand also offers night market, night food street experience, night mall, night shows, night zoo, night theatre, night dive, cruise, or even watching fireflies on board a longtail boat, for instance. One of the most recognized nightlife activities over the last few years is night markets. It is one of the easiest and most entertaining ways of getting up familiar and personal with Thai local life. From its popularity, the night market in Thailand has been spread out in many areas in Bangkok and other provinces with more varieties of products and foods available. It has been said that "after dark shopping opportunities mean incredible bargains in the moonlight". The famous night markets among tourists in Bangkok include Asiatique, Chatuchak Friday night market, Khaosan, Patpong night market, and Silom road walking the street, for example

Nightlife has been widely used to be an important tool to improve economy growth by expanding nightlife entertainment. In order to gain benefits from the nightlife tourism industry, it is important for the country and related parties to have an effective branding. The reason to visit particular destination for nightlife varies among individuals and the culture difference has been claimed to be one important factor. Therefore, the main objective of this research is to relate Push and Pull factors to the satisfaction, intention to revisit, and intention to recommend which affecting decision to visit Thailand as a tourist's destination for nightlife, as well as theory of planned behavior have been applied in this study as they have been considered to encourage tourists travel to Thailand.

Objectives

The main research aim is to investigate Western and Asian tourists' attitudes to Thailand as a destination for nightlife.

The objectives of the present study were as follows:

1. To investigate the push and pull factors for tourists to visit Thailand for the nightlife and to understand how these likely differ between Western and Asian tourists.

2. To explore the influence of tourists' attitudes from destination image perception to Thailand as a destination for nightlife on tourists' overall satisfaction, intention to return, and intention to recommend Thailand to others

Conceptual Framework

As this study focused to find out the effectiveness of push and pull factors on Thailand nightlife destination, the literature review on push and pull factors had to be clarified together with the tourist' behavior on decision making process as described in the following sections.

1. Push and pull factors

Push factors are internal motivators that encourage individuals to engage in tourism (Heitmann, 2011; Hsu & Huang, 2008) These internal motivators commonly allow the tourist to meet specific needs, such as physical, emotional, cultural, interpersonal, intellectual, or status and prestige needs (Heitmann, 2011). For example, an individual may be curious about a destination (intellectual needs), want to visit friends and family (emotional and interpersonal needs), or want to brag about their holiday (status and prestige). Heitmann (2011) notes that push factors encourage tourists to go places, but do not specify locations.

Pull factors are characteristics of the location itself, which appeal to tourists with specific internal motivations and needs (Heitmann, 2011; Hsu & Huang, 2008) Pull factors typically relate to climate, safety, tourism offerings (such as tourist attractions) and culture. An attractive nightlife is considered as one of the pull factors for a country. Pull factors in effect specify to tourists what the location can offer them and what needs it can meet. Tourists may decide on locations following some research or rely on their existing knowledge of pull factors of a destination to determine which location they will visit (Heitmann, 2011). While some pull factors (like beaches and scenery) are common, others (such as specific cultural attractions) are relatively rare (Page, 2014). Similarly, some pull factors are more sought after than others, or may appeal to different types of tourists (Page, 2014).

2. Theory of Planned Behavior (TPB)

The theory of decision making used in this research is the Theory of Planned Behavior (TPB). The TPB was proposed by Ajzen (1991) to extend and improve the predictive capability. It is an attitude-behavioral model of human action, which proposes that various types of perceptions about a proposed action influence the individual's intention to engage in an action (Ajzen, 1991).

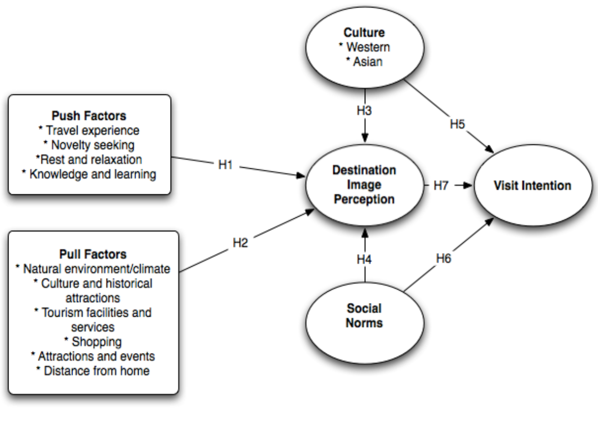

Figure 1 Theoretical framework of the study (Ajzen, 1991; 2005)

Figure 1 illustrates push and pull factors that influence destination image perception directly. Whereas destination image perception always combines with culture and social norms which can generate tourist' visiting intention. In part of culture, Correia, A., Kozak, M., & Ferradeira, J. (2011) mentions that cultural factors like,individualism, and long-term orientation affected attitudes and beliefs about Lisbon's brand, price and quality as a tourism destination, as well as Bertoli,J. (2013) which found that the individuals from different countries may be targets of marketing campaigns that changes their destination image or increases knowledge. While social norms related to the environment and nature have been shown to influence tourist attitudes of Thailand as a tourism destination Chubchuwong, Beise-Zee, & Speece (2015), which Kim, Im & Kim (2015) mention that social norms related to religious practice influenced attitudes of neighboring countries, including Korea, Japan, and China, as a tourist location.

These two theories were core theory to this study which brought to research conceptual framework as follows:

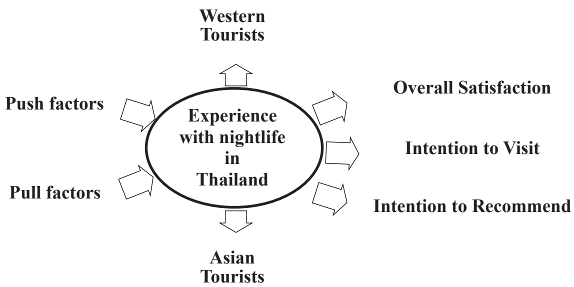

Figure 2 Conceptual Framework

From the research questions, the research conceptual framework is demonstrated in Figure 1 Push and pull factors influence tourists' attitude and form destination image perception towards nightlife in Thailand which may be or may be not different between Western and Asian tourists. Consequently, the tourists' attitude and destination image perception can lead to overall satisfaction, as well as intention to visit and to recommend a particular country to others. If the tourists' attitude and destination image perception appear to be positive, satisfaction rate should be high and Thailand is considered to generate more income and expand more target group from the recommendation.

Research methodology

The study used mixed-method approach by combining qualitative and quantitative methods that were conducted with international tourists who have visited Thailand. The 300 questionnaire surveys were distributed and 20 interviews were conducted at nightlife areas in Bangkok, Thailand.

Table 1 Summary of Methodology

Variables	Research Instrument	Population	Data Collection Method	Analysis Method
Differences of push and pull factors influence tourists in the context of nightlife in Thailand.	Survey questionnaire and Interview questions	Survey questionnaires of 300 tourists Interview 10 Western and 10 Asian tourists	Accidental Sampling in Bangkok Nightlife area	T-Test Thematic Analysis
Differences of destination image perception in the context of nightlife in Thailand.	Survey questionnaire and Interview questions	Survey questionnaires of 300 tourists Interview 10 Western and 10 Asian tourists	Accidental Sampling in Bangkok Nightlife area	T-Test Thematic Analysis

The survey has been conducted at nightlife areas in Bangkok, Thailand. There are Silom, Asoke, Sukhumvit and Ekkamai area. Data collection period is during April to May 2018. There has been no limitation on nationality. However, there has been a screening question in order to filter travelers who are not tourists who travel to Thailand. The study has been performed at different pubs and clubs, during day and night times to reduce bias.

Determining an appropriate sample size for SEM techniques is a difficult problem, considering the issues of power and sampling bias (Wolf, Harrington, Clark & Miller 2013). In fact, as Wolf, Harrington, Clark & Miller 2013 (2013) reports, there is no single method for this determination. In addition, the whole population size of this group is uncertain as a number of tourists keep changing depending on many factors. However, according to the Tourism Authority of Thailand, Thailand recorded 32.59 million foreign visitors in 2016, with revenue defeating estimations and expected to exceed previous forecasts by increasing 10 percent or more in 2017 (the Tourism Authority of Thailand, 2017). A priori sample size calculation, assuming a small effects size (0.1), a moderate statistical power (0.8), and an assumption of 12 observed and five latent variables, yielded a sample size of n should be 463 participants (Soper, 2015). However, due to time constraint, the researcher intended to distribute two-third of the calculated sample size which is approximately 300 copies of the questionnaire to the respondents.

In addition, for interview, as pointed out by Marshall (1996), an appropriate sample size for qualitative research is a number that appropriately answers the research questions. The population is as same as questionnaire survey which is international tourists who have visited Thailand. The researcher interviewed 20 respondents, 10 Western tourists and 10 Asian tourists, to obtain more detailed information. It is considered to be sensible in answering the research objectives. The research was conducted at nightlife areas in Bangkok, Thailand which are Silom, Asoke, Sukhumvit and Ekkamai areas during April and May 2018. The interviewees were initially asked if they have time to respond to the interview questions which last approximately 15-20 minutes. The interview was conducted in a café in an area of nightlife with tape recording. The interviews have been run by asking pre-designed interview questions.

Data analysis begins with descriptive analysis. The Statistical Package for the Social Science (SPSS) has been used to analyze quantitative data from questionnaire and construct a research conclusion. Descriptive analysis provides basic information about the respondent profile and general trends in responses. Statistics have been calculated as appropriate for item types. Descriptive statistics include mean and standard deviation for Likert scale variables, as well as frequency distributions (and appropriate graphics) for categorical variables.

Results

1. Quantitative

Table 2 Rating Push Factors for Thailand as Tourist Destination

Push Factors		Mean	Std. Deviation
1. Travel experience	a. To learn something new and interesting about nightlife	3.62	1.146
	b. To visit a nightlife place in a foreign country that I have not visited before	3.31	1.116
	c. To fulfill my dream of experiencing nightlife in a foreign country	3.47	1.217
	d. To meet new people and socialize with local community from experience in nightlife in a foreign country	3.97	1.088
		3.59	**0.956**
2. Novelty seeking	a. To experience new and different lifestyles about nightlife in a foreign country	3.38	1.220
	b. To explore cultural resources in an area of nightlife	3.66	1.204
	c. To participate in new nightlife activities	3.80	1.104
		3.61	**1.000**
3. Rest and relaxation	a. To relax physically from nightlife in a foreign country	3.81	.973
	b. To relax spiritually from nightlife in a foreign country	3.73	.951
	c. To find thrills and excitement from nightlife in a foreign country	3.76	1.071
		3.77	**0.887**

Table 2 Continued

Rating Push Factors for Thailand as Tourist Destination		Mean	Std. Deviation
4. Knowledge and learning	a. To see how people of different cultures have for their nightlife	3.79	.972
	b. To increase knowledge about nightlife in a foreign destination	3.79	.960
	c. To exchange custom and traditions about nightlife	3.84	1.011
		3.81	**0.855**

Table 2 presents the ratings for each push factors for Thailand as a tourist destination. In comparison, the majority of the respondents agreed that all the push factors motivated them to visit Thailand, including travel experience (3.59), novelty seeking (3.61), rest and relaxation (3.77) and knowledge and learning (3.81).

Comprehensively, the respondents agreed that almost all the statements related to travel experience factors that motivated the respondents to visit Thailand, which were to learn something new and interesting about nightlife (3.62), to fulfill their dream of experiencing nightlife in a foreign country (3.47) and to meet new people and socialize with the local community as part of the nightlife experience in a foreign country (3.97). However, one exception is that the respondents were uncertain if they were motivated to visit Thailand just in order to visit a nightlife place in a foreign country that they had not visited before (3.31). For novelty seeking, nearly all the factors motivated the respondents to visit Thailand, including to explore the cultural resources in an area of nightlife (3.66) and to participate in new nightlife activities (3.80). Though, the respondents thought that they were not motivated to visit Thailand to experience new and different lifestyles related to the nightlife in a foreign country (3.38). In addition, the respondents agreed that all the rest and relaxation factors motivated them to visit Thailand, including to physically relax while experiencing nightlife in a foreign country (3.81), to spiritually relax while experiencing nightlife in a foreign country (3.73) and to find thrills and excitement in the nightlife in a foreign country (3.76). Last, of all, all the respondents agreed that the knowledge and learning factors motivated them to visit Thailand, including seeing how people of different cultures enjoy their nightlife (3.79), to increase their knowledge about nightlife in a foreign destination (3.79) and to exchanges custom and traditions through nightlife (3.84).

In terms of the standard deviation (SD), almost all the values were more than 1, which implied that the respondents had different opinions about the importance of the push factors. However, the exceptions were to physically relax while experiencing nightlife in a foreign country, to spiritually relax while experiencing nightlife in a foreign country, to see how people of different cultures enjoy their nightlife and to increase knowledge about nightlife in a foreign destination, for which the standard deviations were less than 1; This can imply that the respondents had similar opinions about those statements.

Table 3 Rating Pull Factors for Thailand as Tourist Destination

	Pull Factors	Mean	Std. Deviation
1. Natural environment	a. Nice Weather/Climate during the night	3.23	1.147
	b. Interesting landscape for nightlife	3.77	1.008
	c. Unpolluted natural environment for nightlife experience	3.71	1.082
		3.57	**0.756**
2. Culture and historical attraction	a. Culture and Traditions about nightlife	3.61	1.209
	b. Arts about nightlife	3.55	1.060
	c. Charming traditional nightlife place i. e. traditional Thai-style pub	3.49	1.184
		3.55	**0.984**
3. Tourism facilities and services	a. Safe Destination for nightlife	3.63	1.166
	b. Affordable Tourist Destination for nightlife	3.67	1.157
	c. Value of Money for nightlife	3.91	1.108
		3.73	**0.983**
4. Attractions and events	a. Special Festivals and Events for nightlife	3.72	0.993
	b. Special Shows/Movies/Plays/Concert	3.69	0.904
	c. Special Nightlife place i. e. Branded club	3.34	1.047
		3.58	**0.797**

Table 3 gives the rating for each pull factor for Thailand as a tourist destination. In comparison, the majority of the respondents agreed that all the pull factors attracted them to visit Thailand, including the natural environment (3.57), culture and historical attractions (3.55), tourism facilities and services (3.73), and attractions and events (3.58), and were thus important factors. The highest important pull factor was tourism facilities and services.

Comprehensively, the respondents agreed that almost all the statements related to natural environment factors attracted them to visit Thailand, including interesting landscape for nightlife (3.77) and unpolluted natural environment for nightlife experience (3.71). However, one exception is that the respondents were uncertain if the nice weather/climate during the night attracted them to visit Thailand for nightlife activity (3.23). For culture and historic attractions, all the factors attracted the respondents to visit Thailand, including culture and traditions in nightlife (3.61), arts in nightlife (3.55), and charming traditional nightlife places, such as traditional Thai-style pubs (3.49). Besides, the respondents agreed that all the tourism facilities and services factors attracted them to visit Thailand for nightlife, including it being a safe destination for nightlife (3.63), an affordable tourist destination for nightlife (3.67), and value for money for nightlife (3.91). Last, of all, almost all the attractions and events factors were agreed by the respondents as having influenced them to visit Thailand for the nightlife, including special festivals and events for nightlife (3.72) and special shows/movies/plays/concerts (3.69). One exception was the special nightlife places, such as branded clubs (3.34), which the respondents were uncertain if they played a part in attracting them to visit Thailand for the nightlife.

In terms of the standard deviation (SD), most values were more than 1, which implied that the respondents had a different opinion about the importance of the push factors. However, the exceptions were special festivals and events for nightlife and special shows/movies/plays/concerts, for which the standard deviations were less than 1; This can imply that the respondents had similar opinions of those factors.

Table 4 Independent T-Test – Importance of Push and Pull Factors

Independent T-Test – Importance of Push and Pull Factors	Sig. (2-tailed)
1. Travel experience	0.974
2. Novelty seeking	0.004
3. Rest and relaxation	0.006
4. Knowledge and learning	0.313
Push Factors	0.064
1. Natural environment	0.000
2. Culture and historical attraction	0.000
3. Tourism facilities and services	0.328
4. Attraction and events	0.387
Pull Factors	0.000

Tables 4 present the scores for the Independent T-Tests of the importance of the push and pull factors. For a push factor, the Sig. (2-tailed) is 0.064 which is more than 0.05, it can imply that there is no significant difference in the push factor's ability to motivate Asian and Western tourists in the context of nightlife in Thailand. In detail, Asian and Western tourists were motivated by their travel experience and knowledge and learning factors in the same way, for which the Sig. (2-tailed) values were more than 0.05. However, an exception was those with Sig. (2-tailed) values less than 0.05, which include novelty-seeking and rest and relaxation factors. It can be said that Asian and Western tourists were motivated by novelty-seeking and rest and relaxation factors differently. On the other hand, for a pull factor, the Sig. (2-tailed) is 0.000 which is less than 0.05, it can imply that there is significant difference in the pull factor's ability to motivate Asian and Western tourists in the context of nightlife in Thailand. In detail, Asian and Western tourists were motivated by their natural environment and culture and historical attraction factors differently, for which the Sig. (2-tailed) values were less than 0.05. However, an exception was those with Sig. (2-tailed) values more than 0.05, which include tourism facilities and services and attraction and events factors. It can be said that Asian and Western tourists were motivated by tourism facilities and services and attraction and events factors in the same way.

Therefore, for the third hypothesis, it can be imply that Asian and Western tourists were motivated by their travel experience, knowledge and learning, tourism facilities and services, and attraction and events factors in the same way, whereas they were motivated by their novelty-seeking, rest and relaxation natural environment, and culture and historical attraction factors differently

In addition, further analysis of the importance of push factors has been developed to understand the difference or similarity between Western and Asian tourists. Table 4 shows the importance of push factors by nationality. As there is no significant difference in the push factor's ability to motivate Asian and Western tourists in the context of nightlife in Thailand, the mean value between 3.41 and 4.20 of all push factors for both Western and Asian tourists are in the important level. However, small divergences were found from novelty seeking, as well as rest and relaxation, which is in line with Sig. (2-tailed) less than 0.05. Both were considered to be more important among Asian than Western tourists.

Table 5 Importance of Push Factors by Nationality

	Western		Asian	
	Mean	Std. Deviation	Mean	Std. Deviation
a. To learn something new and interesting about nightlife	3.70	1.195	3.95	1.214
b. To visit a nightlife place in a foreign country that I have not visited before	3.66	1.103	3.56	1.072
c. To fulfill my dream of experiencing nightlife in a foreign country	3.36	0.961	3.39	1.383
d. To meet new people and socialize with local community from experience in nightlife in a foreign country	3.90	1.098	3.72	1.326
Travel experience	**3.65**	**0.987**	**3.66**	**1.112**
a. To experience new and different lifestyles about nightlife in a foreign country	3.56	0.993	3.76	1.160
b. To explore cultural resources in an area of nightlife	3.52	1.202	3.92	1.157
c. To participate in new nightlife activities	3.44	1.287	3.79	1.042
Novelty seeking	**3.50**	**0.935**	**3.82**	**0.928**
a. To relax physically from nightlife in a foreign country	3.59	1.290	3.80	1.221
b. To relax spiritually from nightlife in a foreign country	3.47	1.266	3.87	1.208
c. To find thrills and excitement from nightlife in a foreign country	3.73	1.188	4.10	0.882
Rest and relaxation	**3.60**	**1.112**	**3.92**	**0.887**
a. To see how people of different cultures have for their nightlife	3.69	1.340	3.64	0.959

Table 5 Contitude

	Western		Asian	
	Mean	Std. Deviation	Mean	Std. Deviation
b. To increase knowledge about nightlife in a foreign destination	3.71	1.217	3.99	1.156
c. To exchange custom and traditions about nightlife	3.71	1.120	3.85	1.365
Knowledge and leaning	**3.70**	**1.125**	**3.83**	**1.024**

For the importance of pull factors has been developed to understand the difference or similarity between Western and Asian tourists. Table 5 shows the importance of pull factors by nationality. As there is a significant difference in the pull factor's ability to attract Asian and Western tourists in the context of the nightlife in Thailand, the mean value between 3.41 and 4.20 of all push factors for both Western and Asian tourists are in the important level. Differences were found from the natural environment, as well as a cultural and historical attraction, which are in line with Sig. (2-tailed) less than 0.05. Both were considered to be more important among Asian than Western tourists. However, no practical difference was found in tourism facilities and services, as well as attractions and events among Western and Asian tourists.

Table 6 Importance of Pull Factors by Nationality

	Western		Asian	
	Mean	Std. Deviation	Mean	Std. Deviation
a. Nice Weather/Climate during the night	3.27	1.110	3.72	0.945
b. Interesting landscape for nightlife	3.51	1.221	3.81	0.862
c. Unpolluted natural environment for nightlife experience	3.51	1.012	3.99	0.954
Natural environment	**3.43**	**0.712**	**3.84**	**0.741**
a. Culture and Traditions about nightlife	3.45	1.167	4.04	0.804
b. Arts about nightlife	3.42	1.106	3.82	0.769
c. Charming traditional nightlife place i.e. traditional Thai-style pub	3.50	1.275	3.99	0.719
Culture and historical attraction	**3.46**	**1.049**	**3.95**	**0.619**
a. Safe Destination for nightlife	4.04	1.212	3.93	1.046
b. Affordable Tourist Destination for nightlife	3.90	0.995	4.12	0.795
c. Value of Money for nightlife	3.79	1.153	3.93	0.847
Tourism facilities and services	**3.91**	**0.877**	**4.00**	**0.701**
a. Special Festivals and Events for nightlife	3.77	1.122	3.73	0.984
b. Special Shows/Movies/Plays/Concert	3.72	0.981	3.67	0.784
c. Special Nightlife place i.e. Branded club	3.31	1.011	3.64	0.748
Attractions and events	**3.60**	**0.840**	**3.68**	**0.761**

Besides, further analysis of pull factors rating for Thailand as a tourist destination by nationality has been developed to understand the difference or similarity between Western and Asian tourists. Rating pull factors for Thailand as tourist destination by nationality table shows pull factors rating for Thailand as a tourist destination by nationality. As there was a significant difference in the influences of the pull factors to attract Asian and Western tourists to visit Thailand in the context of the nightlife in Thailand, significant differences were found from all pull factors, except tourism facilities and services, which is in line with Sig. (2-tailed) less than 0.05.

The second research question aimed to investigate if the tourists' destination image perception to Thailand as a destination for nightlife influence on tourists' overall satisfaction, intention to return, and intention to recommend Thailand to others. Those factors represent the tourists' attitude as it is developed from image perception, emotional reaction showing the preference for tourist destination, or the intention of a tourist to visit.

Table 7 Independent T-Test – Destination Image Perception

Independent T-Test - Destination Image Perception	Sig. (2-tailed)
1. Thailand has good nightlife	0.838
2. Thailand has a variety of nightlife for foreigners to be chosen	0.255
3. Thailand has bars, clubs and discotheques	0.499
4. Thailand has friendly local people for nightlife experience	0.007
5. Thailand has rich diversity of local food for nightlife experience	0.021
6. English is widely spoken among local people for nightlife experience	0.003
7. Thailand has is good value for money destination for nightlife	0.000
8. Thailand is safe for nightlife tourists	0.069
9. Thailand has good transportation system for tourists who want to explore nightlife	0.929
10. I have wonderful image of Thailand as a tourist's destination for nightlife	0.183
11. I feel I am very loyal to Thailand as a destination choice for nightlife.	0.012
Overall Results	**0.061**

Table 7 presents the results of the independent T-tests of the destination image of Thailand as perceived by tourists who visit Thailand as a nightlife destination. In the t-test for Equality of Means test results, the Levene statistics are F = 0.000 (see appendix G), and the corresponding level of significance is large (p>0.05). Therefore, the assumption of homogeneity of variance has not been violated, and the Equal variances assumed t-test statistic can be used for testing the null hypothesis of equality of means. From the result, at the 95% Confidence Interval of the Difference, if the Sig. (2-tailed) is less than α or 0.05, it can imply that there is significant difference in the tourists' destination image perception between Asian and Western tourists in the context of the nightlife in Thailand. Overall, the Sig. (2-tailed) was 0.061, which is more than α or 0.05, implying that there was no significant difference in the destination image perception between Asian and Western tourists in the context of the nightlife in Thailand.

Asian and Western tourists perceptions were similar in that they believed that Thailand had a sound transportation system for tourists who want to explore the nightlife (0.929), good nightlife (0.838), bars, clubs, and discotheques (0.499), a variety of nightlife for foreigners choose from (0.255) and consequently they had a wonderful image of Thailand as a tourist's destination for nightlife (0.183) and believed that Thailand is safe for nightlife tourists (0.084). All the Sig. (2-tailed) values were more than 0.05. However, there were some with Sig. (2-tailed) values less than 0.05, where Asian and Western tourists perceived some factors related to Thailand's nightlife differently, specifically: Thailand has rich diversity of local food for nightlife experience (0.021), they feel they are very loyal to Thailand as a destination choice for nightlife (0.012), Thailand has friendly local people that are part of the nightlife experience (0.007), English is widely spoken among local people for making the nightlife experience easier (0.003), Thailand is an excellent value-for-money destination for nightlife (0.000).

Table 8 Image perception of Thailand as a destination for nightlife

Attributes	Mean	Std. Deviation
1. Thailand has good nightlife	3.88	1.072
2. Thailand has a variety of nightlife for foreigners to be chosen	3.85	1.131
3. Thailand has bars, clubs and discotheques	4.08	1.083
4. Thailand has friendly local people for nightlife experience	4.03	1.192
5. Thailand has rich diversity of local food for nightlife experience	4.03	1.192
6. English is widely spoken among local people for nightlife experience	3.61	1.255
7. Thailand is good value for money destination for nightlife	4.16	1.139
8. Thailand is safe for nightlife tourists	3.77	1.000
9. Thailand has good transportation system for tourists who want to explore nightlife	3.58	1.226
10. I have wonderful image of Thailand as a tourist's destination for nightlife	3.75	1.247
11. I feel I am very loyal to Thailand as a destination choice for nightlife.	3.59	1.332
Overall results	**3.85**	**0.917**

Table 8 gives the results for the destination image of Thailand as perceived by foreign tourists who visit Thailand as a destination for nightlife. Overall, the respondents perceived Thailand positively as a good destination for nightlife. The respondents agreed to a great degree that Thailand is a good value-for-money destination for nightlife (4.16) as Thailand has bars, clubs and discotheques (4.08), friendly local people that are part of the nightlife experience (4.03), and a rich diversity of local food as part of the nightlife experience (4.03). In addition, the respondents also agreed that Thailand has good nightlife (3.88), that Thailand has a variety of nightlife for foreigners to choose (3.85), that Thailand is safe for nightlife tourists (3.77), that they have a wonderful image of Thailand as a tourist destination for nightlife (3.75), and that English is widely spoken among local people to enhance the nightlife experience (3.61). For the lowest mean value score, the respondents agreed that they felt very loyal to Thailand as a destination choice for nightlife (3.59) and that Thailand has good transportation systems for tourists who want to explore nightlife (3.58); this is a positive sign for the tourism industry in Thailand, especially for the nightlife sector.

Table 9 Image Perception of Thailand as a Destination fassor Nightlife by Nationality

	Western		Asian	
	Mean	**Std. Deviation**	**Mean**	**Std. Deviation**
1. Thailand has good nightlife	3.87	1.201	3.89	0.857
2. Thailand has a variety of nightlife for foreigners to be chosen	3.79	1.246	3.93	0.939
3. Thailand has bars, clubs and discotheques	4.12	1.174	4.03	0.940
4. Thailand has friendly local people for nightlife experience	3.88	1.241	4.25	1.083
5. Thailand has rich diversity of local food for nightlife experience	3.90	1.234	4.22	1.105
6. English is widely spoken among local people for nightlife experience	3.44	1.352	3.86	1.058
7. Thailand is good value for money destination for nightlife	3.95	1.322	4.45	0.715
8. Thailand is safe for nightlife tourists	3.85	1.103	3.65	0.820
9. Thailand has good transportation system for tourists who want to explore nightlife	3.58	1.264	3.57	1.174
10. I have wonderful image of Thailand as a tourist's destination for nightlife	3.67	1.246	3.86	1.244
11. I feel I am very loyal to Thailand as a destination choice for nightlife.	3.43	1.326	3.82	1.312
Destination image perception	**3.77**	**1.041**	**3.96**	**0.688**

Besides, further analysis of image perception of Thailand as a destination for nightlife by nationality has been developed to understand the difference or similarity between Western and Asian tourists. Table 8 shows image perception of Thailand as a destination for nightlife by nationality. As there was no significant difference in the destination image perception between Asian and Western tourists in the context of the nightlife in Thailand, almost all factors are considered in the agreement on the level. However, significant differences were found from all pull factors, except tourism facilities and services, which is in line with Sig. (2-tailed) less than 0.05.

2. Qualitative Data

The interview survey was conducted to investigate tourist perception and their experiences towards nightlife in Thailand. The researcher also made use of interview results to amend and improve a questionnaire to suitably answer the research questions. Some questions have been revised to take in all aspects found related to nightlife in Thailand in tourist point of view. The summary from 10 Western tourists and 10 Asian tourists on tourist perspective based on the interview question guideline is summarized as follows:

The interviewees generally visited Thailand more than once. There was one interviewee who visited Thailand more than 20 times. The average visit was 2-3 times. More than half of interviewees traveled alone to Thailand, especially the Western tourists, while Asian tourists seemed to visit as couples. All interviewees traveled to Thailand by themselves. They booked ticket and hotel from website and planned itinerary by their own. The average length of stay was around 2 weeks. The length of stay in Thailand ranged from 3 days to 1 month. The interviewees would like to revisit Thailand in the near future. They mentioned that *"I really like this country so I will come back"* and *"Maybe I should start a family here because it feels like a second home already."* The interviewees have many aspects that they like, such as food and beautiful places and Thailand has become their favorite place in the world. The tourists said *"They're all very cheap and the food is amazing."* and *"Thailand is very good. I love it."* By separating into Western and Asian tourists, they seem to have similar opinion on an intention to revisit Thailand in the near future.

The greater part of the interviewees would like to recommend Thailand as a destination to others. The interviewees mentioned many aspects that they like to recommend to others including low-prices, tasty food, and friendly people. By separating into Western and Asian tourists, they seem to have similar opinion on an intention to recommend Thailand as a destination to other tourists

Discussion

Nightlife is considered to provide numerous benefits to a country, especially for a tourist-popular country like Thailand. It is a common strategy for improving economic growth by expanding nightlife entertainment. Nightlife brings people together to meet each other, to create identities, and to have fun in an intercultural, interracial and cross-gender friendly environment. Individuals have different reasons to choose the nightlife entertainment pattern and it even varies among people who come from different countries. For making sure a country can gain the maximum benefits from the nightlife tourism industry, branding is important. Push and pull factors have been proved to be success factors for motivating and attracting tourists to visit a destination. The internal motivators, or push factors, generally allow the tourist to meet some physical, emotional, cultural, interpersonal, intellectual, or prestige needs, while pull factors are characteristics of the destination, which attract tourists with meeting their specific internal motivations and needs.

Here, qualitative and quantitative approaches were applied to a survey sample of international tourists who were visiting Thailand. The survey involved handing out 300 questionnaires and conducting 20 in-depth interviews with such tourists in nightlife areas in Bangkok, Thailand. The research results demonstrated that tourists were satisfied with the nightlife in Thailand with a high level of satisfaction. The majority were likely to revisit the country and to recommend Thailand to others. All the push and pull factors were considered to be important to the tourists in motivating and attracting them to enjoy the nightlife in Thailand. Also, all the push and pull factors were considered to highly motivate and attract them to experience the nightlife in Thailand. For the destination image of Thailand as perceived by foreign tourists who were visiting Thailand as a destination for nightlife, the tourists perceived Thailand in a positive way as a nightlife destination. They thought Thailand represented good value for money as the destination for nightlife, as well as it has a large variety of nightlife activities, friendly local people, and a rich diversity of local food as parts of the nightlife experience.

Comparing Western and Asian tourists, there was no significant difference in how the push and pull factors affected their motivations and in terms of their destination image perception between Asian and Western tourists in the context of the nightlife in Thailand; this can imply that the nightlife in Thailand offers a similar experience regardless of the nationality of visitors coming from different parts of the world. However, an exception was the pull factors, whereby Asian and Western tourists seemed to have different opinions on the pull factors importance and ratings of the nightlife in Thailand.

Recommendations

1. The research benefits the development of tourism industry in Thailand, Thailand government and also related parties in the tourism industry are able to apply the results by increasing an understanding on current situation of tourism industry, particularly on nightlife tourist destination, and proposing the suitable marketing strategy to attract more tourists to the country.

2. The research result is considered to provide contribution to the literature in an area of tourism

industry, particularly on nightlife tourism industry, in Thailand. The research on this particular area has been hardly found; even though, nightlife tourism industry tends to benefit Thailand, one of the most famous nightlife activities in the world, by generating more incomes from tourists. The research increases the empirical evidence on an assessment of the tourists' attitude toward Thailand as the nightlife tourist destination. Therefore, the results not only present the attitudes toward the current position of Thailand as the nightlife tourist destination, but also useful for the future study of tourism trend and direction for Night attraction in Thailand.

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The Development of a Set of Learning Experiences for Local Wisdom in Historic Sites and Important People to Promote the Child Development in Suphan Buri Province

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Abstract

The purpose of this research was to develop a set of learning experiences for local wisdom in historic sites and important people to promote child development in Suphan Buri Province and to compare learning achievement before and after using a set of learning experiences. The population in this research was 15,000 young children of Suphan Buri Educational Service Area Office 1. The sample group in the research was the 4-6 year-old children who were studying in the 3rd year kindergarten of the Suphan Buri Educational Service Area Office 1. One classroom per school was selected from 20 schools by the purposive sampling method. The size of the sample group used the Taro Yamanee formula at a 95% confidence level and the sample size at the error level (e) ± 4%, a total of 600 people. The researchers conducted the selection of teachers using a set of learning experiences for local wisdom in historic sites and important people in the area of Suphan Buri Province, each school for 1 person. The research instruments consisted of an assessment form for all 4 areas of learning, a self-esteem assessment form, a group discussion data form, and a survey of learning sources of local wisdom on historic sites and important people. The statistics in the research were descriptive statistic using percentage (%), average score and standard deviation (S.D.). The research results of the development of a set of learning experiences for local wisdom in historic sites and important people to promote child development in 4 are as: physical, emotional, social and intellectual shows that:

1. The consistency of the set of learning experiences of local wisdom on historic sites and important people to promote child development had the least average of the principle of the learning experience set which was $\bar{x}$ = 3.33 and S.D. = 0.58. The most average was a number of suitable learning topics for young children which was $\bar{x}$ = 4.67 and S.D. = 0.58 and other areas are at a high level.

2. The preparation of a set of learning experiences for local wisdom in historic sites and important people of children selected local wisdom with a value of 60 percent or more and being in the top four of each area, including the 1st area of the archaeological site consisted the learning topic of Chedi was 65.13%. The

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2nd area was the important people in Suphanburi province. There were learning topics of King Naresuan the Great which was 75.21%, Miss Kwanjit Si Prachan was 69.44, His Excellency Mr. Banharn Silpa-archa was 69.23 and Miss Poompuang Duangcha was 67.73, respectively. Wat Phra Sri Rattana Mahathat which was 75.13%, Wat Pa Lelai Worawihan was 70.51%, the ancient city of U Thong was 67.31% and Don Chedi (Phra Borom Rachanusorn Don Chedi) was 65.13%. The 2nd area was the important people in Suphanburi province. There were learning topics of King Naresuan the Great which was 75.21%, Miss Kwanjit Si Prachan was 69.44, His Excellency Mr. Banharn Silpa-archa was 69.23 and Miss Poompuang Duangcha was 67.73 respectively.

Introduction

Early childhood education is considered as a preparation for young children to be ready and to develop skills to their full potential. It is really important for early childhood educators to acknowledge that so they can promote young children's learnings abilities according to their needs and interests that will strengthen the population in development and inheritance good culture of the nation in the future (Office of the National Primary Education Commission, 2002). This is related to Pinyoanantaphong (2002) who said that young children are those at the age of birth up to 8 years which is the most important phase of development including physical, intellectual, emotional, psychological, social area and personality. It is the power of growth for life. Therefore, teachers are important people in the development of children. They should manage learning activities for the development of each child. Most importantly, they should bring joy to the children. In addition, early childhood education is the foundation of physical, emotional, psychological, social and intellectual development. If a child is not developed during this age, further development may be slow. It can slow many aspects of development and can be difficult to cure in time. Therefore, the primary goal of early childhood education is to develop each child to the fullest potential and in accordance with the early childhood curriculum.

The Kings of Thailand have always used wisdom to develop the nation and create solidarity for the nation. They ruled the people with the mercy of the fathers to their children. Whenever someone suffered from troubles, they could go to the King's Palace and ring the bell for help. Therefore, the people are loyal to the kings and the nation. Together, they developed the country with prosperity and solidarity. A lot of Thai people in the past were intelligent and were accepted by civilized countries. Thai Culture and wisdom are the result of the creation of Thai people based on various environmental factors and external influences. Some external cultures that Thailand accepts have been adapted to the condition, but Thai wisdom is still outstanding. For example, the wisdom heritage of archaeological sites and literature, which has its own Thai alphabet since the Sukhothai period and evolved to the present day. Thai literature is considered to be a literary piece with great melodic qualities in all aspects. Many literatures have been translated into many foreign languages. Wisdom is the knowledge, skills and experience of human beings through trial and error, which has been accumulated since the past through the process of studying, observing, thinking, analyzing and crystallizing into knowledge that can be utilized by each society. Each community will have wisdom which is considered valuable knowledge to local people as well as to the nation.

As an old province, Suphan Buri is full with culture, local traditions, local wisdom as well as various ethnicities. There is also the National Museum of Suphan Buri Province for the future generations to learn the wisdom and its beautiful culture. However, many kindergartens still lack the use of this valuable wisdom to apply in the teaching and learning for their young learners. Suphan Buri Province also has abundance of culture located in the flat central region. Its population is Thai, Chinese, Lao (Laos, Wiang Phuan Song Khong), Karen, Lawa, Khmer, Mon and Vietnamese, which is scattered in various districts. The majority of the province's population speaks in the standard language and has a distinctive style of rural accent called "Phut Noe" and in many parts of the country, using local dialects. The population mostly practice Buddhism that holds important traditions such as Worship of Luang Pho To, Scattering festival, Tradition of Tak Bat Devo, Thai Phuan Kum Fah Tradition, Thai Song Wedding Tradition, Boon Bun Fai Tradition, Don Chedi Memorial Ceremony, Making merit on the Water and Long Boat Racing Tradition (Suphan Buri Educational Service Area Office 3, 2010). Another important Buddhist tradition is making merit of Thai Phuan people at Wat Bot Subdistrict, Bang Pla Ma District in Suphan Buri Province. They will make sweets like Kong and Kayasarad to make merit to the monks. For the villagers of Wang Chik Village, Wang Luek Subdistrict, Sam Chuk District, Suphan Buri Province, will make Kong, put them in the panniers and offer them to monks during the Buddhist Lent Festival. At present, social conditions change. There is a technological progress, convenient transportation and abundant irrigation system that can be cultivated throughout the year. Suphan Buri Province has a total area of about 5358 square kilometers and is divided into 10 districts: Muang Suphan Buri District, Bang Pla Ma District, Si Prachan District, Don Chedi District, U Thong District, Doem Bang Nang Buat District, Dan Chang District, Nong Ya Sai District, Song Phi Nong District, and Sam Chuk District. The motto of Suphan Buri is the province of Yutthahatthi (war elelphant), famous literature, reputed amulets, prosperous agriculture, exceptional history, sources of artists and pleasant dialect.

For this reason, the researchers are interested in studying the local wisdom of Suphan Buri in order to develop an early childhood teaching experience to be in line with local needs. The knowledge from this research will have information about the grouping of wisdom that is suitable for young children in Suphan Buri Province. It also can be used as a guideline for teaching and learning management in accordance with their own context and the National Education Act BE 2542 which is beneficial towards education industry. A set of learning experiences for local wisdom in Suphan Buri Province for young children that the researchers created is an important tool for teachers. They can use as a guideline for teaching and learning activities for young children.

Objectives

1. To develop a set of learning experiences for local wisdom in historic sites and important people to promote child development in Suphan Buri Province.
2. To apply a set of learning experiences for local wisdom in historic sites and important people in order to promote early childhood development in Suphan Buri Province.
3. To compare learning achievement before and after using a set of learning experiences.

Conceptual framework

The development of a set of learning experiences for local wisdom in historic sites and important people to promote child development in Suphan Buri Province is obtained from a pre-requisite survey by questioning the needs of the community and parents. Then, the researchers used the results from the questionnaire summary and adapted them into teaching units which are information on the province's culture, traditions and local wisdom from various sources within the province. For example, the researchers chose the Suphan Buri Museum and communities that have valuable cultural heritage which still can be found in the province The researchers also received ideas about the classification of local wisdom from the Office of the Board of Directors National Education (2001) as a guideline for a curriculum development. It consists of local wisdom of Suphan Buri Province that is suitable for young children to learn and develop their knowledge, love and pride in their local area which are local wisdom in historic sites and important people.

Theories
This research aims to develop a set of learning experiences for local wisdom in historic sites and important people to promote child development in Suphan Buri Province. The researchers rely on the concept of developing the curriculum of Tyler, which provides the idea of determining the course's objectives, selecting the learning experience in laying out a set of learning experiences and the evaluation of Taba (Taba. 1962) Saylor, Alexander & Lewis (1981) gave the idea to define goals, purpose and scope, curriculum design, the use of the curriculum and curriculum evaluation. Smith, Stanley & Shore (1996; as cited in Wongyai, 1982) gave the concept of curriculum development by using the social education model as the basis for determining the aim of the curriculum of Oliva (Oliva, 1992) and the development of Surin local wisdom curriculum for early childhood

↓

Independent variables
The use of a set of learning experiences for local wisdom in historic sites and important people to promote child development in Suphan Buri Province.

↓

Dependent variables	
The results of using a set of learning experiences for local wisdom in historic sites and important people to promote child development in Suphan Buri Province for Lesson 1: Local wisdom in the historic sites is Wat Phra Sri Rattana Mahathat Ratcha Worawihan, Wat Pa Le Lai Worawihan, Don Chedi, U Thong Ancient City and their local pride towards the learning topic. Lesson 2: Local wisdom in important people in Suphan Buri Province is King Naresuan the Great, His Excellency Mr. Banharn Silpa-archa, Miss Poompuang Duangcha and Miss Kwanjit Si Prachan and their local pride towards the learning topic.	4 areas of development and self-esteem which consists of: 1. Child development: physical, emotional, social and intellectual 2. Self-esteem

Figure 1 Conceptual Framework

Research methodology

1. Research instruments and quality inspection

The development of a set of learning experiences for local wisdom in historic sites and important people to promote child development in Suphan Buri Province has the following steps:

1.1 **Step 1** Determining population and sample group selection to explore problems and information by studying research papers and research related to child development using local wisdom.

The researchers created and developed a set of learning experiences for local wisdom in historic sites and important people to promote child development in Suphan Buri Province and conducted in the form of research and development with 3 different studies as follows:

1) Phase 1: the development of a set of learning experiences for local wisdom in historic sites and important people to promote child development in Suphan Buri Province is from the survey of needs and priorities to be made into learning topics and development of teaching and learning activities. The researchers then took the information from Phase 1 to draft a set of learning experiences and evaluate them by assessing the appropriateness of the teaching and learning activities from 3 experts and improve the plan as suggested. After that the researchers studied learning activities that promote physical, emotional and mental development and self-esteem of young children.

2) Phase 2: the development of a set of learning experiences for local wisdom in historic sites and important people to promote child development in Suphan Buri Province is from the survey of needs and priorities to be made into learning topics that emphasized 6 main activities which are experience-enhancement activity, outdoor activity, movement and rhythm, unstructured activity, creative activity and educational game activity. The researchers then took the information from Phase 1 to draft a set of learning experiences and evaluate them by assessing the form of learning activities from 3 experts and improve the plan as suggested. After that the researchers studied learning activities that promote physical, emotional and mental development and self-esteem of young children by focusing on local wisdom in the sources of historic sites and important people that are in accordance with the 2003 Early Childhood Education Curriculum and are appropriate for the learner's level. After that, the researcher used data obtained from the survey of historic sites and important people in Suphan Buri Province to create a set of learning experiences for local wisdom in historic sites and important people to promote child development in Suphan Buri Province.

3) Phase 3: The experiment of a set of learning experiences and publish teaching and learning activities plan was revised and improved according to the experts in order to implement the activity plan to a pilot study with non-sample schools for the final improvement. The researchers then adopted the updated teaching plans and brought the workshop to all 20 schools. The teachers who passed the workshop would use the teaching and learning activity plan to experiment with the children in kindergarten 3 through the experimental research process (Experimental design) for 10 learning topics. They would observe the development before and after the experiment with the readiness observation form by using one group pretest-posttest design. Then, the researchers brought a set of learning experiences to be distributed to teachers in the schools or various child development centers to evaluate the results of the teaching and learning activities plan and arranged the training for teachers about Thai wisdom or local wisdom in historic sites and important people.

1.2 **Step 2** Creating research instruments

1) The researchers collected information on local wisdom/learning resources in Suphan Buri Province.

2) The researchers created assessment forms for all 4 areas of learning and self-esteem assessment form.

1.3 **Step 3** The creation of a set of learning experiences for local wisdom in historic sites and important people to promote child development in Suphan Buri Province and the experimental development record form is carried out as follows:

1) The researchers studied learning experiences that promote physical, emotional, social, and intellectual development, local wisdom in historic sites and important people to promote child development in Suphan Buri Province according to the 2003 National Early Childhood Education Curriculum that is appropriate for the level of learners.

2) The researchers designed activities according to the operation plan as follows:

2.1) Create understanding in conducting joint research of the research team / community.

2.2) Study the context and the problems of the child development activities of the schools.

2.3) Study about teachers, local wisdom and learning resources in the community.

2.4) Reflect on the information from the study of teachers, local wisdom and community learning resources.

2.5) Plan and find guidelines for organizing child development activities using local wisdom in historic sites and important people to promote child development in Suphan Buri Province.

2.6) Organize study visits on educational management by using local wisdom to organize teaching and learning activities.

2.7) Organize meetings, take lessons from study visits.

2.8) Plan activities for local wisdom for young children.

2.9) Create 4 lesson plans of local wisdom for children in the school.

2.10) Check the local wisdom lesson plans by 2 experts in teaching early childhood education for the correctness and appropriateness.

2.11) Improve lesson plans based on the experts' suggestions.

2.12) Use the lesson plans.

1.4 **Step 4** Summarizing data from the study of various issues in 10 learning topics

The researchers determined the learning topics and learning objectives in the lesson plans by combining the content of local wisdom in the historic sites and important people of Suphan Buri Province, in which each activity consists of the name of the activity, learning content, learning objective, learning content that should be learnt, learning experience, learning activity, learning materials and evaluation.

The researchers had 10 topics of local wisdom lesson plans on historic sites and important people to promote child development in Suphan Buri Province, with 5 units of the historic sites of Suphan Buri Province as follows:

Lesson 1 is about local wisdom in the historic sites consisting of topics: (1) Wat Phra Sri Rattana Mahathat Ratcha Worawihan, topic (2) Wat Pa Le Lai Worawihan, topic (3) Don Chedi, (4) U Thong Ancient City and (5) their local pride towards the learning topic.

Lesson 2 is about local wisdom of important people in Suphan = Buri Province which are topics: (1) King Naresuan the Great, (2) His Excellency Mr. Banharn Silpa-archa, (3) Miss Poompuang Duangcha, (4) Miss Kwanjit Si Prachan and (5) their local pride towards the learning topic.

1.5 **Step 5** Using a set of learning experiences to test with the sample group.

1) The assessment form for the appropriateness of a set of learning experiences is as follows:

The researchers created an assessment form for the appropriateness of a set of learning experiences in 5 levels by studying various details and then determining the issues to be assessed and then adjusted into questions with the scoring criteria as follows:

The most appropriate	5	points
Very appropriate	4	points
Moderate	3	points
Less appropriate	2	points
The least appropriate	1	point

Criteria for interpretation of meanings of points as follows

Score range 4.50 - 5.00 means the most appropriate
Score range 3.50 - 4.49 means very appropriate
Score range 2.50 - 3.49 means moderate
Score range 1.50 - 2.49 means less appropriate
Score range 1.00 - 1.49 means the least appropriate

2) The assessment form for child development and self-esteem

The researchers designed the assessment form for child development and self-esteem by studying the measurements and evaluations techniques and then created an assessment form for child development that promoted 4 areas of learning and self-esteem. The assessment form was also consistent with the 6 main activities and was considered for the accuracy of learning content by the 3 experts with the following criteria.

Score + 1 means that the assessment form is consistent with the course objectives.
Score 0 means not sure that the assessment form is consistent with the course objectives.
Score - 1 means that the assessment form is not consistent with the course objectives.

Proposing the scoring criteria of the assessment form which was created by the researchers to 3 experts in order to consider the instrument and to determine the Index of Congruence: IOC using 0.5 or more quality criteria. (Pinyoanantapong, 2002).

In this study, the value of the consistency index between behavior and purpose was obtained. The IOC value was 0.4 to 1.0. The assessment form that passed the criteria was taken to test with the kindergarten 3 of the Suphan Buri Educational Service Area Office 1. The complete assessment form for child development and self-esteem had 20 items with IOC values of 0.6 to 1.0.

The assessment form for learning achievement before and after using the set of learning experiences in physical, emotional, social and intellectual development and self-esteem had 20 items with a rating scale of 3 levels which were high, medium and low. The interpretation of the mean of the assessment form for learning achievement before and after using the set of learning experiences in physical, emotional, social and intellectual development and self-esteem was a rating scale with 3 levels:

Mean is 2.51-3.00 which means high.
Mean is 1.51-2.50 which means medium.
Mean is 1.00-1.50 which means low.

3) The researchers analyzed the data in the form of tables with description.

2. Data collection

In this research, the researchers had collected data by experimenting according to the experimental plan that specified the process of testing the set of learning experiences for local wisdom in historic sites and important people to promote child development in Suphan Buri Province with the following steps.

2.1 Contact the schools for a permission to collect research data.

2.2 Send permission letters to the schools.

2.3 Contact the school directors or the caretakers for a cooperation in distributing the questionnaires and collecting them as well as explaining how to use the learning experience plans and set the time to return the assessment form by mailing or sending to the schools directly.

2.4 Analyze the data from the assessment form to collect more data than the sample size that was determined by using the Taro Yamanee method. The researchers sent 600 copies of questionnaires to collect data and received them back to the full amount distributed

Results

The results of the development of a set of learning experiences for local wisdom in historic sites and important people to promote the child development in Suphan Buri Province were analyzed into parts as follows:

1. Part 1. The appropriateness and consistency of the development of the set of learning experiences of local wisdom on historic sites and important people to promote child development in Suphan Buri Province.

The researchers selected content from questionnaires of local needs for the development of the set of learning experiences of local wisdom on historic sites and important people in Suphan Buri Province and created a 10-unit teaching plan by selecting content from the highest needs and most appropriate for young children to do for an experiment in 20 schools. The teaching plans were used with the students in the 3rd year kindergarten of the Suphan Buri Educational Service Area Office 1 in the topic of important historic sites with a total of 5 units which were on the topic of Wat Phra Sri Rattana Mahathat Ratcha Worawihan, Wat Pa Le Lai Worawihan, Don Chedi, U Thong Ancient City and their local pride towards the learning topic. Another 5 units were about local wisdom in important people in Suphan Buri Province and were on the topic of King Naresuan the Great, His Excellency Mr. Banharn Silpa-archa, Miss Poompuang Duangcha, Miss Kwanjit Si Prachan and their local pride towards the learning topic. Therefore, there are 10 learning units in total.

Table 1 Results of Conformity Assessment of the learning experience. Local dignitaries and the ancient sites

List assessment	Points to consider					
	People 1	People 2	People 3	$\bar{X}$	S.D.	Interpret
1. The purpose of the development of the learning experience. Local historic resources and the importance of early childhood education.	4	5	4	4.33	0.58	very
2. Community needs to develop a series of learning experiences.	4	4	5	4.33	0.58	very
3. The principle of the learning experience. Local historic resources and the importance of early childhood education.	4	3	3	3.33	0.58	moderate

Table 1 Continued

List assessment	Points to consider					
	People 1	People 2	People 3	$\bar{X}$	S.D.	Interpret
4. Activities learning experience local historic resources and the importance of early childhood education.	4	5	4	4.33	0.58	very
5. Content with teaching the wisdom of ancient sites and the importance of early childhood education allows operation instruction to achieve the aim.	4	4	3	3.67	0.58	very
6. Teaching activities local knowledge can be the ancient sites and the importance of early childhood education.	5	4	4	4.33	0.58	very
7. Media teaching aids to promote teaching and learning to achieve the aim.	5	4	4	4.33	0.58	very
8. Methods of Measurement and Evaluation can be sure of achieving the aims of the learning experience.	4	5	4	4.00	1.00	very
9. The duration of the activities planned by teaching.	4	5	4	4.33	0.58	very
10. The unit offers a number of learning experiences for children.	5	4	5	4.67	0.58	most

From Table 1, the results of the data survey allowed the researchers to draw conclusions and guidelines for creating the set of learning experiences of local wisdom on historic sites and important people in Suphan Buri Province by selecting local wisdom with 60% or more and in the top 4 of each area. The first area was the historic sites which consisted of 75.13% of Wat Phra Si Rattana Mahathat, 70.51% of Wat Pa Lelai Worawihan, 67.31% of U Thong Ancient City and 65.13% of Don Chedi Phra Borom Rachanusorn Don Chedi. The second area was the important people in Suphanburi which consisted of 75.21% of King Naresuan the Great, 69.44% of Miss Kwanjit Si Prachan, 69.23% of His Excellency Banharn Silpa-archa and 67.73% of Miss Poompuang Duangcha, respectively.

The researchers also drafted the set of learning experiences of local wisdom on historic sites and important people to promote child development in Suphan Buri Province which were principles, objectives, structures, teaching period, learning activities and an activity manual. Then 3 experts did a quality check of the set of learning experiences. Each expert evaluated the appropriateness and consistency of the set of learning experiences. The results of the evaluation achieved the

Table 2 Results of questionnaires regarding historic sites

List of local wisdom of historic sites and important people in Suphan Buri Province	Percent	Rank
1. local wisdom on historic sites		
1.1 U Thong Ancient City	67.31	3
1.2 Wat Pa Lelai Worawihan	70.51	2
1.3 Wat Phra Sri Rattana Mahathat	75.13	1
1.4 City Pillar Shrine	58.08	5
1.5 Don Chedi (Phra Borom Rachanusorn Don Chedi)	65.13	4
1.6 Ancient clay ridge (U-Thong Ancient Dam)	56.02	6
1.7 Wat Sanam Chai (abandoned)	50.90	9
1.8 Tako Ancient City	48.08	12
1.9 Nong Ratchawat Archaeological Site	53.59	8
1.10 Wat Khae, Khum Khun Phaen and Giant Tamarind Tree	54.78	7
1.11 Phutthamonthon, Suphan Buri Province	46.02	13
1.12 Suphan Buri National Museum	45.38	14
1.13 Ban Khu Mueang Ancient City	49.61	10
1.14 Wat Phra Non and Matcha Park	42.52	15
1.15 Wat Nong Ngeng (Pagoda of Wat Nong Ngeng)	48.46	11
1.16 Other (specify)...		
2. local wisdom on important people		
2.1 King Naresuan the Great	75.21	1
2.2 Patriarch (Pun Punasiri)	42.73	5
2.3 Miss Poompuang Duangcha	67.73	4
2.4 His Excellency Banharn Silpa-archa	69.23	3
2.5 Miss Kwanjit Si Prachan (Folk songs: E-Saew)	69.44	2
2.6 Mr. Waiphat Phet Suphan	42.52	6
2.7 Mr. Sayan Sanya (singer from Derm Bang Nang Buat District)	36.11	9
2.8 Mr. Seri Rungsawang (singer from Bang Pla Ma District)	40.60	8
2.9 Mr. Sornphet Sornsuphan (Thai country singer From Suphan Buri province)	31.62	10
2.10 Mr. Surapol Sombatcharoen (the owner of the famous song "16 years of the past")	42.09	7
2.11 Other (specify)...		

* Top four selection criteria and with a 60% or more value

learning objectives. The learning activities could use the set of learning experiences of local wisdom on historic sites and important people to promote child development appropriately. The learning materials supported the learning activities to succeed the learning objectives and had appropriate teaching period. The researchers proposed more suggestions about the set of learning experiences of local wisdom on historic sites and important people to promote child development in Suphan Buri Province in learning activities, learning materials along with essential comments for using curriculum to improve the lesson plans and make them ready to be tested. For example, the participation of parents and the use of local learning materials should be promoted to children. In some activities, it took a long time and some of the content was quite difficult. So, they had to consider the age and interests of the child and used a variety of assessment methods.

2. Part 2. The use of the set of learning experiences of local wisdom on historic sites and important people to promote child development in Suphan Buri Province to create learning topics.

2.1 The researchers surveyed the basic information and created a questionnaire on the local wisdom in historic sites of Suphan Buri Province in the development of the set of learning experiences of local wisdom on historic sites and important people to promote child development in Suphan Buri Province. This group of contributors including local scholars, school administrators, kindergarten teachers and parents of students. The results of the survey appears in the selection of 4 historic sites as follows:

Local wisdom on important historic sites in which the informants had introduced and arranged the content to be organized for young children is Wat Phra Sri Rattana Mahathat. This temple is from the Khmer era, which is about 800 years ago. The location of the temple is the center of the community or city which is Mueang Chaliang. It was a city in the contemporary Dvaravati era. This temple is an important temple of the city of Chaliang which has a clear evidence in the 1st stone inscription. In the Thonburi period, when King Taksin went to subdue the Phra Fang army in Saphok Buri, he came to celebrate the royal relics of this city. This temple is also the temple of water for the new land that has been inhabited since the ancient times according to the Government Gazette, Ministry of Dhamma announcement in the Department of the Archdiocese of Thailand organizing the monastery.

The second historic site is Wat Pa Lelai Worawihan. It is an old temple and presumed to be around 1200 years old. It is located on Malaiman Road, Rua Yai Subdistrict, Mueang District. The villagers commonly called it Wat Pa. Inside the temple is enshrined Luang Pho Pang Pang Pa Lelai.

In the chronicles of the North, it is said that King Kra Tae gave the Mon Noi to restore the temple.

After the year 1724, a statue of Luang Pho To was created in the Pa Lelai Buddha image. It is an U Thong Suphoomphum art (i.e, hanging on the feet).

The third historic site is Don Chedi (Phra Borom Rachanusorn Don Chedi). It is located at Don Chedi Subdistrict, Don Chedi District in Suphanburi Province. This place consists of the King Naresuan the Great and the Chedi Yutthahathi. King Naresuan the Great built a pagoda in order to celebrate the victory in the battle of the Yutthahathi, which was against the King of Burma in January of 1592. In the year 1952, the army was rebuilt by constructing a large circular pagoda, 66 meters high, with a base of 36 meters wide, covering the original pagoda.

The forth historic site is the ancient city of U Thong. This city is the history of Suvarnabhumi civilization covering the entire area of U Thong Sub-district, U Thong District, Suphan Buri Province.

There is archaeological evidence that it was assumed that the capital of the Dvaravati Kingdom and the center of the Suvarnabhumi region was the beginning of history, art, culture and traditions of various ethnic groups before being merged into the Thai nation. At present, the ancient city of U Thong is located in U Thong district, Suphan Buri Province. According to aerial photography studies, it was found that the ancient city of U Thong is a city with a moat and a ditch.

2.2 The important people in Suphan Buri Province is to create a virtue that affects the progress of events in Thai history. Therefore, it is important that the younger generation should receive and glorify virtue people as well as being a model for living as a good person in society. The Suphan Buri people have chosen 4 important persons as follows.

Local wisdom for important people, the 1st person is King Naresuan the Great at Phitsanulok. In 1555, he was the son of King Maha Dhamma and Queen Wisutkasat. He was sent to Hongsawadee when he was 9 years old. He then returned to live in Phitsanulok when he was 16. In 1571, King Maha Thammarat appointed him the heir to the northern districts. As he ruled over the northern cities, he suppressed and defended the country from enemy aggression with his ability and courage. In 1584, he declared independence with Burma.

The second important person is Mr. Banharn Silpa-archa (19 August 1932 - 23 April 2016), a Thai politician. He served as the 21st Prime Minister of Thailand, Chairman of the Banharn-Chaemsai Silpa-Archa Foundation, Chairman of the Advisory Committee of Chat Thai Phatthana Party, former member of the 11-member Suphan Buri Provincial House of Representatives, former President of Suan Sunandha Rajabhat University, former President of the Institute of Physical Education Manager of Saha Sri Chai Construction Company Limited and former leader of the Thai National Party. In addition, he was the brother of Chumpol Silpa-archa, former Deputy Prime Minister.

The third important person is Miss Poompuang Duangcha. Her nickname is Peung and her real name is

Chumpung Chithan. She was a folk singer. The sweetheart of the country that was famous for her sweet voice and as a role model for other singers. Chompan Chaimharn was born in Hankha District, Chainat province. She was brought up in Song Phi Nong district, Suphan Buri and was the daughter of Mr. Samran and Nang Lek Jitharn.

The fourth important person is Miss Kwanjit Si Prachan. Her real name is Kleaw Setkit. She was born on 3 August 1947 in Si Prachan District, Suphan Buri Province. She was the daughter of Mr. Unk and Mrs. Plot Setkit. Kwanjit began practicing folk singing with Father Sawai Wong Ngam and Mae Bua Pun Chan Si at the age of 15. She is very interested in folk songs, and has a talent to sing folk songs beautifully, especially the song E-Seew.

The researcher selected the content from answers of the local needs questionnaire for the development of a set of learning experiences for local wisdom in historic sites and important people for children in Suphan Buri Province and then created 10 lesson plans. The researchers selected the content from the highest demand and suitability for young children and tested them in 20 schools. The 5 lesson plans on historic sites which were Wat Phra Sri Rattana Mahathat Ratcha Worawihan, Wat Pa Le Lai Worawihan, Don Chedi, U Thong Ancient City and their local pride towardshistoric sites were used with the 3rd year kindergarten of the Suphan Buri Educational Service Area Office 1. The 5 lesson plans on important people which were King Naresuan the Great, His Excellency Mr. Banharn Silpa-archa, Miss Poompuang Duangcha and Miss Kwanjit Si Prachan and their local pride on important people were used with the 3rd year kindergarten of the SuphanBuri Educational Service Area Office 1. A total of 10 lesson plans were used in this study.

3. Part 3 The comparison of learning achievement before and after using the set of learning experiences

Table 3 Mean and standard deviation of historic sites before and after the experiment

A set of learning experiences for local wisdom in historic site and local pride	Before			After		
	$\bar{x}$	S.D.	Interpretation	$\bar{x}$	S.D.	Interpretation
Wat Phra Sri Rattana Mahathat	1.60	0.26	medium	2.79	0.16	high
Wat Pa Lelai Worawihan	1.97	0.23	medium	2.66	0.13	high
Phra Borom Rachanusorn Don Chedi	1.53	0.16	medium	2.71	0.13	high
the ancient city of U Thong	1.53	0.16	medium	2.52	0.13	high

From Table 3, the results of organizing learning experiences and self-esteem on local wisdom in the historic sites found that before the experiment, Phra Borom Rachanusorn Don Chedi and the ancient city of U Thong have the lowest mean ($\bar{x}$ = 1.53, S.D. = 0.16) and after the experiment, they are higher. The highest mean is Wat Phra Sri Rattana Mahathat which has a high value ($\bar{x}$ = 2.79, S.D. = 0.16).

Table 4 Mean and standard deviation of important people before and after the experiment

A set of learning experiences for local wisdom in important people and local pride	Before			After		
	$\bar{x}$	S.D.	Interpretation	$\bar{x}$	S.D.	Interpretation
King Naresuan the Great	1.68	0.37	medium	2.54	0.14	high
Mr. Banharn Silpa-archa	2.04	0.31	medium	2.66	0.13	high
Miss Poompuang Duangcha	1.75	0.26	medium	2.59	0.16	high
Miss Kwanjit Si Prachan	1.72	0.37	medium	2.59	0.15	high

From Table 4, the results of important people found that before the experiment, the lowest mean is Miss Kwanjit Si Prachan, whose mean value is ($\bar{x}$ = 1.72, S.D. = 0.37). However, after the experiment, the mean value is higher ($\bar{x}$ = 2.59, S.D. = 0.15). The highest mean is Mr. Banharn Silpa-archa, which has high value ($\bar{x}$ = 2.66, S.D. = 0.13). The other people are at a high level, respectively.

Discussion

The researchers used a set of learning experiences for local wisdom in historic sites and important people to promote child development in Suphan Buri Province to children who were studying in the 3rd year kindergarten at 20 schools of the Suphan Buri Educational Service Area Office 1 in the second semester of academic year 2018. There were 10 lesson plans that children learned through 6 main activities; experience-enhancement activity, outdoor activity, movement and rhythm, unstructured activity, creative activity and educational game activity. The set of learning experiences supported the children's 4 developmental areas; physical, emotional, social and intellectual. They were interested and had a happy learning behavior. They were also satisfied with activities and could truly answer questions about the local contexts which is related to Tiramatvanich (2002) who develops local curriculum at the early childhood level in Ubon Ratchathani Province as well as Urairat (1994) who developed local curriculum at the early childhood education level in Udon Thani. It is also related to Thiraphon AnekSin, who developed the local curriculum in early childhood development, Sa Kaeo

Province by providing experiences for young children through 6 main activities, enhanced child's development in 4 areas; physical, emotional - psychological, social and intellectual and promoted positive attitudes towards local context. Thiraphon AnekSin found that teaching and learning aimed at educating local people about their own local pridemust provide the students with direct experiences about life, career, economy, environment and local society in teaching and learning so that they can live happily in the local area, which will benefit them. Especially, the creation of characteristics and habits or cultivating concepts about the value of things are important and should be available locally to young people who are easily to cultivate their local pride. Thonthong (2010) conducted a research on the assessment of attitudes of teachers who taught environmental education in the local area which affected the curriculum and teaching methods of teachers in primary schools in Maryland Local environment. The results found that the students had better learning behavior by studying local conditions and preserving the local environment.

Suggestions

1. Suggestions for applying research results

1) The activities in the set of learning experiences for local wisdom in historic sites and important people to promote child development in Suphan Buri Province are just guidelines. Early childhood teachers should study and understand more about the curriculum and lesson plans clearly. So, they can adjust learning activities appropriately and consistently to their students and communities.

2) The activities in the set of learning experiences for young children are part of the learning in real situations. They learned from doing activities together and learned about things around them in order to feel pride in their local areas.

2. Suggestions for further research

There should be development of local wisdom curriculum for young children of other provinces in order to promote learning of local stories.

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Effect of Implementing Instruction Based on Flipped Classroom Approach on Critical Thinking and Attitudes toward Mathematics of Fourth-year Undergraduate Students in Mathematics Teacher Preparation Program, Faculty of Science and Technology, Suan Dusit University

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Abstract

This study aims to: (1) compare critical thinking ability in the course of Trends of Mathematics Teaching of fourth-year undergraduate students who attended the instruction based on flipped classroom approach with criteria of the course at 70 percent and (2) compare attitudes toward mathematics of fourth-year undergraduate students before and after attending the instruction based on flipped classroom approach. Sample of the study was 115 fourth-year undergraduate students who were studying in mathematics teacher preparation program at the Faculty of Science and Technology, Suan Dusit University and selected by purposive sampling. These undergraduate students were studying in "Trends of Mathematics Teaching" course in the first semester of 2017 academic year. Instructional activities in the course were based on lesson plans which were designed focusing on flipped classroom approach. At the end of the course, the undergraduate students had to complete a test focusing on critical thinking in trends of mathematics teaching by results of the IOC analysis that revealed every test item had IOC scores at 1.0 which were greater than the criteria at 0.5 and a questionnaire on attitudes towards mathematics by results of the IOC analysis that revealed every test items had IOC scores ranging from 0.67-1.00 which were greater than the criteria at 0.5. The collected data were analyzed for mean, standard deviation, one-sample t-test and pair-sample t-test.

The study revealed that: (1) the critical thinking ability of the undergraduate students who were in the instruction based on flipped classroom approach is statistically higher than 70% at the alpha level of 0.01 and (2) the attitudes toward mathematics of the undergraduate students after attending the instruction based on flipped classroom approach is statistically higher than those prior to attending the instruction based on flipped classroom approach at the alpha level of .01.

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Introduction

Education in the 21st century focuses on supporting students to succeed in future work and real-life living. Mathematics is a discipline which is important for real-life living since it develops students' thinking and enhances students' creativity. Mathematics helps students to be able to properly predict, plan, make decision and solve problems. In addition, mathematics is an important tool for studying other disciplines such as science and technology. Thus, mathematics helps to improve the quality of life (Ministry of Education, 2008; Makanong, 2011; Panich, 2013).

Although mathematics is an important discipline, current teaching and learning mathematics is not successful. One reason is that the majority of teachers still teach by lecturing. Lecturing is usually employed in classroom teaching which places the teacher as an information provider and the student as an information receiver. With this instructional strategy, the student becomes used to listening to the teacher without giving opinion. Thus, the student learns from memorizing and limits the opportunity to develop skills in thinking, listening, and writing (Kanjanarakpong, 2002; Panich, 2013). Another issue is instructional media is not included in mathematics instruction which limits the students to participate in classroom activities. This instructional approach creates boredom among students, afraid of studying mathematics, and have negative attitude toward mathematics. Students finally have low achievement in mathematics (Jaikwang, 2011). In addition, teachers may lack the technique to transfer knowledge to students. They do not prepare for instructional activities. Sometimes, the instructional activities do not motivate students. These situations create and environment where students lack the motivation to study so that they do not learn mathematics (Plangprasobchoke, 2006).

Critical thinking is one of the important skills. Individual with critical thinking are able to develop creative thinking, criticized thinking, and problem solving which are necessary skills in the 21st century. Mathematics is a discipline that helps students develop critical thinking. The teacher is an important person who promote students' thinking in classroom instruction by having appropriate instruction. The instruction should allow students to identify, reason, analyze, and criticize the given situation so that students are able to choose the best solution of the problem (Khammanee, 2014).

Flipped classroom approach is an instructional approach that is appropriate to promote students' thinking. This instructional approach allows students to self-learn from digital media and to apply what they have learned to do in-class activities. The use of digital media in flipped classroom approach allows students to flexibly learn based on their ability. Thus, students can learn as often as they need so that they clearly understand the content before doing in-class activities. As a result, teacher has more time to develop students' critical thinking ability in the classroom (Loomroy, 2003; Panyajirawut, 2013; Panich, 2013; Uttamung; 2015).

A course "Trends of Mathematics Education" at Suan Dusit University is a course with an emphasizes on innovation and in-trend research that are relevant to mathematics teaching. Activities in the course focus on studying from articles, journal papers, or research papers, including analyzing and discussing about trends or changes of mathematics teaching and learning. In this course, students have to study from various learning resources. Then, they apply what they have learned to do in-class activities. The teacher plays a role to facilitate activities, to support students to think, to lead discussion, and to guide students to make a conclusion about the content. These processes in the course "Trends of Mathematics Education" are related to student-centered approach which will enhance students' attitude toward mathematics.

From the aforementioned, this researcher believes that the implementation of flipped classroom approach would be effective to enhance students' critical thinking and attitude toward mathematics. Thus, the researcher studied how the implementation of flipped classroom approach in the course "Trends of Mathematics Education" would affect students' ability to critical think and enhance attitude toward mathematics. More details about the study will be described in the next sections.

Objectives

1. To compare critical thinking ability in trends of mathematics teaching of fourth-year undergraduate students who attended instruction based on flipped classroom approach with criteria of the course at 70 percent.

2. To compare attitudes toward mathematics of fourth-year undergraduate students before and after attending the instruction based on flipped classroom approach.

Conceptual Framework

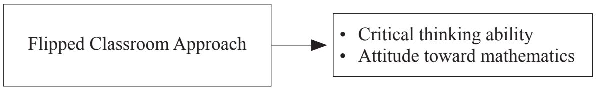

Figure 1 Conceptual Framework

Research methodology

1. Population and Samples

Population of the study was the fourth-year undergraduate students in Suan Dusit University. Sample of the study was 115 fourth-year undergraduate students who were studying in mathematics teacher preparation program at the Faculty of Science and Technology, Suan Dusit University. The selection was conducted by purposive sampling through students who were studying in “Trends of Mathematics Teaching” course in the first semester of 2017 academic year.

2. Research Design

This is a quasi-experimental research with one group of samples. Design of the research is shown in Table 1.

Table 1 Design of the Study

Sample	Pre-test	Intervention	Post-test
E*	• Attitude toward mathematics	X**	• Critical thinking ability • Attitude toward mathematics

* E is sample of the study.
** X is instruction based on flipped classroom approach which iswas given to the samples.

3. Research Instrument

3.1 Research instrument is lesson plans focusing on instruction based on flipped classroom approach. Processes to develop the lesson plans are the following:

1) The researcher reviewed and studied theories and ideas about instruction based on flipped classroom from related documents, journal papers, and research papers.

2) The researcher reviewed and studied information about the course “Trends of Mathematics Education” from the curriculum of mathematics teacher preparation program, Suan Dusit University.

3) The researcher designed four lesson plans focusing on instruction based on flipped classroom approach. These lesson plans are for 12-hour teaching in Trends of Mathematics Education course. More details about each lesson plan are showed in Table 2

Table 2 Details about Lesson Plan Used in the Study

No. of lesson plan	Content
1	Exploring research and research articles related to mathematics instruction
2	Theory and teaching related to mathematics instruction
3	Examples of mathematics instruction in the 21st century
4	Students’ presentation of design and presentation of mathematics instruction in the 21st century

4) Research advisor reviewed the lesson plans in order to check correctness and give suggestions.

5) The researcher rectified the lesson plans based on the advisor’s suggestion. As follows

- Improve the activities to be more appropriate for applying in class.
- Improve the language used in activities to focus on the development of critical thinking.
- Improve the format of worksheet to be more interesting.

6) The researcher applied the developed lesson plans to teach the research sample.

3.2 Collecting data instruments are: (1) a critical thinking test in trends in mathematics education and (2) an evaluation form for attitude towards mathematics.

1) A critical thinking test in Trends in Mathematics Education course was used to collect the data after finishing the course. Processes to develop the test are the following:

1.1) The researcher reviewed and studied documents, journal papers, and research papers that are related to educational measurements and evaluations.

1.2) The researcher reviewed and studied information about the course “Trends of Mathematics Education” from the curriculum of mathematics teacher preparation program, Suan Dusit University.

1.3) The researcher analyzed the content in the course in order to specify the numbers of test items in the test

1.4) The researcher developed five test items for critical thinking. Criteria used to score the test items are shown in Table 3.

Table 3 Description of the Score for Test Items in Critical Thinking Test

Score	Description
5	Students are able to criticize by applying knowledge related to mathematics instruction to describe clearly and make conclusion correctly.
4	Students are able to criticize by applying knowledge related to mathematics instruction to describe clearly but make conclusion partly.
3	Students are able to criticize by applying knowledge related to mathematics instruction to describe and make conclusion partly.
2	Students are able to criticize by applying knowledge related to mathematics instruction to describe partly but make conclusion incorrectly.
1	Students are able to criticize by applying knowledge related to mathematics instruction to describe illogically. However, there is evidence showing that students attempt to describe.
0	Students are not able to criticize or do not show evidence to answer.

1.5) Research advisor reviewed the test items in order to check correctness and give suggestions.

1.6) The researcher rectified the test items based on the advisor's suggestions.

1.7) Three specialists reviewed the revised test items in order to check content validity, appropriateness of language, and appropriateness of scoring criteria. After reviewing the test items, specialists assigned scores for checking Index of Item-Objective Congruence (IOC). Results of the IOC analysis revealed that every test item had IOC scores at 1.0 which were greater than the criteria at 0.5. In order to help undergraduate students clearly understand the questions and to better answer, the specialists suggested that more information should be included in the test items.

1.8) The researcher selected three test items which were IOC eligible to be included in the critical thinking test in Trends in Mathematics Education course.

1.9) The researcher used the critical thinking test to collect data from the research sample.

2) An evaluation form for attitude towards mathematics was used to collect the data after finishing the course. Processes to develop the test are as follows:

2.1) The researcher reviewed and studied documents, journal papers, and research papers that are related to the evaluation of attitudes towards mathematics.

2.2) The researcher developed 15 evaluation items for attitudes towards mathematics. The research sample had to rate their attitudes towards mathematics from one to five. Description of each rating score is shown in Table 4.

Table 4 Description of the Rating Score in the Evaluation Form for Attitude towards Mathematics

Rating score	Description
5	Extremely agreed
4	Agreed
3	Uncertain
2	Disagreed
1	Extremely disagreed

2.3) Research advisor reviewed the evaluation items in order to check correctness and give suggestions.

2.4) The researcher rectified the evaluation items based on the advisor's suggestion.

2.5) Three specialist reviewed the revised evaluation items in order to check the relevance between the evaluation items and behaviors that show attitude towards mathematics. After reviewing the evaluation items, specialists assigned scores for checking Index of Item-Objective Congruence (IOC). Results of the IOC analysis revealed that every test item had IOC scores ranging from 0.67 – 1.00 which were greater than the criteria at 0.5. In order to make the evaluation items easy to understand, the specialists suggested that language used in some items should be revised.

2.6) The researcher selected ten test items which were IOC eligible to be included in the evaluation form for attitude towards mathematics

2.7) The researcher used the evaluation form for attitude towards mathematics to collect data from the research sample.

In this study, the data collection consisted of two main processes: preparation process and data collection process.

4. Preparation process.

The preparation process started with the design of four lesson plans for 12 hours teaching for thecourse "Trends of Mathematics Teaching". These lesson plans focused on instruction based on flipped classroom approach, an instructional approach allowing students to learn new concepts with the use of technology. Instruction in the lesson plans consisted of four stages based on Schoolwires (2013) idea of flipped classroom approach.

4.1 Stage 1: Experiential Engagement. In experiential engagement stage, instructor describes teaching methodology used in the class to students and introduce content that will be taught in this course.

4.2 Stage 2: Concept Exploration. In concept exploration stage, instructor provides more details about instructional media to students. In this study, the instructional media were digital media that the instructor developed and those from other sources.

4.3 Stage 3: Creating Meaning . In the creating meaning stage, students are allowed to learn new concepts from the instructional media that the instructor provides. Students have to understand the concepts presented in the instructional media since they have to apply their knowledge and understanding in the next stage.

4.4 Stage 4: Demonstration and Application. In demonstration and application stage, students have to apply knowledge and understanding that they gained in stage 3, creating meaning stage, to do in-class activity. In the activity, students have to discuss and exchange their knowledge and understanding to solve problems. During the activity, instructor plays a role as a facilitator who facilitates students to learn. Then, instructor and students collaboratively summarize the concepts gained at the end of the class.

After the researcher designed lesson plans, she prepared and developed instructional media, tools, and other documents related to the instruction specified in the lesson plans. An example of digital media used in this study is shown in Figure 2.

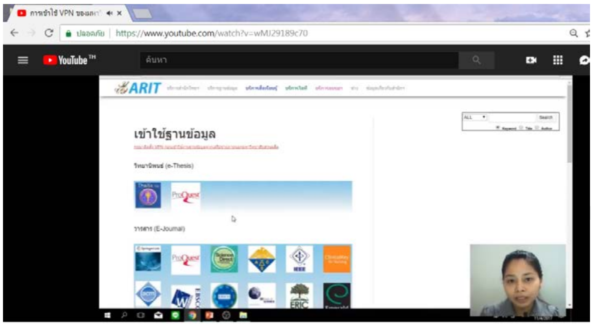

Figure 2 An example of digital media used in this study (Ruangnun, 2017a)

5. Collection of Data

Data collection process. The researcher collected the data in this study by herself. The data collection process started with evaluating students' attitude toward mathematics at the beginning of the course. The evaluation form was an online evaluation published in google form as shown in Figure 3.

Figure 3 An evaluation form on attitude toward mathematics used in this study (Ruangnun, 2017b)

Then, the researcher taught the fourth-year undergraduate students, who were samples of the study, by using the designed lessons. During the lessons, the researcher observed students' learning behavior. After completing four lessons (12 hours), students were evaluated based on their critical thinking ability by using the designed test and were re-evaluated on their attitude towards mathematics. Then, the critical thinking test and the evaluation form on attitudes toward mathematics were scored based on the criteria by the researcher.

6. Data Analysis

After the researcher scored the critical thinking test and the evaluation form on attitudes toward mathematics, the scores were analyzed by using SPSS for Windows software in order to:

6.1 Compare critical thinking ability of the fourth-year undergraduate students with criteria of the course at 70 percent by using one-sample t-test.

6.2 Compare attitudes toward mathematics of fourth-year undergraduate students before and after attending to instruction based on flipped classroom approach by using paired-sample t-test.

Results

This section shows two parts of the research results: (1) the comparison of critical thinking ability with criteria of the course and (2) the comparison of attitudes toward mathematics before and after attending to instruction based on flipped classroom approach.

The comparison of critical thinking ability with the criteria of the course. In the comparison of critical thinking ability of the fourth-year undergraduate students who attended to instruction based on flipped classroom approach with the criteria of the course at 70 percent, the researcher analyzed scores from critical thinking test for arithmetic mean ($\bar{x}$), standard deviation (S.D.), and t score (one-sample t-test). The results are shown in Table 5.

Table 5 Mean ($\bar{x}$) Standard Deviation (S.D.) and T Score of Critical Thinking Score in the Comparison with Criteria of the Course at 70 Percent

	N	$\bar{X}$	S.D.	t	p-value
Samples	115	11.19	2.22	3.33	.001*

* p < .01

Table 5 shows that the arithmetic mean of the score in critical thinking is 11.19 out of 15 and the standard deviation is 2.22. In addition, table 5 shows that the fourth-year undergraduate students who attended to instruction based on flipped classroom approach have higher critical thinking ability in trends of mathematics teaching than 70% which is the criteria of the course at 99% confidence interval.

The comparison of attitudes toward mathematics before and after attending to instruction based on flipped classroom approach. In the comparison of attitudes toward mathematics of fourth-year undergraduate students before and after attending the instruction based on flipped classroom approach, the researcher analyzed scores from the evaluation form from arithmetic mean ($\bar{x}$), standard deviation (S.D.), and t score (paired-sample t-test). The result is shown in Table 6.

Table 6 Mean ($\bar{x}$) Standard Deviation (S.D.) and T Score of Attitudes toward Mathematics Score Before and After Attending the Instruction Based on Flipped Classroom Approach

	N	$\bar{X}$	S.D.	t	p-value
Pre-test	115	33.36	3.63	13.30	0.000*
Post-test	115	38.77	3.58		

* p < .01

Table 6 shows that the arithmetic mean and standard deviation of the score in attitudes toward mathematics before attending to instruction based on flipped classroom are 33.36 and 3.63, respectively. The score in attitudes toward mathematics after attending the instruction based on flipped classroom are 38.77 and 3.58, respectively. The score in attitudes toward mathematics after attending the instruction based on flipped classroom is statistically higher than those before attending the instruction based on flipped classroom at 99% confidence interval.

Discussion

This section discusses results of the study in two parts: (1) discussion of the result on the comparison of critical thinking ability with criteria of the course and (2) discussion of the comparison of attitudes toward mathematics before and after attending the instruction based on flipped classroom approach.

1. Discussion of the results on the comparison of critical thinking ability with criteria of the course. The results reveal that the fourth-year undergraduate students who attended to instruction based on flipped classroom approach had higher critical thinking ability in trends of mathematics teaching than 70% which is the criteria of the course at 99% confidence interval. The discussion is as follows.

The result that the undergraduate students who attended to instruction based on flipped classroom approach have higher critical thinking ability reflects the importance of technology implementation in classroom instruction. The integration of technology makes content more interesting and enhances students' understanding. In addition, with the flipped classroom that students have to do activities after self-learning the content, the undergraduate students could apply knowledge in classroom activities. In the activities, they gained knowledge and developed critical thinking skills. They could give opinion, analyze content, present understanding, and evaluate peers' answer. These advantages are relevant with Na Mahachai (2013) who explains that supporting children to self-learn content prior to class and apply what they learn in class would enhance their learning. They could learn faster and better. Thus, there would be more time for developing their thinking skills. With the flipped classroom approach, students come to class with understanding since they self-learnt the content prior to class. They would have time in class for discussing, joining classroom activities, and developing critical thinking skills. In addition, flipped classroom approach is an instructional approach that uses open-ended questions. The use of open-ended questions allows students to usually, continuously, and effectively use their critical thinking ability. This idea is relevant to what Papol (2008) states that the abilities to think critically and creatively help individuals to develop their academic and profession. Individuals are able to develop new knowledge so that they understand the changes of society.

Flipped classroom approach is an instructional approach that promotes students' self-learning by using electronic or online media, which are learning resources that the students are interested in. These learning resources provide students opportunities to easily access to content and review the content. This idea is related to what Panich (2013) describes as the flipped classroom approach as an up-to-date instructional approach that implements the use of ICT to motivate students. The implementation of flipped classroom approach helps students avoid non-advantaged activity. In addition, this approach supports students to explore and to learn content by themselves. This is relevant to the idea of Bergman & Sams (2007) who state that flipped classroom approach allows students to use technology to build learning environment in student-centered classroom. Students can learn from a short talk in electronic media as often as they want so that they better understand the content. These ideas are also related to what Ritkaew (2013) stated in her study. In the Ritkaew study, she implemented flipped classroom approach with the use of ClassStart. Her study reveals that undergraduate students had learning behaviors that differ from usual. The undergraduate students explored knowledge by themselves, persuaded peers to learn in the learning resources provided by instructor, and discussed in classroom activities.

2. Discussion of the results on the comparison of attitudes toward mathematics before and after attending to instruction based on flipped classroom approach. The results reveal that the score in attitudes toward mathematics after attending to instruction based on flipped classroom is statistically higher than those before attending the instruction based on flipped classroom at 99% confidence interval. The discussion is as follows.

The flipped classroom is an instructional approach that emphasizes students to self-learn from home. In case that students do not understand, they can study from the digital media as often as they need. After they understand the content, they apply knowledge to do in-class activities. The activities focus on students' participation, co-learning, giving opinion, and sharing knowledge. In addition, the activities promote student-to-student and student-to-teacher interactions. Thus, teacher knows more about individual students. Students are able to ask and discuss with teacher. This idea is related to Wonganuttararoj (2003) idea about individuals who affect to students' attitude toward learning. She describes that teacher, peer, and school environment are effective to students' attitude toward learning. The teacher plays an important role in developing students' positive attitude toward learning, motivating students, and promoting students to realize the importance of learning. This idea is also relevant to what Mazur (2013) describes about result of implementing flipped classroom approach on students' achievement and perception in mathematics. Mazur describes that the implementation of flipped classroom approach can improve students' achievement, satisfaction in learning, and attitude toward learning.

Suggestions

1. Comments on Implementation of this Study

1. To implement flipped classroom approach, the teacher should realize the importance of instructional media prepared for students' self-learning. The instructional media has to be easy to understand and clearly communicated. Importantly, the teacher needs to realize that the instructional medias are not teachers. Thus, it is still necessary that the teacher has to additionally describe and summarize the content so that students clearly understand.

2. Within flipped classroom, students need to be responsible to study what the teacher assigns.

2. Comments on Future Study

2.1 There should be studies on results of implementing flipped classroom approach in other content or other educational levels.

2.2 Since flipped classroom approach is the instructional approach that allows students to apply knowledge to give opinion, there should be studies on results of implementing flipped classroom approach on the development of other abilities such as reasoning ability.

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Thailand's Civil Productivity through Learning Management of Social Studies in Schools

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Abstract

The research objectives are (1) to study creation of citizenship based on productivity concepts and (2) to study the creation of citizenship through learning management of social studies subjects in Thai schools. The samples used were 124 social studies teachers in the senior high schools and 5 educational supervisors. The survey and interview were used as the methods for data collection. The research tools were questionnaires, structured interview forms and document analysis forms. Frequency and percentage were used for data analysis. The learning process of Zhao's POL Concept and Paitoon Sinlarat's CCPR Model were used as the analysis model to build citizenship through Thai education system in social studies subjects. The findings reveal that the productivity concepts were similar when the teachers transferred the knowledge to the students. The creative thinking and analyzing occurred during the transferred process. The previous knowledge was a crucial factor to apply for the new knowledge to create work or knowledge reflection and it must be based on ethical social responsibility. When considering the difference of Zhao's POL Concept and Paitoon Sinlarat's CCPR Model, it found that the Zhao's POL Concept emphasized on the teachers who defined the learning process to create productivity of students while the Paitoon Sinlarat's CCPR Model emphasized on the students to achieve CCPR Model. The opinion of the social studies teachers on productivity concepts for learning management in building citizenship through the current education system of Thailand was found to be moderately well-known. Social studies teachers and educational supervisors showed the same opinions that ethics and morals should be emphasized for building citizenship and the obstacles were teachers' workloads apart from routine tasks that made the learning process on the civil productivity concept to become harder. The educational supervisors realized that too much workload of social studies teachers was an important problem that may lead to misconception. Therefore, the appropriate curriculum and teaching methods should be developed and oriented to the teachers who are the most important factors to build civil productivity of Thailand.

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Introduction

The creation of citizenship is different in each social context. As for building citizenship through the Thai education system, the Basic Education Curriculum B.E. 2544 (A.D. 2001) is promulgated by the Ministry of Education (Ministry of Education, 2001) specifying learning goals and standards, improving the quality of learners to have virtues, intelligence, good quality of life and the capacity to compete with others globally. However, after evaluating the results from using the curriculum, it is found that there are problems from the document preparation and the results from the use, such as the problems about the confusion of those who have to develop the curriculum because most of them define the contents and learning results with high expectation causing too many contents in the course. The measurement and evaluation are not based on standards affecting the problem of preparing educational documents and grades transferring. Additionally, the quality of the learners having knowledge, skills, abilities and desirable characteristics do not meet the satisfaction as specified. In addition, the main issue of the Ministry of Education that would like to develop youth to the 21st century leads to the development of the Basic Education Core Curriculum B.E. 2551 (A.D. 2008) (Ministry of Education, 2008). This is prepared for locals to develop learning management among Thai youth at the basic level of education having good quality and improving themselves throughout their lifetime. Also, learning standards and key indicators should be clear for learners to help reduce the previous problems. Nowadays, 12 values are contained in social studies for building citizenship through the curriculum (Office of the Basic Education Commission, 2014) identified in Strand 2: Civics, Culture and Living in Society. However, the problem of building citizenship through the Thai education system also has affecting factors, such as the term of Minister of Education (ThaiPublica, 2014) with average of 2.1 years per person during 1892–2014. Nonetheless, from 1932 onwards, the average is only 1.5 years per person having the most changes under the same government. From 1995 onwards, the average is 0.95 year per person resulting in continuing education policies according to the numerous changes of the government's term or the high budget allocation of education but poor quality. As shown in the expenditure on education during 2008–2016, there were high budget allocation every year (Equitable Education Fund, 2018). The highest budget was 2016, 878,878 million baht, representing 6.1 percent of GDP, which was higher than the OECD countries (developed countries) investing only 5.2 percent of GDP. Furthermore, this was 1 out of 4 of the national budgets which is higher than the world average and the OECD countries. Thus, it shows that Thailand mostly focuses on the educational system for the country development.

Therefore, building citizenship through the education system is a process to build the youth foundation. The learning process in learning management has a great impact on improving learners in terms of ideas and good sense such as creating productive students. Zhao (2012) proposes the learning process concept that can develop student productivity. Moreover, in Thailand, the productivity concept of Sinlarat (2014) presents the creation of productivity-based instructional model that the researcher can summarize the productivity concept to be the creation of human resources setting the direction of the social system. This is significant in response to the expectations that humans in the past would like to correct mistakes that have occurred or believe that the event could be developed more than it used to be. This is in line with Sinlarat (2016) productivity concept describing a producing culture that requires people to be aware of the present, think of creating a system and productivity of their own and can compete with others. Nevertheless, the family environment has been an influence factor since they were born, and then the social system. Creating human beings to be citizenship according to the productivity concepts must contain (1) Critical Mind (2) Creative Mind (3) Productive Mind and (4) Responsible Mind. The development of citizenship building guidelines is a matter that all sectors of society need to think about in order to create appropriate citizenship in the context of Thai society by not following the global society trend or imitating foreign concepts at every step.

It is because each country has its own unique local identity. If we imitate them identically, every society is like producing robots from factories and lacking diversity of humanity. As for the context of Thai society, it is considered a developing country which has defined Thailand for a long time. Hence, having citizens who can develop and transform Thailand into a developed country is significantly needed and even more challenging to build citizenship.

Objectives

1. To study creation of citizenship based on productivity concept.

2. To study the creation of citizenship through learning management of social studies subjects in Thai schools.

Conceptual Framework

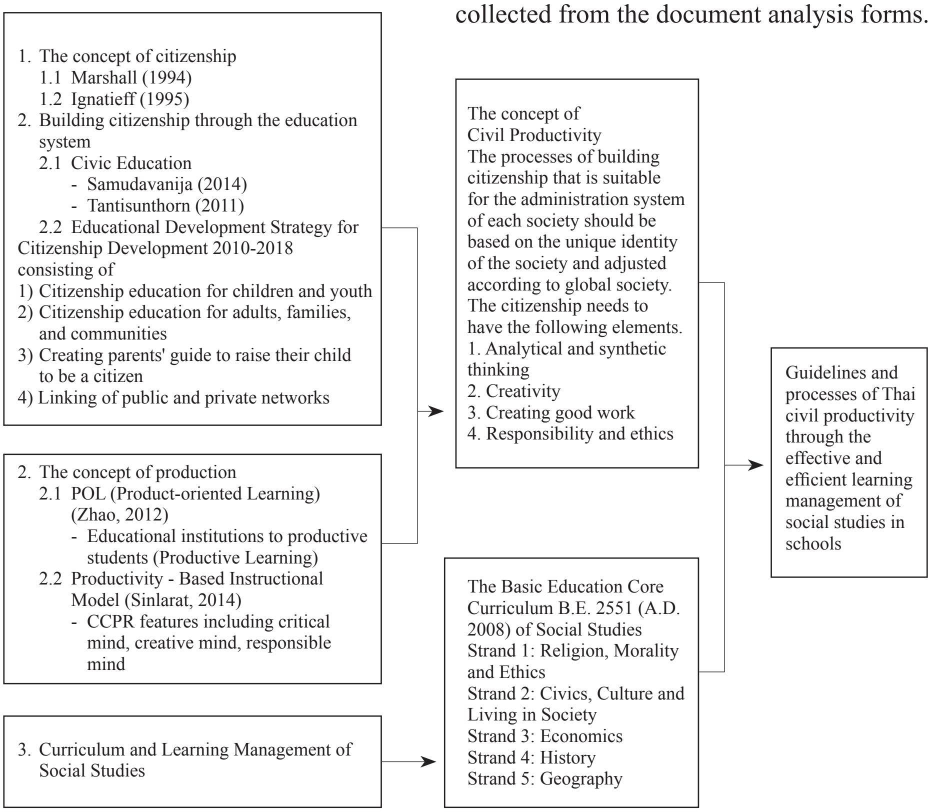

Figure 1 Conceptual Framework

Research methodology

1. Population and Samples

The population and samples consist of 124 social studies teachers in senior high schools and 5 educational supervisors who are responsible for all secondary educational service areas. There were 2 supervisors from Office 34 (Chiang Mai-Mae Hong Son), 1 supervisor from Office 35 (Lampang- Lamphun), 1 supervisor from Office 36 (Chiang Rai-Phayao) and 1 supervisor from Office 37 (Phrae-Nan).

2. Research Tools

2.1 Questionnaires were used to collect the data from social studies teachers.

2.2 Structured interview forms were used to collect the data from the educational supervisors.

2.3 Document analysis forms were used for analyzing the documents.

3. Collection of Data

3.1 The productivity concepts data was collected from the document analysis forms.

3.2 The data from the social studies teachers in senior high schools was collected via online google form.

3.3 The data about the understanding of the educational supervisors in building citizenship based on the civil productivity concept in social studies was collected by the structured interview form.

4. Data Analysis

4.1 Frequency and percentage was employed for quantitative data analysis.

4.2 Document analysis and the interview was employed for qualitative data analysis and the descriptive description was also used.

Results

The research results are divided into 2 parts as follows:

1. Part 1. The productivity concept is widespread in Thai academic circles. It is a learning model that focuses on effective learning that should be created by the learners (Sinlarat , 2014). The learning process should be changed to be practical and concrete increasing the productivity. The old learning methods need to be changed in order for new creative ways of learning, thinking, inventing and making new things with creativity. Additionally, we need to redefine the characteristics of learners by educating students to be anti-consumerists and wise consumers. Importantly, we should allow students to think and create new works to lead them to be the creative citizen in Thai society. Paitoon Sinlarat's CCPR Model features are as follows.

1. Critical Mind: In the consumer society, we have to develop students to have analytical ideas so that they can understand, learn, be strong, and not become victims of propaganda in terms of economic, politic, and social aspects.

2. Creative Mind: When we analyze anything, we should be creative and think of new things for yourself and society because there would be nothing new if we only analyze.

3. Productive Mind: When we think about new things, we should create them in concrete forms in order to develop new products.

4. Responsible Mind: When we think, analyze or create new things, there must be responsibility to the society and the environment as the basis of the moral ethics.

In 2012 Zhao proposed the POL (Product-oriented Learning) process focused on the production of educational institutions that influence productive students with 7 characteristics as follows:

1. To create soul and entrepreneurial skills for students.

2. To encourage students to be analytical thinkers, make business and marketing plans, assess values of success, convince teachers to accept the project proposals, and work alone or find a group of friends having the same interest.

3. Teachers should give advice to students during the learning process, provide raw materials for production, encourage them to become successful, and criticize the implementation during the experiment.

4. To invite the community or those who have higher experience to participate in giving guidance which is a link between the production of students and those who have higher experience.

5. To create the environment of learning emphasizing the productivity, and to find out what students like to do and develop them to be practical.

6. To encourage students to be self-learning persons for new creative products such as field trips and brainstorming activities.

7. To strengthen students to be able to analyze weaknesses, strengths, and raw materials quantity as an entrepreneur, and have skills to solve unexpected problems.

2. Part 2. Building citizen through the learning management of social studies subjects in Thai schools.

2.1 It was found that 61.3 percent or 67 social studies teachers in senior high schools were mostly female, 53.2 percent or 33 teachers were 21-30 years of age, 64.5 percent or 40 teachers graduated with a bachelor's degree in social studies major, 88.7 percent or 55 teachers received the Graduate Diploma Program in Teaching Profession, and 50 percent or 31 teachers worked for 1-5 years.

1) Chart 1 Results of Zhao's Product-oriented Learning (POL) process from learning management of social studies teachers

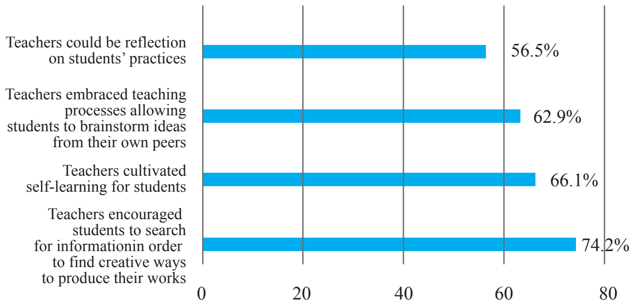

Figure 2 Results of Zhao's Product-oriented Learning (POL)

Chart 1 shows that 52.1 percent of POL management was conducted moderately, 74.2 percent of teachers encouraged students to search for information in order to find creative ways to produce their works. Then, teachers cultivated self-learning for students, teachers embraced teaching processes allowing students to brainstorm ideas from their own peers, and teachers could be a reflection on students' practices representing 66.1, 62.9 and 56.5 percent, respectively.

Figure 3 Result of studying Paitoon Sinlarat'sProductivity –Based Instructional Model

2) Chart 2 Results of studying Paitoon Sinlarat's Productivity-Based Instructional Model for Learning Management of Social Studies Teachers

Figure 3 indicates that the overall of this type of learning was moderate representing 54.2 percent. Also, there were 4 aspects having equal values, namely (1) students had strong analytical thinking in receiving news shared in the society reasonably (2) students had creativity for themselves and society (3) students could improve the created innovations or the original innovations and (4) students were responsible for their assignments representing 56.5 percent. Furthermore, students had analysing ideas about the global situations in terms of economic, political and social aspects representing 53.2 percent. Lastly, students were in an environment leading to creative thinking which represented 45.2 percent.

3) Results from recommendations for the learning process based on the civil productivity concepts of social studies teachers are presented in Chart 3, Chart 4 and Chart 5 as follows:

Figure 4 Results of studying skills that social studies teachers need to have for promoting the development of civil productivity

Figure 4 reveals that 33.9 percent of teachers considered teachers' ethics was the first priority, to be a good example and morality cultivator for learners. Next, teachers had ideology and creativity representing 24.2 percent and teachers encouraged students to learn by themselves representing 19.4 percent. The last aspect that was the least important shows that teachers were researchers and producers with visions representing 4.8 percent.

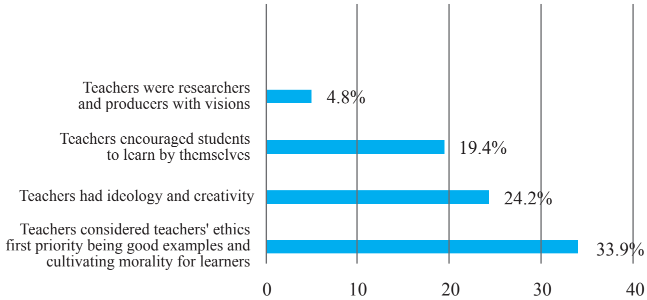

Figure 4 Results of studying skills that social studies teachers need to have for promoting the development of civil productivity

Figure 5 Results of studying about environmental factors supporting social studies teachers in learning management that focuses on effective civil productivity

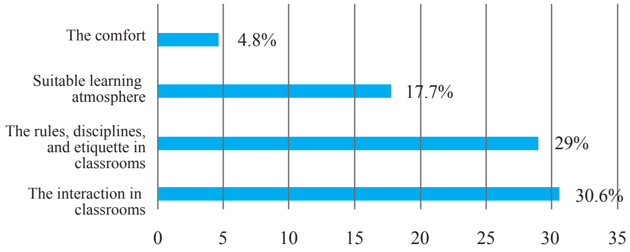

Figure 5 Results of studying about environmental factors supporting social studies teachers in learning management that focuses on effective civil productivity

Figure 5 presents that social studies teachers gave the highest importance to interaction in classrooms representing 30.6 percent. Next, there were rules, disciplines, and etiquette in classrooms representing 29 percent and there were suitable learning atmosphere representing 17.7 percent. The last aspect about the comfort representing 4.8 percent.

Figure 6 Results of studying about problems or obstacles that will make learning management for civil productivity unsuccessful

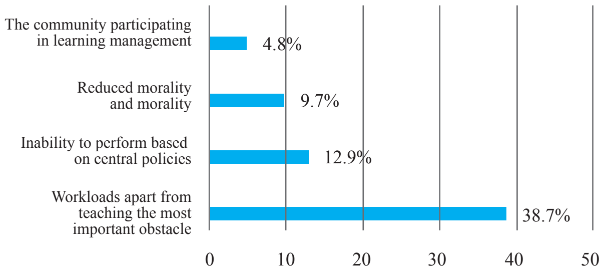

Figure 6 Results of studying about problems or obstacles that will make learning management for civil productivity unsuccessful

Figure 6 shows that social studies teachers considered workloads apart from teaching the most important obstacle representing 38.7 percent. Next were inability to perform based on central policies representing 12.9 percent and reduced morality representing 9.7 percent. The least obstacle was the community participating in learning management representing 4.8 percent.

2.2 The research results from the interview of the educational supervisors about building citizens according to the civil productivity concepts of social studies can be divided into 3 parts as follows.

Part 1 Opinions on building citizenship of the Thai education system can be divided into 2 issues by the word "citizen"; (1) Citizens, according to the laws of the country, are people who are able to take any action in accordance with the rights and duties based on the requirements of law and (2) Citizens with public mind are people who have good consciousness in realizing their duties and responsibilities, make sacrifice for others rather than themselves, embrace morals and ethics, and cooperate in solving various problems without violating legal requirements.

According to the current state of Thai society, it is very necessary to build youth to have both characteristics for growing up to become citizens with appropriate characteristics that are skilful, knowledgeable, reasonable, obey the laws and human rights. Therefore, the educational management should be based on the curriculum aims of the Department of Social Studies, Religions and Cultures and the quality standards of learners are established according to the Basic Education Core Curriculum to develop citizen characteristics in basic and additional courses called Citizenship. However, the civil productivity process should arise from foundations created by various institutions of social composition commenced with family, school, community, and country. Thinking about the identity should be based on the need of each locality that can contribute to the extension of enhancing human resource development. Furthermore, from assessing the education management system of the responsible areas, it was revealed that knowledge was provided to the youth effectively and the government sector supported the creation of new innovations for applying to the learners. These encourage students to become more interested in discovering their own needs and stimulating self-learning processes. Nevertheless, these depend on teachers' experience in giving guidance and improving the potential of learners.

Part 2 It was revealed that the understanding about the learning process based on the productivity concept was considered quite new as used in Thai education. The process seems to be good for creating a wide range of useful aspects to students' life in the long term because it consists of analytical thinking, creativity, production, and responsibility. All are components to build potential citizens who develop Thai society sustainably. However, creating understanding about the conceptual learning process takes time to learn and practice. Therefore, the study of the civil productivity concepts can be both easy and difficult depending on individual's perspective. Additionally, this may result in the communication of teaching processes of the social studies teachers that can cause the wrong concepts of teaching processes (Wannapaisan, 2016).

Part 3 It was found that applying the learning process based on the productivity concepts to the teaching processes for building citizens of the Thai educational system needs to have activities that students were interested in and willing to do. However, those activities should solve problems and definitely develop citizens matching the country situations at that time. This process of teaching requires time to create good attitudes among school leaders and social studies teachers for understanding the citizen building process. This may cause, nonetheless, the teacher to have anxiety. Hence, the cooperation among the family, the community, the personnel, and the executives is needed to facilitate and support teaching if the processes are implemented. Moreover, the civil productivity concepts have to limit steps to suit Thai society for creating clear understanding of all teachers for interpreting and teaching students effectively. Creating clear understanding, however, is likely to be difficult if teachers do not have enough time and lack continuity because there are frequent changes of Thai educational programs according to the government policies making schools and teachers to adjust themselves to keep up with the current situations.

Discussion

The discussion of the creation of citizenship based on the civil productivity concept through learning management of social studies subjects in schools can be divided into two issues.

1. According to the analysis of pieces of research related to the creation of Thailand's Civil Productivity through Thai educational system of Zhao (2012) and Sinlarat (2014) were similar in the aspect aiming to the productivity process. In other words, when the teachers transfer the knowledge to the students, the students should think critically and creatively. They should apply their prior knowledge to the new body of knowledge until they can produce or reflect the new body of knowledge to the society. However, this should be based on the foundation of social responsibility. This will reflect the productivity characteristics of the students known as productive learning which is the desired characteristics according to CCPR theory of Sinlarat (2014) who presented that changes of thoughts and the methodology. The new paradigm has led to the clear methodology which is to identify what the aim of the educational provision should be. The development should also bring new ideas and creativity. However, the process to promote citizenship of people in the society to have the desired characteristics should be integrated by people with authority in the society or policy makers to establish the guideline to create the citizenship of people in the society to people in practice of the guideline.

2. According to the ideas and the understanding of teachers and educational supervision on Thailand's Civil Productivity through learning management of social studies subjects in schools, social studies teachers have placed an importance on the awareness of ethics and morality. This was the first priority to promote to the students by the instruction process that were based on the concept of productivity through the interaction between the learners and the respects of rules and manners in the classroom before developing other skills. According to Productivity–Based Instructional Model, Sinlarat (2014) found that responsible mind was to encourage the students to have responsibility to themselves and to the society. He proposed that responsible mind can be promoted and developed to the subconscious level. This reflected that in the context of social studies teachers in Thailand, ethical and moral values were their priority to create citizenship. This was similar to the opinions of an educational supervisor who defined citizen as people who follow the law of the country and participation in social activities with a public mind. The educational supervisor believed that these were important for Thai society in the current conditions. According to the core curriculum of Thailand, social studies would consist of courses related to civil duty and ethics in learning strand 2 known as civil duty, culture, and social life. In addition, the 12 desired values were also the guideline for the students to follow and practice as this was the part of the policy to strengthen Thailand.

The data were similar with the social studies teachers and the educational supervisors who saw the importance of teaching about ethics in the process of creating citizens based on the concept of productivity. The social problems nowadays are related to behavioral problems. The number of youth involved with quarreling, stealing, drug addiction for youth aged between 15 years old but and not more than 18 years old is increasing.

According to the National Statistical Office (2015), it was found that the number of youth who committed crimes were increasing averagely 12.4 per year since 2011–2014. The number raised to 26.8 percent in 2012–2013. According to the increasing number, it reflected that the process to create the citizen was unable to promote ethics and morality among the youth. Furthermore, even though the tradition in Thai society expected that youth was of learning age, the number of teen mothers was increasing. According to the Office of Policy and Strategy, Office of the Permanent Secretary, Ministry of Public Health (National Statistical Office), the number of teen mothers has increased from 15.51 percent to 16.05 percent to 16.17 percent and to 16.59 percent, respectively between 2008 to 2012. This is what the society should be concerned about in the creation of ethics focused on citizens.

Suggestions

This research can be used to aid in the development guidelines of building citizenship through learning management based on the civil productivity concepts of the social studies as follows:

1. Policy Aspects: At the national level, this research can be used as a guideline to improve the citizenship by building curriculum to be suitable for the context of the Thai population and for the educational institutions' implementation. It is because the research data directly comes from the opinions of social studies teachers who teach about creating citizens and the educational supervisors who evaluate the learning management system in each part of the social studies in terms of wisdom, morality, and ethics. Therefore, students are able to boost their creative thinking. This research discusses about the guidelines and the processes for solving Thailand's education problems through the education system.

2. Learning Management: For further research, the study about the development of teachers' manuals for teaching in classroom should be conducted. This is not only applied in social studies but also applied in every subject for creating better understanding of the civil productivity concepts. Moreover, the educational supervisors can use the guidelines to help examine, evaluate and give advice to the educational institutions about building citizenship through the Thai education system.

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Self-esteem of Ethnic Students: Developing Measurement Model and Testing Measurement Invariance

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Abstract

The self-esteem of each individual affects a person's behavior, and it is important for daily living. The objectives of this study were (1) to investigate the fit of the self-esteem measurement model for ethnic students to the empirical data, (2) to test the measurement invariance of the self-esteem measurement model across diverse ethnic groups of students and (3) to compare the extent of self-esteem of ethnic students across their backgrounds. The participants were 688 ethnic high school students who were studying in the second semester of the academic year 2018 in four provinces. The instrument of this study was the 5-rating scale questionnaire with Cronbach's alpha reliability coefficients ranged from 0.90 to 0.95. Data analysis was done by descriptive statistics, interential statistics and structural equation modeling.

The results revealed that (1) the theoretical measurement model fitted the empirical data with acceptable fit indices (p = 0.14, CFI = 0.99, RMSEA = 0.04, SRMR = 0.01). (2) the measurement model of the self-esteem was for different groups of ethnic students, was invariant in terms of measurement error and (3) the comparison of the self-esteem levels of ethnic students across backgrounds indicated that the scales of satisfaction of self-ability, family and society had statistical significance at the level of .05.

Introduction

Youths are important generation. The educational institutes play an important role in providing education and training to youths to develop them in terms of knowledge and life skills so that they can live their own life and help drive the nation. Most importantly, they should be developed to secure self-esteem and belief in their knowledge and abilities to live in current society that is changing rapidly. Self-esteem is the main factor in the individual's behavior, and it is effective in developing abilities and behaviors. Moreover, according to the five-tier model of human needs, self-esteem is at level 4 that can refer to the psychological need for pride from own-self and others. (Groen & Hyland-Russel, 2010; Hoban & Hoban, 2004; Maslow, 1970) For this reason, the educational institutes should develop their learners to realize their own-worth when studying in the foundation years.

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The variable of self-esteem has been studied and developed continuously, whether it be humanities, social science, or education, because it is a variable that affects the individual's behaviors directly and indirectly. It also influences other psychological variables. Psychologically, self-esteem is agreed to be the main factor that affects children's emotions, society and learning. Self-esteem is valuable because it basically works as a mean of how to see life, how to adjust the status in society and emotion. People can be proud of themselves when they know how to accept their own selves by acknowledging the meaning what they are, in accordance with how they see themselves in an ideal or according to the way that they expect to be, concerning feelings, points of view, belief in their own identity and value and self-faith. Acknowledging the relationship with other people can help them to be proud of themselves. When people think they realize the truth equally or closely to themselves in an ideal, the more they have self-esteem. In other words, self-esteem is a difference between the variance of a person's real character and the character that they expect to be. Furthermore, different events or situations that happen in life have an influence on self-esteem. It can be explained that if the situation leads to achievement, it helps promote more self-esteem. On the contrary, the situation that leads to failure can stimulate feelings of incompetence or ineffectiveness. Consequently, it lowers the self-esteem of individuals. The character of a person that is gradually developed comes from the combination of thoughts, beliefs and experience. (Roger, 1951) This combination makes individuals have self-imagination and self-concept. They evaluate self-conception by judging from the accomplishment and the abilities according to their personal value. Eventually, self-esteem can be developed.

Self-esteem is a positive feeling the persons have toward themselves. People can respect and accept their own importance and abilities and try to use them to achieve their goals. Self-esteem allows people to have self-respect, self-faith as well as have respect to others. They can live their life with clear goals. It is considered that when comparing real selves with the one in an ideal, people can realize their self-esteem. People who see themselves contradict their real selves likely have low self-esteem. People who have thoughts in parallel with their ideal, they have high self-esteem.

People who have high self-esteem acknowledge their own selves with actual reality. They believe in their thoughts and are able to give clear reasons to support their decision, confident in their own actions, or decisions they have made. They are brave to think and express their ideas appropriately, having creative ideas and determination to achieve life goals. They have a responsibility not only for themselves but also for other people, have stable mental health and always be optimistic. They are able to maintain good relationships with others. Therefore, people who have high self-esteem can live a happy life, having less worry. They tend to be successful in life. Self-esteem works as a mental immune system in helping people to have energy when facing troubles, rendering energy to eliminate all badness in life. The factor to help people realize their own self-esteem is the opportunity to use their own ability to take care of themselves and to provide assistance to others, and then they receive some trustworthiness, importance and faith in return, most importantly the success of what they expect

Self-esteem is important for humans because it is the basic psychological need which helps humans live with pride. It can indicate the quality of life. Pride of own selves is the most important to create quality behaviors. People with pride are happy. They don't get stress or worry too easily. They are confident and realize that they have value and ability. These people are not shy about disclosing their own identity. They also have a feeling of high security, so criticism from other people cannot harm them, even though they use less self-protection strategy. They don't feel they are more inferior than others. They are confident in expressing ideas, likewise accepting the ideas of others. People with self-esteem are creative and active. They try hard to face all the problems and live their lives reasonably. They easily accept the difference between the individual and tend to be proud of themselves and usually be successful in life. Moreover, they know how to communicate properly and always begin their relationship with others. They have good mental and physical health. (Coopersmith, 1981; Jaengaksorn, 2018; Podesta, 2001)

Self-esteem affects human behaviors. As to say, a person who has high self-esteem is confident in expression, likely to be happy in his way of life, confident to speak, and makes a decision. On the other hand, a person with low self-esteem always encounters some problems in life, especially when living in a diverse society. This person is not courageous to express his thoughts and behavior, having a feeling of an inferiority complex and lower self-evaluation comparing to others. This is considered a crucial problem of existence in society. (Neustadt, Chamorro-Premuzic & Furnham 2006), The principle of self-esteem development for youths is to create activities that can promote their self-decision as well as encourage them to create real achievement. The activities should involve the discussion, alternative choices and reflection of their thoughts about each decision they have made. Activities should provide encouragement when they feel despairing and regularly give them motivation. (Department of Mental Health, 2000; Katz, 1993) It is suggested that self-esteem is the major factor of various behaviors of individuals. It also affects the abilities to face depression, all worry and how to handle all problems in life.

The present society consists of diverse members, particularly the northern part of Thailand, where there are many ethnic groups living in the school areas of Chiang Mai, Chiang Rai, Lamphun and Mae Hong Son. Consequently, each school of these areas has students who are from various ethnic backgrounds, having their own identity and culture, including Shan, Lua, Lawa, Karen, Pga K'nyau, Paluang, Dara-ang, Yang, Akka, Lahu, Hmong, Lisu, Kachin as well as Burmese, Laos, and Cambodian who migrated to work in Thailand. These groups are judged by other students that they are the minority, and they are mocked among students. Some of them have been looked down on and bullied. Due to these reasons, ethnic students lack an opportunity to express their potentials in full effort. Most of them are not confident in their conduct and social life. These problems reduce human's value and equality. Besides, it reflects that the ethnic group students may be seen as low self-esteem.

Previous researches haven't directly shown the studies about the scales of self-esteem of ethnic people who have a special identity. Therefore, it is a good opportunity to conduct the study about the level of their self-esteem, particularly with the students at high school level who are teenage and found themselves busy preparing for university admission, where the learning is so much different from the schools. The obtained results will be used as fundamental data for developing the self-esteem of ethnic students. Moreover, the data can be used for setting a plan to adjust behaviors and to encourage self-esteem among youth who will play an important role in developing community, society, and the country. This study aims to develop the measurement model to use as an instrument to measure the states of self-ability awareness of ethnic students and to test the measurement invariance in order to have a measurement model that can be used with students from various tribes whether they are different from each other or not with the purpose of developing them to be beneficially used in the future.

Objectives

1. To investigate the fit of the self-esteem measurement model for ethnic students to the empirical data.

2. To test the measurement invariance of the self-esteem measurement model across diverse ethnic groups of students.

3. To compare the extent of self-esteem of ethnic students across their backgrounds.

Research Scope

The populations of this research were high school students who were studying in Chiang Mai, Chiang Rai, Lamphun, and Mae Hong Son provinces, which are provinces with largest number of ethnic students. The ethnic students were divided into 3 groups according to their resemble backgrounds: Plane land group (Shan), Hill tribe group (Karen, Hmong, Akka, Lahu) (The Princess Maha Chakri Sirindhorn Anthropology Centre, 2018), and Displaced person/migrants/moved with family (Burmese, Laos, Cambodian). The high school students were chosen because they were at the stage of life with a full of worry about their self-personality, usually compare themselves with others. Some of them are doubtful about their own backgrounds. Most importantly, it was a transition period for students at this educational level to be under pressure in preparing themselves for university admission, where they might come across various societies that are different from what they have. Therefore, the information obtained from this study would be beneficial for planning to develop students' pride.

Conceptual Framework

The framework of this research is derived from related literature, suggesting that self-esteem consisted of 3 elements, including (1) self-ability satisfaction, (2) Self-family satisfaction and (3) Society satisfaction. (Abraham, 2008; CooperSmite, 1981; Jaengaksorn, 2018; Neustadt, Chamorro-Premuzic, & Furnham, 2006; Stinson, Logel, Zanna, Holmes, Cameron, Wood & Spencer 2008; Weisbuch, Sinclair, Skorinko & Eccleston, 2008;

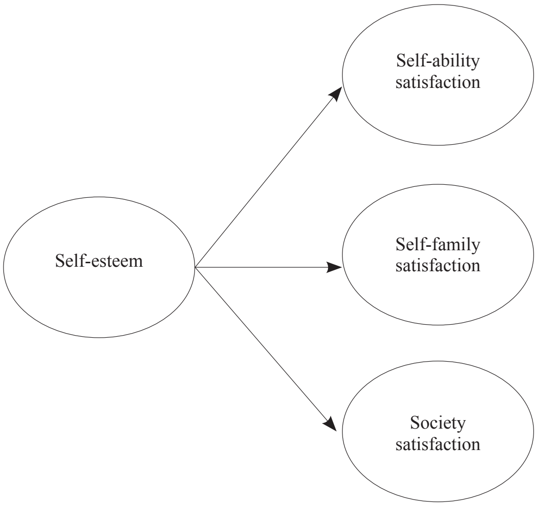


Figure 1 Conceptual Framework

Research methodology

The population was ethnic high school students (grade 10-12) in Chiang Mai, Chiang Rai, Lamphun, and Mae Hong Son provinces, enrolled in semester 2 of the academic year 2018.

The participants were ethnic high school students. The size of the participants was determined for structural equation modeling (SEM) with requires a large sample size. In order to reduce the problem of the deviation of the normal distribution, the ratio scale between the size of the participants and parameter estimation was used. The size of the participations consisted of at least 10-20 participants per 1 parameter. (Hair et al., 2006). There were 6 parameters being estimated in this research. Therefore, at least 120 participants was considered enough to provide reliable estimates. Because of low response rate, the author considered the number of sample of 800 in order to increase the adequate sample size and random sampling was used.

1. Research instrument and data collection

The research instrument of Jaengaksorn (2018) was adopted in this research. The instrument was a questionnaire concerning the self-esteem of ethnic students. It was divided into 2 parts. Part1 consisted of the basic information of the respondents. Part 2 consisted of questions reflecting the self-esteem of ethnic students. A 5-point Likert Rating scales was used , where 1 = 'not at all close to myself,' 2 = 'slightly close to myself,' 3 = 'moderately close to myself', 4 = 'very close to myself', and 5 = 'extremely close to myself'. The Cronbach's alpha coefficients for the three dimensions of the self-esteem, ranged from 0.90 to 0.95. The detail of the instrument and sample of questions are shown in Table 1.

Table 1 Details of the instrument.

instrument	Basic elements	Samples of questions
1	Society satisfaction (Cronbach's Alpha = 0.94)	My self-ability is not different from others I sometimes want to become the other person. (*negative) I am confident in speaking in public.
2	Self-family satisfaction (Cronbach's Alpha = 0.95)	I am very lucky to be born as one of the members of the family. Many times I feel disgraceful to say I am from highland. (*negative) My father, mother, or guardian take good care of me. It is not different from another family even though my house is in a remote area.
3	Society satisfaction (Cronbach's Alpha = 0.94)	I don't see myself different from other people in society. I am brave to get to know the strangers. When I have a chance, I will dress in my tribal costumes.
*Instrument Reliability (Cronbach's Alpha = 0.95)		

Source: Jaengaksorn (2018)

2. Data Collection

Data was collected from 688 high school students. The highest number of respondents was 11th grade students (34.30%). There were 348 students of the middle-sized schools (50.60%), 252 migrant students from Myanmar, Laos, and Cambodia living with their parents (36.60%) and followed by the hill tribe students (Karen, Hmong, Akka, Lahu). There were 338 students who had a GPA between 3.00-3.49 (49.10%), followed by those having a GPA of 3.50 or above 3.50 (29.70%). The detail is shown in Table 2.

Table 2 Samples classified by educational levels

Data		Class levels 10 (%)	11 (%)	12 (%)	total
School size	Middle	121 (52.40)	119 (50.40)	108 (48.90)	348 (50.60)
	Large	110 (47.60)	117 (49.60)	113 (51.10)	340 (49.40)
Total		**231 (100.00)**	**236 (100.00)**	**221 (100.00)**	**688 (100.00)**
Ethnic groups	Thai Plane land (Shan)	54 (23.40)	83 (35.20)	80 (36.20)	217 (31.60)
	Thai Hill tribes (Karen, Hmong, Akka, Lahu)	91 (39.40)	65 (27.50)	63 (28.50)	219 (31.80)
	Migrants/moved with parents (Burmese, Laos, Cambodian)	86 (37.20)	88 (37.30)	78 (35.30)	252 (36.60)
Total		**231 (100.00)**	**236 (100.00)**	**221 (100.00)**	**688 (100.00)**

Table 2 (Continued)

GPA	Lower than 2.50	13 (5.60)	6 (2.50)	9 (4.10)	28 (4.10)
	2.50 - 2.99	43 (18.60)	45 (19.10)	30 (13.60)	118 (17.20)
	3.00 - 3.49	109 (47.20)	111 (47.00)	118 (53.40)	338 (49.10)
	3.50 and upper	66 (28.60)	74 (31.40)	64 (29.00)	204 (29.70)
Total		**231 (100.00)**	**236 (100.00)**	**221 (100.00)**	**688 (100.00)**

Results

The results were divided into 3 parts: (1) The results of the examination of the fit between the self-esteem measurement model and the empirical data., (2) The results of measurement invariance of the self-esteem measurement model acrossdifferent ethnic groups of students, (3) The comparison of self-esteem ethnic students across their backgrounds. The findings are as follows;

1. Part 1: The results of the examination of the fit between the self-esteem measurement model and the empirical data.

The correlation coefficients among the 3 variables; (1) self-ability satisfaction, (2) self-family satisfaction and (3) society satisfaction ranged from 0.80-0.84 and were statistically significant.. The detail is shown in Table 3.

Table 3 The correlation coefficients among variables

variables	1	2	3
1. Self-ability satisfaction	1.00		
2. Self-family satisfaction	.84*	1.00	
3. Society satisfaction	.80*	.80*	1.00
Mean	3.70	3.69	3.79
S.D.	0.61	0.65	0.65

* $p < .05$

The measurement model of self-esteem for ethnic students was tested using confirmatory factor analysis. This model consisted of 3 factors: self-ability, self-family, and society satisfaction. The fit indices included Chi-square = 2.13, Probability = 0.14, RMSEA = 0.04, indicating that the theoretical measurement model fitted the empirical data, as it is shown in Table 4 and Figure 2.

Table 4 The confirmatory factor analysis of the self-esteem measurement model of ethnic students.

Factors	factor loading	SE	t	R^2
Self-ability satisfaction	0.93	0.00	241.18*	0.87
Self-family satisfaction	0.91	0.01	103.34*	0.83
Society satisfaction	0.87	0.01	77.35*	0.75

$x^2(1, n = 688) = 2.13$, $p = 0.14$, CFI = 0.99, RMSEA = 0.04, SRMR = .01

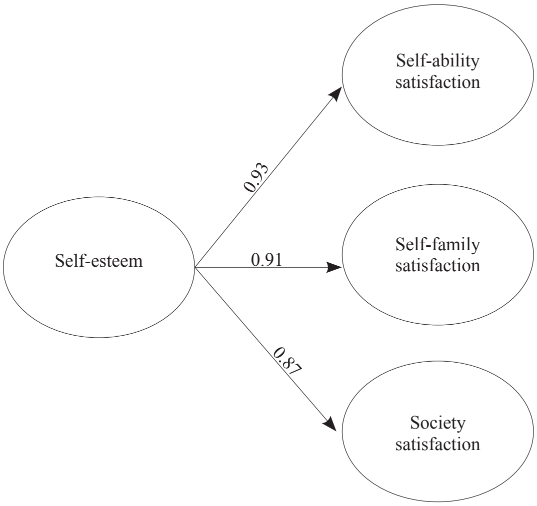


Figure 2 The self-esteem measurement model

2. Part 2: The results of measurement invariance of the self-esteem measurement model across-different ethnic groups of students.

The results of testing measurement invariance revealed that the measurement model was invariant in form, factor loading and error variance. However, there was a variation in the parameter variability of latent variables across groups of ethnic students. The detail is shown in Table 5.

Table 5 Testing measurement of invariance of the research measurement model in schools of different contexts

Hypothesis	χ^2	*df*	χ^2/df	*p*	CFI	RMSEA	SRMR
1. H_{form}	3.77	4	0.94	0.44	1.00	0.00	0.01
2. $H_{form, \Lambda x}$	3.89	8	0.49	0.87	1.00	0.00	0.01
3. $H_{form, \Lambda x, \Theta}$	7.17	14	0.51	0.93	1.00	0.00	0.04
4. $H_{form, \Lambda x, \Theta, \xi}$	16.08	16	1.00	0.45	1.00	0.01	0.25
Hypothesis Test Results							
Hypothesis	**$\Delta\chi^2$**	**Δdf**	***p***	**Results**			
2-1	0.13	4	0.99	The model is invariant in form and factor loading.			
3-2	3.28	6	0.77	The model is invariant in form, factor loading, and error variance.			
4-3	8.91	2	0.01	The model has variation in the parameter variability of latent variables			

3. Part 3: The comparison of self-esteem ethnic students across their backgrounds.

The results of the comparison of self-esteem among ethnic students across their ethnic groups showed that self-ability satisfaction, self-family satisfaction, and society satisfaction were at a high level. The matrix variance-covariances of self-ability, self-family and society satisfaction were statistically different across ethnic groupsat .05. (F = 1.63 df_1= 48 df_2 = 553852.91 p = .00) The detail is shown in Table 6.

Table 6 The comparison of the scales of self-esteem among ethnic group students distinguished by their backgrounds

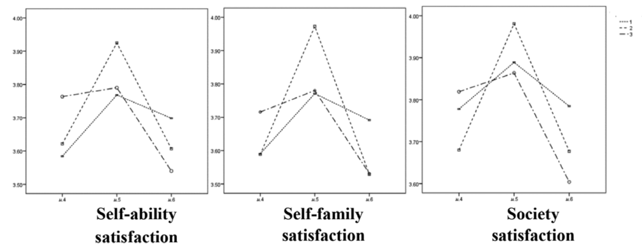
Ethnic group	grade	n	Self-ability satisfaction		Self-family satisfaction		Society satisfaction	
			M	S.D.	M	S.D.	M	S.D.
Thai	10	54	3.58	0.63	3.59	0.71	3.78	0.68
Plane	11	83	3.77	0.71	3.77	0.71	3.89	0.75
land	12	80	3.70	0.58	3.69	0.59	3.78	0.57
	Total	**217**	**3.70**	**0.64**	**3.70**	**0.67**	**3.82**	**0.67**
Hill	10	91	3.62	0.53	3.59	0.55	3.68	0.56
tribes	11	65	3.92	0.58	3.97	0.62	3.98	0.68
	12	63	3.61	0.48	3.53	0.50	3.68	0.49
	Total	**219**	**3.71**	**0.55**	**3.69**	**0.59**	**3.77**	**0.60**
Migrants	10	86	3.76	0.59	3.72	0.65	3.82	0.67
	11	88	3.79	0.70	3.78	0.76	3.86	0.74
	12	78	3.54	0.61	3.53	0.63	3.60	0.57
	Total	**252**	**3.70**	**0.64**	**3.68**	**0.69**	**3.77**	**0.67**
Total	10	231	3.67	0.58	3.64	0.63	3.75	0.63
	11	236	3.82	0.67	3.83	0.71	3.90	0.73
	12	221	3.62	0.57	3.59	0.58	3.69	0.55
	Total	**688**	**3.70**	**0.61**	**3.69**	**0.65**	**3.79**	**0.65**

Remarks: *Box's M* = 79.30 F = 1.63 df_1 = 48 df_2 = 553852.91 p = .00
Bartlett's: Approx. Chi-Square = 1599.55 df = 5 p = .00
Levene's Test: Side 1 F = 2.52 df_1 = 8 df_2 = 679 p =.01, Side 2 F = 2.36 df_1 = 8 df_2 = 679
p = .02, Side 3 F = 2.14 df_1 = 8 df_2 = 679 p = .03

The results of the MANOVA analysis found that the Vector Mean of self-esteem of each ethnic group was statistically different across grade at 0.5. (Roy's Largest Root Value = 0.02, F = 2.63, Hypothesis df = 4, Error df = 679, p = 0.03.) The self-ability satisfaction of 10th grade students, plane land group (Shan) was the lowest. However, the self-ability satisfaction of the 12th graders (Matthayom 6). was at the highest The 11th grade (Matthayom 5). students of hill tribe group (Karen, Hmong, Akka, Lisu) had the highest self-ability satisfaction. The three groups of students had the highest self-family satisfaction when they were in grade 11th (Matthayom 5), as same as society satisfaction. On the other hand, self-ability, self-family, and society satisfaction were lower from grade 11th (Matthayom 5) when all 3 group students moved to study in 12th grade (Matthayom 6). The detail is shown in Table 7 and Figure 3.

Table 7 The analysis of MANOVA on self-esteem distinguished by their backgrounds

Variables		Value	F	Hypothesis df	Error df	P
grade	Pillai's Trace	0.03	3.56	6	1356	0.00
	Wilks' Lambda	0.97	3.57	6	1354	0.00
	Hotelling's Trace	0.03	3.59	6	1352	0.00
	Roy's Largest Root	0.03	6.95	3	678	0.00
Ethnic groups	Pillai's Trace	0.01	0.76	6	1356	0.60
	Wilks' Lambda	0.99	0.76	6	1354	0.60
	Hotelling's Trace	0.01	0.76	6	1352	0.60
	Roy's Largest Root	0.01	1.48	3	678	0.22
grade * ethnic groups	Pillai's Trace	0.02	1.24	12	2037	0.25
	Wilks' Lambda	0.98	1.24	12	1791.465	0.25
	Hotelling's Trace	0.02	1.24	12	2027	0.25
	Roy's Largest Root	0.02	2.63	4	679	0.03*



............Group 1 Plane land (shan)
_ _ _ _ _ _Group 2 Hill tribe (Karen, Hmong, Akka, Lisu)
_._._._._Group 3 Displaced/Migrants/moved with parents (Burmese, Laos, Cambodian)

Figure 3 The comparison of self-esteem distinguished by ethnic tribes

Discussion

1. The self-esteem scale, which is subdivided into three components compsrising self-ability satisfaction, self-family satisfaction, and society satisfaction, was used to measure the self-esteem of ethnic students in this study. The validity was tested using the confirmatory factor analysis, suggesting that the highest weight was given to the component of self-ability satisfaction, which is in line with the self-esteem concept (Abraham, 2008; Coopersmith, 1981; Maslow, 1970)

2. The testing of measurement invariance of the self-esteem scale of students of different ethnic groups revealed that the scale was invariant in terms of shape, factor loading parameter, and measurement error parameter, but it was variant in terms of variance parameter of latent variables. Based on the test results, it was concluded that the measurement of the self-esteem of students could be used to provide valid score among ethnic groups of, despite ethnic differences. Specifically, the measurement models of self-esteem among the three

ethnic groups were identical, with the expection that the three groups had differ variation among the three subdimension of self-esteem

3. The results of the analysis of the self-esteem of ethnic students with regard to the self-ability component showed that the students recognized their self-esteem and viewed themselves as not significantly different from their peers. Besides, almost all ethnic students in this study were able to study without difficulty and were content with their own selves at a high level. This corresponded with the analysis of the components which found that the weight of the self-steem component was given the most, reflecting that ethnic students did not feel that they were different from other groups of students and saw that their potential was comparable to students in general regardless of grade level. In addition, it showed that ethnic students were proud of their origin and satisfied with their family's financial status. This could be due to the fact that the ethnic student participants had been studying in school for a long time from the elementary level to their present level, so they did not see themselves as different from other students. In addition, ethnic students were presented with factors to help them feel proud of themselves and opportunities to use their abilities to care for themselves and support others, gain trust, and achieve their goals. These factors and opportunities helped to promote the self-esteem of ethnic students. (Coopersmith, 1981; Derlega, Winstead & Jones, 2005; Papadopoulos, 2014; Podesta, 2001; Roger, 1951)

Suggestions

1. The results showed that 10^{th} - 12^{th} grade students (Matthayom 4 - 6) had low self-esteem in all components of the scale (self-ability satisfaction, self-family satisfaction, and social satisfaction). Therefore, it is suggested that schools should pay attention to these students, especially 12^{th} graders (Matthayom 6) who will experience changes in a number of aspects as they pursue their study at the higher education level. If students of ethnic groups have not developed their self-esteem by the time they enter larger educational institutes with more variety in student backgrounds, they shall experience problems in education and daily living.

2. In measuring the levels of self-esteem of ethnic students, it is recommended that priority be given to the recognition of one's own self-ability satisfaction, as reflected on the weight analysis of the three components of the self-esteem scale and the concept of self-esteem development which focuses on the importance of recognizing one's own self-esteem as it is developed more easily when compared to family appreciation and social appreciation. However, the school should support and promote students' self-esteem in all components.

3. Further research should be conducted to determine which factors cause changes in the self-esteem levels of students in different grades in forms of a long-term study, which analyzes the development of self-esteem in students since starting the junior high school level to completing high school. In the meantime, data collection should be in-depth, employing both quantitative and qualitative methods in order to provide clear explanations and more details from the study.

4. The participants in this study were limited to ethnic students from Chiang Mai, Chiang Rai, Lamphun, and Mae Hong Son, which are provinces concentrated with students of ethnic backgrounds. Further studies should be done in all regions of the country in order to obtain comprehensive information that can be used to explain the overall phenomenon of the country and to compare differences among students in different educational zones with diverse backgrounds in terms of religion, language, and other aspects.

5. It is interesting to conduct further study to understand why 12^{th} grade (Matthayom 6) students had lower self-esteem compared to the 10^{th} and 11^{th} grade (Matthayom 4-5) students.

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The Consumer Decision Making Style Influencing SKU Rationalization within Higher Education Institutions in Amphoe Mueang, Nakhon Pathom

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Abstract

The purpose of this research were (1) to study the relationship of confirmatory factor analysis of the consumer decision making style influencing Stock Keeping Unit (SKU) rationalization within higher education institutions in Amphoe Mueang, Nakhon Pathom and (2) to study the decision making approach for selecting appropriate amount of SKUs for products or goods in the convenience store business. Furthermore, the samples in this study were collected which including students and staff who are in the higher education institutions in Amphoe Muang, Nakhon Pathom with a total number of 660 persons and data were collected by using questionnaire. The statistics used in this study consisted of descriptive statistics which are frequency, percentage, average, standard deviation and statistical hypothesis testing, structural equation modelling (SEM), relationship model between consumer decision making style and SKU Rationalization by AMOS program.

Introduction

Currently, convenience store business is a modern retail business with the most market share from the traditional retailers. The major cause of changes is changing the lifestyle of consumers which currently exphasizes on convenient and modernity of lifestyles, high quality and variety of products, quick services, rushing through life, and size of family changed to a small size which lead to change in consumer behavior. Furthermore, consumers may buy more products from convenience stores in the future, thus, the convenience store business has a high expansion and competitive rate to compete for market share. Effective management is a key factor that makes the convenience store business success by modifying strategies in various fields to change the consumption habits of the target audience in order to meet the needs of consumers and the sustainable competitiveness.

Inventory management is one of the key strategies of logistics that will enhance the competitiveness of the convenience store business. Furthermore, convenience stores have restrictions on the size of the area (limited space) resulting in the selection of products to be sold, which regards to consumer demands. The selection of products that do not meet the needs of consumers which makes the goods unable to be sold out at the right amount, resulting in excessive inventory. According to the previous studies (Malinowski, Karwana, Sunb & Pintoc, 2018; Hübner, 2017), selecting products the can meets the needs of consumers must have a variety of goods

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SKU in the right quantities. SKU refer to the number of unique identification products for the purpose of inventory management. Besides, the products that have few SKUs or unable to meet the needs of consumers resulting in the loss of profits and lack of trust. On the other hand, excessive SKUs can cost in the administrative expense system. The product variety management is therefore becoming an essential research topic and is often analyzed from the perspective of SKU rationalization. Particularly in convenience stores where space is limited, the selection of goods for sale must have a SKU for continuous flow and maximize profits.

However, it is not easy to find the appropriate quantity of each product because there are diversity in demand and behaviour of consumers. Thus, the selection of products that meet the needs of each consumer group is relied on the consumer decision making style, which is considered as a tool that helps to better understand the behavior and needs of consumers. Furthermore, the consumer decision making style are permanently attached to the character or personality of the consumer as well. The concept is similar to the concept of psychological or personality trait of humans (Sproles & Kendall, 1986; Walsh, Hennig-Thurau, Wayne-Mitchell & Wiedmann, 2001; Tai, 2005). In 1986, Sproles and Kendall developed a tool to measure and evaluate consumer decision-making behaviors called the Consumer Styles Inventory (CSI). The consumer decision-making behaviors can be described in 8 forms which are Perfectionism, brand consciousness, novelty-fashion consciousness, recreational, price-value consciousness, impulsiveness, confused by over choice and brand-loyal/habitual. Identifying the consumer characteristics can make convenience store to create profiles of each consumer decision that able to fulfill customer needs.

As mentioned above, researcher believes that selling in convenience stores is important which is also considered as a way to improve the efficiency of convenience store management. Therefore, in this study the researcher studies the consumer decision making style in convenience store business within higher education institutions by studying the different individual factors that affect consumer purchasing decisions and the relationships that affect the consumer decision making style in 8 forms using structural equation modeling (SEM). Finally, the purpose of this study is to understand consumer decision making style and to analyze the appropriate number of SKUs for goods in a convenience store business.

Objectives

1. To study the relationship of confirmatory factor analysis of the consumer decision making style influencing SKU rationalization within higher education institutions in Amphoe Mueang, Nakhon Pathom.

2. To study the decision making approach for selecting appropriate amount of SKUs for goods in the convenience store business.

Conceptual Framework

The research of the Consumer Decision Making Style Influencing SKU Rationalization within Higher Education Institutions in Amphoe Mueang, Nakhon Pathom has scopes of content are listed as follow.

1. Consumer Styles Inventory (CSI), this measurement model analysis consists of 8 observe variables which are Habitual and Brand loyal (CSI1), Brand conscious/ Price Equals Quality Consumer (CSI2), Price and Value-for-money shopping consciousness (CSI3), Recreational/ Hedonistic (CSI4), Impulsive/ Careless Consumer (CSI5), Novelty-fashion consciousness (CSI6) Confused by over-choice (CSI7), and Perfectionist/ High quality conscious (CSI8).

2. SKU rationalization (SKU), this measurement model analysis consists of 3 observe variables which are factor in Product Assortment (SKU1), factor in Product Availability (SKU2), and factor in Customer satisfaction (SKU3) as shown in figure 1.

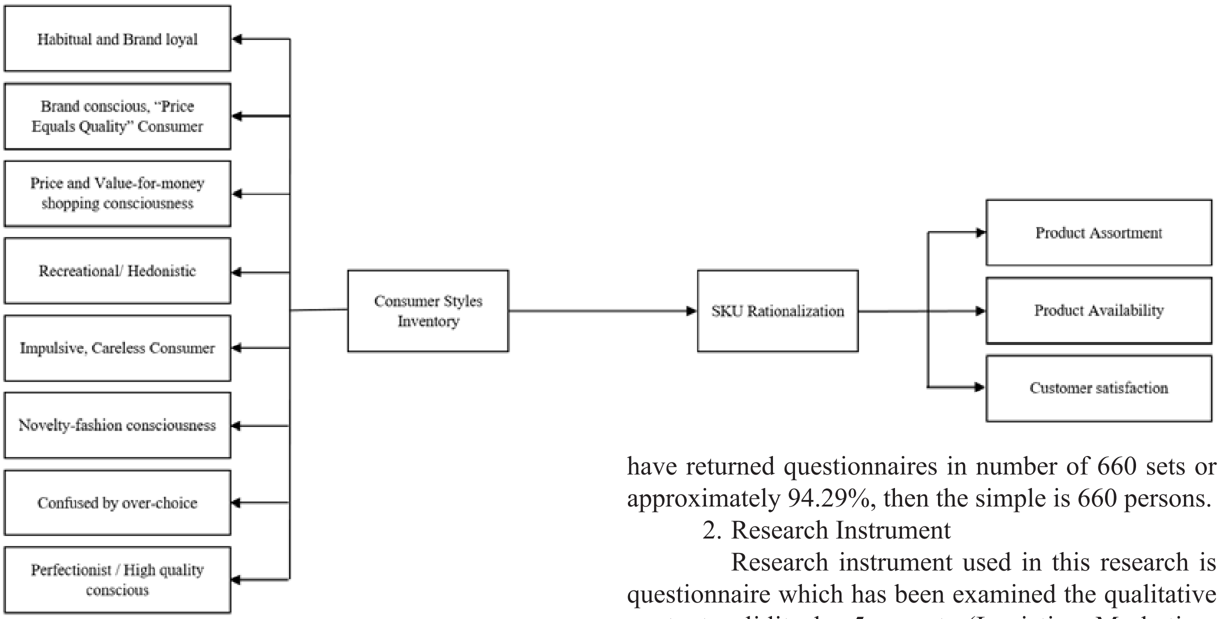

Figure 1 Conceptual Framework

Research methodology

1. Population and Sample

Population in this research are students and staff in the higher education institutions in Amphoe Muang, Nakhon Pathom in the academic year of 2018 which are including Nakhon Pathom Rajabhat University and Silpakorn University, Sanam Chandra Palace Campus, with the total number of 35,651 persons. For determining the suitability of the samples used in this research, the researcher has considered the size of the sample that is appropriated for analyzing data with the AMOS program by using Structural Equation Modeling (SEM), the technical statistics tool. The sample is defined by following the rule of thumb theory as suggested by Schumacker & Lomax (1996); Hair, Anderson, Tatham & Black (1998). Therefore, the size of samples approximately 10-20 persons per one variable (Wirachai, 1999). In this study, the researcher has observe variables in the model of 11 variables, the appropriate and sufficient size of samples should be at least 10 x 11 = 110 to 20 x 11 = 220. In this study, the researcher has observed variables in the model of 11 variables, the appropriate and sufficient size of samples should be at least 10 x 11 = 110 to 20 x 11 = 220. So, the size of sample in this research is 220 persons. However, the researcher has distributed more than a sample size of 700 sets to prevent unresponsive questionnaires. The respondents have returned questionnaires in number of 660 sets or approximately 94.29%, then the simple is 660 persons.

2. Research Instrument

Research instrument used in this research is questionnaire which has been examined the qualitative content validity by 5 experts (Logistics, Marketing, Statistics, Questionnaire and Research methodology) in order to appraise for the IOC (Item of objective congruence index) between questions and attributes according to the objectives of the research to measure the consistency of the text with the operational definition. The results from consistency analysis by the experts found that from the 33 questions, all questions have ranged from 0.6 to 1.0, which is greater than 0.5 and considered as validation (Rovinelli & Hambleton, 1977; Osterlind, 2002). Then, the researcher measured reliability and internal consistency with Cronbach's Alpha Coefficient by applying the questionnaires that have been revised, following the instructions of the elders, to try it out with the samples of 33 persons, which was not a sample of research by selecting the questions with alpha values from 0.70 and above, and the total is 0.942.

3. Collection of Data

Researcher used data collection through questionnaire and online inquiry about the opinion of consumer decision making style influencing SKU rationalization from the students and staff within Higher Education Institutions in Amphoe Mueang, Nakhon Pathom with the total number of 660 persons.

4. Data Analysis

The data were analyzed by statistical software and the statistical methods use in data analyze which mean ($\bar{x}$), standard deviation (S.D.), skewness, kurtosis, correlation coefficient, confirmatory factor analysis, and structural equation modeling.

Results

The respondents have a comment on the consumer decision making style and SKU rationalization from the characteristics of observe variable statistical analysis found that the factor of the consumer decision making style and SKU rationalization has high level of an average and the standard deviation (S.D) has an average not exceeding 1, from the values indicate that the data is closely distributed to an average. Furthermore, the skewness or asymmetry of the distribution as a whole, it can see that the variable in the model mostly are in the upper left corner (negative deviation) which indicates that the data of most variables are higher than the average, the values of skewness are between -0.673 to 0.096. For the value of kurtosis or the height of the distribution, it can see that the value in the model mostly has the value of kurtosis lower than normal (Platy Kurtic). However, the value of calculated kurtosis are less than zero or negative which indicates that the observe variable is distributed in a fair obtuse configuration or slightly curved or considerably distributed of information. Moreover, the values of skewness are between -0.514 to 0.197. Nevertheless, when considering the skewness and kurtosis values found that those values have only a minor difference from zero, thereby can be implied that they are closed to zero and has a normal distribution. Therefore, it is appropriate for structural equation model analysis which is shown in table 1.

Table 1 The average values of consumer decision making style and SKU rationalization

	Average	S.D.	Result	Skew-ness	Kurtosis
Consumer Styles Inventory					
(CSI1) Habitual and Brand loyal	4.30	0.61	Always	-.673	-.079
(CSI2) Brand conscious, "Price Equals Quality" Consumer	3.54	0.78	Usually	-.069	-.120
(CSI3) Price and Value-for-money shopping consciousness	3.97	0.73	Usually	-.489	.197
(CSI4) Recreational/ Hedonistic	3.19	0.98	Occasionally	-.073	-.344
(CSI5) Impulsive, Careless Consumer	3.03	1.00	Occasionally	.069	-.490
(CSI6) Novelty-fashion consciousness	3.21	0.91	Occasionally	.096	-.329
(CSI7) Confused by over-choice	3.71	0.66	Usually	.018	-.078
(CSI8) Perfectionist / High quality conscious	2.95	1.02	Occasionally	.042	-.514
Total Average	**3.49**	**0.84**	**Usually**		
SKU rationalization					
(SKU1) Product Assortment	3.61	0.79	Usually	-.075	-.221
(SKU2) Product Availability	3.35	0.85	Occasionally	-.123	.159
(SKU3) Customer satisfaction	3.76	0.85	Usually	-.336	-.167
Total Average	**3.57**	**0.83**	**Usually**		

Results of passive variables confirmatory factor analysis

1. The development of consumer decision making style

This model analysis of measurement consists of 8 observe variables which are Habitual and Brand loyal, Brand conscious/Price Equals Quality Consumer, Price and Value-for-money shopping consciousness, Recreational/Hedonistic, Impulsive/Careless Consumer, Novelty-fashion consciousness, Confused by over-choice and Perfectionist /High quality conscious. First affirmative element analysis result of consumer decision making style by confirmatory factor analysis to confirm the indication of the variable's element in the measurement model indicated that the weight of the composition of all variables were statistically significant (P<.01) as an important indicator that indicates the consumer decision making style within higher education institutions in Amphoe Mueang, Nakhon Pathom. As a result, the mentioned variables have element weight values in range between 0.20 to 0.82 which can be implied that the variables are in an excellent condition. In the meantime, the value of R-squared can be found in range between 0.04-0.67 which is shown that the derived model can be explained the variation of the response variable value as well which is shown in figure 2 and table 2, respectively.

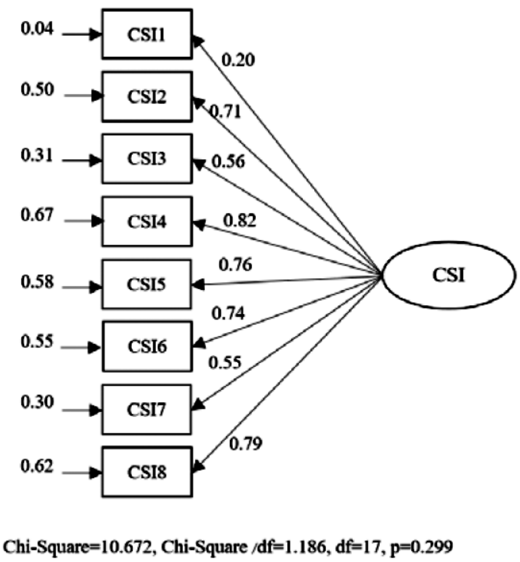

Figure 2 Consumer decision making style measurement model

Table 2 The element weight value of the latent variable to the observe variable of independent variables

Latent Variable	Observe Variable	Element Weight Value
Consumer Styles Inventory	1. Habitual and Brand loyal	0.197
	2. Brand conscious, "Price Equals Quality" Consumer	0.709
	3. Price and Value-for-money shopping consciousness	0.557
	4. Recreational/ Hedonistic	0.817
	5. Impulsive/Careless Consumer	0.764
	6. Novelty-fashion consciousness	0.744
	7. Confused by over-choice	0.552
	8. Perfectionist / High quality conscious	0.789

From table 2, when considered about consumer decision making style, we can see that Recreational/ Hedonistic (CSI4) has an element weight value of 0.817 which is the most influence. Second is Perfectionist/High quality conscious (CSI8) has an element weight value of 0.879. Lastly, the least influence value is Habitual and Brand loyal (CSI1) which has an element weight value of 0.197.

2. The development of SKU Rationalization

The SKU Rationalization model analysis includes 3 observe variables which can be classified as product assortment, product availability, and customer satisfaction. First affirmative element analysis result of SKU Rationalization by confirmatory factor analysis to confirm the indication of the variable's element in the measurement model indicated that the weight of the composition of all variables were statistically significant ($P<.01$) as an important indicator that indicates the SKU Rationalization. The values of mentioned variables are in range between 0.71 to 0.77 which can be implied that the variables are in an excellent condition. Moreover, the value of R-squared can be found in range between 0.51-0.60 which is shown that the derived model can be explained the variation of the response variables as well which is shown in figure 3 and table 3, respectively.

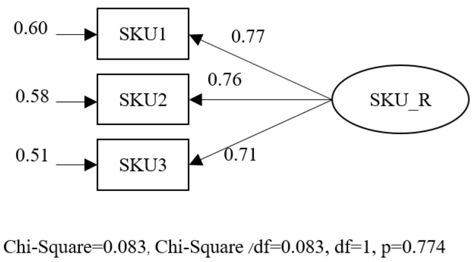

Figure 3 SKU Rationaliztion measurement model

Table 3 The element weight value of the latent variable to the observe variable of dependent variables

Latent Variable	Observe Variable	Element Weight Value
SKU Rationalization	1. Product Assortment	0.773
	2. Product Availability	0.760
	3. Customer satisfaction	0.714

From table 3, when considered SKU Rationalization, we can see that the first component is Product Assortment (SKU1) has an element weight value of 0.773 which is the most influence among others. Second is Product Availability (SKU2) which has an element weight value of 0.760. Lastly, the least influence value is Customer satisfaction (SKU3) which has an element weight value of 0.714.

The analysis of structural equation model based on assumptions

The researcher has analyzed the relationship models between consumer decision making style and a factor of SKU Rationalization by AMOS program with the purpose to compare the harmony and influence between the developed model with empirical data. Furthermore, the criteria that used to determine the consistency of the model with empirical data composes of index of Chi-Square, Chi-Square /df, CFI, GFI, RMSEA, NFI, and TLI which the researcher showed the overall consistency index analysis in figure 4 and table 4, respectively.

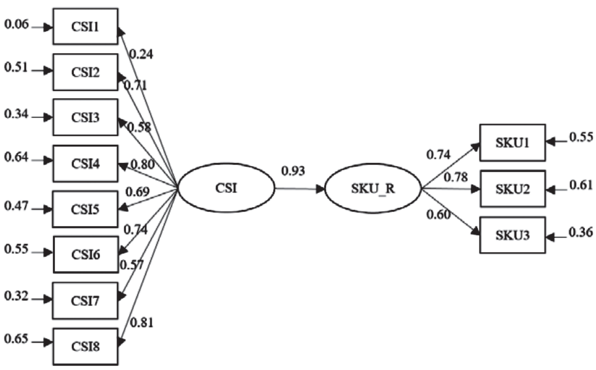

Figure 4 The influence of overall model analysis

Table 4 The consistency index of overall model analysis

Consistency Index	Criteria	Measured Index	Result
p-value of Chi-Square	> 0.05	0.107	Passed
Chi-Square /df	≤ 3	1.440	Passed
CFI	≥ 0.90	0.998	Passed
GFI	≥ 0.90	0.993	Passed
RMSEA	≤ 0.08	0.026	Passed
NFI	≥ 0.90	0.994	Passed
TLI	≥ 0.90	0.993	Passed

Discussion

The research of the Consumer Decision Making Style Influencing SKU Rationalization within Higher Education Institutions in Amphoe Mueang, Nakhon Pathom composed of 2 consistency variables which is consistent with this research which are (1) consumer decision making style including of 8 observe variables which are variables of Habitual and Brand loyal, Brand conscious/Price Equals Quality Consumer, Price and Value-for-money shopping consciousness, Recreational/Hedonistic, Impulsive/Careless Consumer, Novelty-fashion consciousness, Confused by over-choice (CSI7), and Perfectionist/High quality conscious (CSI8). (2) SKU rationalization including of 3 observe variables which are factors of Product Assortment, Product Availability, and Customer Satisfaction. Consequently, these two variables are correlated between the statistical data empirical data. Hence, the direct influence value of of customer decision making style to SKU Rationalization is 0.93 as shown in figure 4.

Moreover, from figure 4 which shows about the consideration of all factors, the observe variables can be described as follow the consumer decision making style has 3 priorities of variables which are formats of Perfectionist/High quality conscious, Recreational/Hedonistic, and Novelty-fashion consciousness, respectively. There are similarities with regards to consumer decision making style of the students and staff in the higher education as compared to other researches which are Tarnanidis, Frimpong, Nwankwo & Omar (2015); Tanksale, Neelam & Venkatachalam (2013); Sam & Chatwin (2015). The most important decision-making behaviors identified is perfectionist/high quality conscious. This factor indicates that students and staff preference for best quality products because it is related to healthcare product and use in daily life. SKU Rationalization has a priority of variables which are Product Availability, Product Assortment, and Customer Satisfaction, consecutively, which is consistent with Grubor & Milicevic (2015); Chernev (2012); Usman (2008).

Suggestions

In the next research, researcher should be studied variables in other factors that might influence with SKU Rationalization such as fulfillment consciousness, recommendation consciousness, and so forth.

Policy suggestion

Modern retail industry should have studied the diversity and factors that affect customer consumption in order to provide knowledge in management and also to increase the potential of modern retail industry.

Management suggestion

Modern retail industry, especially the convenience store business, is able to use the information as a guideline for defining policies and defining guidelines for allocating products to store as well as the basis for monitoring the business performance.

Academic suggestion

The study of the Consumer Decision Making Style Influencing SKU Rationalization as the first priority in product selection that will be available in the store and quantity of SKU Rationalization results in the ability to increase competitiveness to the business.

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Sex and Unintended Pregnancy among School Students: Reproductive Health Problems in Adolescents

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Unintended Pregnancy, Adolescent, Pregnancy Prevention

Abstract

Unintended pregnancy remains the major issue among Thai adolescents as it is a transitional period from teens to adults. The teenagers likely to have alteration in terms of their physical, mental, emotional and social development. Moreover the change regarding social, economic, technological and communicational factors also seem to influence their attitudes and behaviors to accept more sexual relations. As mentioned factors teenagers tend to neglect the importance of birth control. Unplanned or Unintended pregnancy increasingly happen in most of Thai adolescents that leads to problems of health, economy and society in both teenagers and children Besides, there are variety of factors cause an unintended pregnancy among teenagers. Predisposing factors which found to be the main factor directly related to an individual such as knowledge, beliefs, values and attitudes. Reinforcing factors are associated with family, friends and other people. Lastly, Enabling factors are focused on any approaches that provide means or opportunities such as skills, resources, tools, facilities as well as the difficulty of accessing health services. Therefore the prevention of unintended pregnancy need to be highly pertinent to issue which focus on the factors encourage their behaviors and opportunity to an intended pregnancy in adolescents.

Introduction

Unintended pregnancy among adolescents is a crisis problem having a long-term effect on population quality of life, especially those who are in a school age and sometimes they have to leave an educational system as well as deprivation of employment opportunities. Adolescent parents have little patience for spending their lives together and end up with divorce and leave their children to be a burden of grandfathers and grandmothers to raise and give guidance them, having a direct effect on their children's lives. Adolescence is a transitional period between childhood and adulthood. Most likely they have alteration in terms of physical, psychological, emotional, and social development; from depending on adults to become self-reliant with self-responsibility. In terms of their physical appearance, alteration in the reproductive system is obvious seen as they are ready to have sexual intercourse and chances of getting pregnant as they are deprived of knowledge and understanding of pregnancy prevention and family life readiness, causing unintended pregnancy among adolescents. Unintended pregnancy is a crisis that adolescents have to face when

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they are need of knowledge to protect themselves from situations that change rapidly as they are immature, easily persuaded and tempted by surroundings. Today adolescents require more independence while they lack emotional maturity, experience and parental warmth, triggering them not to be discreet especially having sex before the right age and experiencing unintended pregnancy. Many of them become adolescent parents while they are not ready. They have to leave schools and lose their future, ruin their and family reputation. Finally, when they cannot solve the ongoing problem, they most likely end up with killing themselves, abortion and leave their children with their parents or abandon their children to be an increasing burden of the society. Such problem has a tremendous effect on their lives in relation to health and sexually transmitted diseases (Kruachottikul & Paiboon, 2015). Adolescence is a transitional stage between childhood and adulthood. Their physical, mental, emotional and social development have been changed such as being hot-tempered or aggressive, being curious and eager to try new things, having sexual development, sexual desire and they start to have sexual intercourse. Meanwhile, with rapid change in society, economy, and easily accessible of communication technology, adolescents have sexual attitude and high risk sexual behavior. They accept sexual activity among adolescents but at the same time they ignore to prevent problems caused by having sexual intercourse and pregnancy. Most of them end up with unintended or unplanned pregnancy leading to health problems in adolescents and children affecting economic and social sequences. Though a tendency of condom use for having the first or recent sexual intercourse with their girlfriends or lovers increases, it is stable in the last 6 years (2011-2016) approximately 60% to 70%. Most Thai teenagers have sexual intercourse without prevention which brings about many problems later, in particular unintended pregnancy. (Nithitantiwat & Pataipakaipet, 2016)

Adolescent unintended pregnancy circumstances

Unintended pregnancy in adolescents around the world increases especially in developing countries. Every year an estimated 21 million girls aged 15 to 19 years and 2 million girls under age 15 years become pregnant in developing countries. Approximately 16 million girls aged 15 to 19 years and 2.5 million girls under age 16 years give birth in developing countries. It is found that the global adolescent birth rate has declined from 65 births per 1,000 women aged 15-19 years in 1990 to 37 births per 1,000 women aged 15-19 years in 2014. Though the birth rate has declined, adolescent pregnancy has increased globally. It is expected that the number of adolescent pregnancies will increase globally by 2030, with the greatest proportional increases in West and Central Africa and Eastern and South Africa (WHO, 2017). It is found that adolescent birth rates range from a high of 115 births per 1,000 women aged 15-19 years in West Africa to 64 births per 1,000 women aged 15-19 years in Latin America and the Caribbean to 45 births per 1,000 women aged 15-19 years in South-Eastern Asia, to a low of 7 births per 1,000 women aged 15-19 years in Eastern Asia (WHO, 2017).

Adolescent unintended pregnancy appears to be more severe. Ministry of Public Health reported the 2016 situation of reproductive health of adolescents by conducting survey on sexual behaviors of adolescents studying in the second year of a vocational certificate program. The survey indicated that in 2011 49.8% of male students had sexual intercourse and the number declined to 43.2% in 2016. In relation to condom use, it was found there were 55.0% of students using condom when having the first sexual intercourse and the number increased to 67.0% in 2016 as seen in the Figure 1. It was also found that in 2011 there were 51.2% of students recently having sexual intercourse with their girlfriends used condom and the number increased to 67.4% in 2016. In 2011, there were 31.42% of students used a contraceptive method at sexual intercourse and the number increased to 88.2% in 2012 and declined to 75.67% in 2016 as seen from the Chart 1. With regard to female students, the survey reported that in 2011 there were 41.6% of them had sexual intercourse and the number increased in 2016 to 44.9%. In relation to condom use in students having the first sexual intercourse, in 2011 there were 50.0% of them and the number increased in 2016 to 70.3%. In 2011, there were 38.6% of students recently having sexual intercourse with their lovers used condoms and the number increased to 61.8% in 2016 as seen in the Figure 2. With regard to a contraceptive method at sexual intercourse, in 2011 there were 31.24% of them and the number increased to 88.2% in 2012 and declined to 75.67% in 2016. Besides, it was found that teenagers had the first sexual intercourse at age 15-17 years and the most common contraceptive method was condom use (Bureau of Reproductive Health, 2016).

Adolescent birth rate compared with the birth rate of all groups of mother since 2003-2006 indicated that birth rate of mothers aged under 20 years had a tendency to decline as it was found that there were 14.2% of mothers aged 10-19 years who gave birth while adolescent birth rate from girls aged 15-19 years seemed to decline more than 100,000 persons/year during 2011-2015 and declined more than 100,000 persons/year in 2016. The birth rate from teenagers aged 15-19 years had a tendency to decline as in 2016 the number was 42.59% per 1,000 women aged 15-19 years. Furthermore, it was found that in 2016, teenage mothers experienced an abortion due to economic, social, and family reasons by 62.6% which was higher than a personal health reason and among them there were 26.3% who were school and university students. In addition, the reason for having an abortion due to unintended pregnancy was as high as 92.6% and 41.3% did not use any form of contraception (Bureau of Reproductive Heath, 2015); Rongluen, Talengjit & Siriborirak, 2012). It was also found that the sickness rate from sexually transmitted diseases in adolescents aged 15-24 yeas increases every year. In 2010, the sickness rate was found 80.8 per 100,000 population and extremely increased in 2016 to 143.44 per 100,000 population (Bureau of Reproductive Health, 2016). Besides, Office of the Permanent Secretary of Ministry of Social Development and Human Security conducted a survey on adolescents aged 15-19 years in 2013 and found more than 2 millions girls gave birth from unintended pregnancy. Therefore, female teenagers aged under 20 years had an unintended pregnancy problem more than women in other ages. The synthesis and analysis report on the national adolescent pregnancy 2015 found that girls aged 15-19 years had unintended pregnancies as many as 94.1%, indicating a very high statistic.

Factors affecting adolescent unintended pregnancy behavior

Factors affecting adolescent unintended pregnancy behavior are various which can be divided by PRECEDE-PROCEED Model of Green & Kreuter (2005) comprising predisposing factors, reinforcing factors, and enabling factors to make understanding of adolescent unintended pregnancy behavior which can be concluded as follow:

1. Predisposing factors are major factors in individuals. It has been found that knowledge, belief, perception, value, and attitude of individuals affect having sexual intercourse that leads to unintended pregnancies (Lertsakornsiri, 2014; Srisuryawet & Homsin, 2014; Rongluen, Talengjit & Siriborirak, 2012). Meanwhile, lack of sex knowledge and correct methods of contraception (Lertsakornsiri, 2014) are obstacles to access contraception. Adolescents lack risk perception of having sex without a condom, using a condom wrong, feeling embarrassed to buy a condom in a convenient store or a drug store. Adolescents have negative attitude and value towards wearing condoms as they believe that a condom will have an effect and reduce their happiness while having sexual intercourse. Meanwhile, women in Thai society have negative attitude towards carrying or buying female condoms as an embarrassing thing making other people think that they are going to have sexual intercourse. Lack of knowledge and having wrong information about sex, reproductive health, and correct methods of contraception contribute to adolescent pregnancy. Such challenge starts from not knowing how to use condoms and birth control pills as well as wrong belief in pregnancy (Lertsakornsiri, 2014; Nithitantiwat & Pataipakaipet, 2016).

2. Reinforcing factors are factors given by families, friends, and other people. It has been found that an obstacle to access contraception especially using condoms is social and cultural stigma. In terms of contraception, adolescent sexuality, negative attitude and behavior of teachers, parents, and service providers, female adolescents are expected not to know about sex; females should preserve their purity and should not experience sexual intercourse before getting married. Therefore, the way that women carry or buy female condoms are judged an embarrassing thing. It is also found that adolescents do not have money to buy condoms, causing them are unable to access contraception services. Moreover, it is found that adolescents do not use condoms due to an atmosphere supporting having sexual intercourse (Isaro, 2015; Nithitantiwat & Pataipakaipet, 2016), not having enough time for prevention and they feel that wearing condoms can reduce their happiness and show untrustworthiness between each other.

3. Enabling factors are factors supporting behaviors such as skills, resources or tools or facilities that support or not support behaviors including difficulty to access health services. It is found that the way that adolescents do not use any form of contraception is due to various causes; inadequacy of reproductive health service friendly to adolescents; censoring media that advertise condoms. Moreover, choosing to receive messages from media's technological apparatus increasingly and easily, adolescents can search sexual information and advice by themselves, causing them not having correct information. They can access information without having appropriate pieces of advice and their attitudes are enhanced that having sexual intercourse is a common thing. Censorship on condom advertisement and failure to control information about reproductive health publicized on the internet probably have an effect on reduction of using birth control pills or promoting incorrect contraceptive methods (Nithitantiwat & Pataipakaipet, 2016). Overall, these things are important obstacles to access any form of contraception, especially the reduction of using condoms or promoting incorrect contraceptive methods, and indicate the growing number of adolescents having sexual intercourse, having incorrect contraceptive methods, or not having any form of contraception. In case of neglect or failure to pay close attention, adolescents can get close to those risk factors increasingly, leading to sexual behavior, sexual intercourse and ending up with unintended pregnancy and in case they do not have any prevention or have incorrect and inefficient prevention, it can lead to various consequences and problems in the future.

Effects of adolescent unintended pregnancy

Though recently in 2016 the Prevention and Solution of the Adolescent Pregnancy Problem Act was driven to protect the rights to education of pregnant students, some adolescent's points of view found that it has both positive and negative approaches. Currently, adolescents are more assertive and some do not restrain from having sexual intercourse, contributing them to have unintended pregnancy later.

Physical, psychological, and emotional effects

Pregnant adolescents experience maternal and baby health effects. Adolescent mothers face high risks of premature birth, low birth weight baby, and death (Wisaphan & Yajai, 2016). In addition, adolescent mothers may have chances to get sexually transmitted infections such as AIDS, syphilis, gonorrhea, etc. Some pregnant adolescents decide to have an abortion and side effect from having an illegal abortion are various; for example, bleeding, severe infection, death. In some cases, they may have an operation to remove uterus meaning that they can no longer become pregnant throughout their lives (Rongluen, Talengjit & Siriborirak, 2012) and they may face some complications during pregnancy and delivery that can lead to death (Wisaphan & Yajai, 2016; Kruachottikul & Paiboon, 2015), being the leading cause of death in teenagers aged 15 to 19 years. Worldwide, it is found that 3.9 million people experienced unsafe abortions and adolescent mothers (the ages of 10 to 19 years) take higher risks of having cystitis, hemorrhoids, and sepsis than women aged 20 to 24 years (WHO,2017). Moreover, adolescent mothers face higher risks of premature birth than mothers aged 20 to 24 years. In terms of psychological and emotional effects, adolescents with unintended or unwanted pregnancies feel guilty and embarrassed and have anxiety that other people will know. They think about whether their boyfriends will take responsibility for this matter or not, how their parents will think about, causing them to be more introverted, feel sad and stressed and may think about killing themselves to escape from embarrassment and social stigma (Wisaphan & Yajai, 2016).

Social, economic, and environmental effects

Unintended pregnancy causes adolescents to stop learning or drop out of schools. When their education level is not high, the chance for them to get a good job is less. When they do not have a chance to choose a good job, they probably have low income that will not be sufficient to take care of their children, having difficulty to live their lives in the society, facing obstacles in their career path development, unpleasant environment for pregnancy and raising their children (Wisaphan & Yajai, 2016), especially adolescent mothers who are stigmatized from people close to them, causing family problems later as their families may feel embarrassed, violation of custom and tradition, family's reputation is ruined, etc. Though their parents will help take care of their children, their boyfriend' family may not accept and abandon them and let adolescent mothers to raise their children by themselves, being the cause that some adolescent mothers abandon their children (Rongluen, Talengjit, Siriborirak & 2012). Based on unreadiness to raise children of adolescent mothers, some children are abandoned, having an effect on the quality of Thai children in the future. Current information indicates that orphanages governed by Ministry of Social Development and Human Security have to patronize around 6,000 newborn babies to persons with 18 years of age per year and it is found that children born to adolescent mothers have a tendency to become adolescent mothers when they grow up which brings about social problems later.

Adolescent unintended pregnancy prevention

Since adolescent unintended pregnancy effects lead to problems and obstacles in living a life of adolescents and a burden of their families to take care of their offspring including the government sector that has to provide healthcare services, all sectors should participate in preventing adolescent unintended pregnancy. Emphasis in prevention should be placed on enabling adolescents to reduce access causal factors or have thinking literacy in unintended pregnancy as follow:

1. Preventing predisposing factors: Attitudes and value appropriate to Thai culture should be enhanced such as to preserve one's purity, do not engage in sexual activities or do not lose one's virginity before the right age, do not live together before marriage to increase self-worth in adolescents (Kruachottikul & Paiboon, 2015), be a compassionate person, possess a sense of right and wrong, do not harm anyone to get pain or dead like having an abortion, obey parents and teachers, behave morally and ethically, pay attention to studies to achieve graduation before marriage, do not be a victim of sexual temptation from inappropriate online media, make oneself useful for the society, country and oneself by spending free time to be useful such as do some exercise, help parents to work, parents should be ready to listen to their children's problems with positive attitude, parents express their love to their children and sympathize them when they face problems, show them to perceive and be aware of sexuality correctly (Rongluen, Talengjit & Siriborirak, 2012), adolescents behave properly in a student role. A sex education project should be provided like holding a sex education camp that schools can ask for collaboration from public health personnel to participate in holding activities for teaching sex education, especially life skills (Srisuriyawet & Homsin, 2014), know how to use refusal skills like "No, Stop, Do not". In this regard, the refusal must come from their intention to avoid and protect themselves rather than tempting or enhancing sexual desire (Nithitantiwat & Pataipakaipet, 2016). Therefore, refusal skills must be utilized with polite but strong and stable tone and gestures must be expressed to avoid a certain situation so as to change ongoing manners or sexual feelings to be more relaxing or finally disappear. Besides, they should be trained negotiation skills as only refusal skills may not be efficient. They should know how to communicate and build good relationship by negotiating with various methods by offering other better activities to avoid unexpected situation; for example, make an excuse to turn on a television while being hugged by a male friend, avoid a situation in which they have to stay privately with a male friend by going out for exercising or playing sports instead, etc. Adolescents should be taught life skills, learn how to think and listen, how to solve problem correctly by themselves and they should be encouraged to value themselves, love their own future and be inspired to stay committed to their dreams and make them become true (Srisuriyawet & Homsin, 2014). In the meantime, sex education should be given (Lertsakornsiri, 2014) to suggest how to have safe sex and know how to use any form of contraception for pregnancy prevention. Contraceptive methods are varied and each method depends on appropriateness and convenience of each person, especially using a condom is a convenient, economical method, and good at preventing pregnancy as well as safe from sexually transmitted diseases and AIDS. Meanwhile, knowing how to use a condom correctly is necessary. Therefore, enhancing adolescents to have life immunity will enable them to overcome various obstacles and can live their lives in the society in a good quality manner accordingly.

2. Preventing reinforcing factors: Based on the previous studies, it was found that Thai parents, public health personnel, teachers felt awkward or uncomfortable to talk about sex with adolescents. In the old days taking about sex was considered an embarrassment and a sensitive issue, making it was so difficult to talk about sex straightforwardly with their offspring. Thus, friends are someone adolescents choose to talk about sex or seek advice when they are pregnant or have an abortion. A happy family (Kruachottikul & Paiboon, 2015) should be built as father/mother/guardian play an important role in caring and giving good advice especially sex education considered a necessary issue in the today world. When families have time, take care of each other, and enjoy doing activities together will lead to trustworthiness. When family members face problems, they feel free to seek advice on everything. Parents should not let their children to stay alone when they have problems and have to keep pace with modernity of today media so as to prevent them from consuming inappropriate media. Parenting children should focus more on morality, virtue, and ethics (Nithitantiwat & Pataipakaipet, 2016; Rongluen, Talengjit & Siriborirak, 2012) as currently people give less importance to this issue, avoid stigmatizing children and using spoken words to devalue them. Parents should try to learn, accept, and get to know their children's friends to learn about any event that their children are facing and give advice to the children and their friends how to behave themselves appropriately by encouraging them to look for positive expectancy. Parents should ask their children about making friends of the opposite sex so that parents can keep monitoring and give them advice how to behave properly to their role as students and sexual practices or boyfriends (Srisuriyawet & Homsin, 2014).

3. Preventing enabling factors: Internet is an important channel adolescents use to search sexual information which is probable full of unreliable information. Parents or guardians should monitor their behavior in using internet (Nithitantiwat & Pataipakaipet, 2016). Besides, educational institutions should play their role in instilling value and promoting positive attitude towards having sexual intercourse and providing knowledge about contraception (Lertsakornsiri, 2014) encouraging them to focus on studying more than anything else and the way they make friends, especially making friends of the opposite sex. It seems that it is quite difficult today to control and it seems that prohibition is not workable as adolescents can learn anything from all forms of media. They have to be taught to separate what is right and what is wrong. Parents should be a good example for their children. To prohibit them for having boyfriends or sexual intercourse as of today seems to be difficult, parents and teacher have to stress on caring and preventing pregnancy instead by giving them knowledge about sex and appropriate contraception (Rattananam, Sangsuwa, Nitirat & Pennapa, 2015) teaching them how to behave when making friends of the opposite sex, monitoring and following up their wrong information learning from social media. In addition, government sector agencies should seriously raise a proactive campaign in giving adolescents knowledge about unintended pregnancy prevention and correct contraceptive methods and should control online media in publicizing sexual temptation to adolescents. Strict laws should be enacted and punishment should be imposed for those who broadcast pornography contravene to adolescents (Nithitantiwat & Pataipakaipet, 2016). Furthermore, reproductive health services should be appropriately provided (Kruachottikul & Paiboon, 2015). Birth control pill and condom services should be provided to adolescents and proactive activities should be organized to allow adolescents to enjoy doing activities together on important days such as Valentine's Day, Loy Krathong Day. Place of service should be private so that adolescents do not need to receive services at the same place adults do and the services should be open out of office hours and consultation services without face-to-face should be provided. Personnel giving services should understand adolescent demands and be trained adolescent consultation; they must have knowledge with good personality, dress properly and keep secrets (Wisaphan & Yajai, 2016), consistent with reproductive health policies of Department of Health that is formulated friendly services. Public health agencies have to provide health services for adolescents and youths while their fragility is taken in consideration. Youths are a group of people having alteration in terms of their physical, emotional, personality development and adjustment from childhood to young adults. They require acceptance from their friends and listen to friends rather than adults. They learn about sex through social media and have high risks in receiving information that is not well rounded. They think that sex is embarrassing but they are curious and would like to try. They like to imitate what their friends do. When they experience sexual health problems, they have no one to seek advice. They feel embarrassed and are afraid that their parents would know about their sexual behavior and they may be blamed. They are afraid to receive health services and often buy medicines by themselves. Service providers should realize youth demands so as to manage a health service system to be actually consistent with their demands in accordance with UNFPA on youth-friendly services. Characteristics and system of services comprise the following: Service hours should be convenient for youths to visit. Medicines and medical supplies should be adequately provided and choices of contraception are varied. Secret-keeping standard is trustworthy and a transfer system is appropriate. Service providers are competent; they understand and accept youths, they listen to youths' opinions. Youths are assigned as service providers, both health and social services are available, place of services is private. Place and service hours are specific to youths and location is easily accessible.

Conclusion

Adolescent is a transitional period from childhood to adulthood. They have rapid change in their physical growth and their brain is fully developed. They start to have sexual maturity and possess high power in themselves. Their emotion changes rapidly. They love their friends and prefer to be surrounded by their group of friends. It is also found that problems related to sexual risk behavior are considerably found and in the meantime adolescence is a period of learning and a turning point leading them to both good and bad ways. In this regard, related persons should make understanding and help promote adolescents to have development appropriate to their age as well as help them to adjust themselves to various problems and obstacles at their full capacity so that they can grow up with good quality of life and be the important power of the country in the future. With regard to all reasons said earlier, a program to assess risk behaviors of unintended pregnancy in school age should be developed to monitor and prevent students not to have obstacles for their studying or lose their future and to enable them to enjoy studying by their age for becoming the power in developing the country accordingly. Meanwhile, the program can be adapted to prevent and solve problems right to the context of each area increasingly.

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Book Review

Jaruwan Ployduangrat

Book name:	A Compass to Fulfillment The Most Important Issue for Humankind
Author:	Kazuo Inamori
Published:	Sunmark Publishing Inc., Japan, 2004
Paperback:	246 pages
Language:	Japanese
ISBN:	978-4-7631-9543-2

Speaking of speech was written by David HarringtonThis “ultimate life philosophy” transcends the realm of corporate management to offer guidance to all readers seeking their way through this dark age of chaos. "Kazuo Inamori", a man regarded as "The god of management in Japan". is the founder of two big companies such as Kyocera and KDDI. He was invited by the Japanese government to help in the crisis of Japan Airlines, that was going through a bankruptcy and had debts of over two trillion yen. Mr. Inamori helped Japan Airlines to come back prominently in just two years, despite never having any experience in airline business management before. How did he do all this? What is the way of thinking behind the great success? Why do you think his work was effective? In an age when everything seems to be rushing this book will reveal all Inamori's ways of thinking. You will find guidelines for working, management principles, as well as life and business lessons. With over 60 years of his life experience, he has become the person he is today!

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1.2 Typefaces and layout: English must be typed using TH SarabunPSK using Microsoft word. Specific font format guidelines are as follows.

1.2.1 The header contains the page number, aligned on the right side, in 12 pt. font.

1.2.2 The title in English languages must be 16 pt. font, bolded, and center aligned. The title should not exceed two lines of text.

1.2.3 The author's name in English language must be typed 14.5 pt. font and centered below the title. Asterisks (*) should proceed the authors' names which is correspond to the appropriate author.

1.2.4 Affiliations should match each author with their appropriate affiliated institutions and organizations. In case of different affiliations, superscript numbers should follow the surname1 and affliation1.

1.2.5 A footnote must be placed on the first page of the article with the text "*Corresponding Author", the next line of text should contain "e-mail", and the final line "**Affiliations" which specifies funding sources and agencies, for example "This research was supported by research grants from Suan Dusit University".

1.2.6 "Abstract" in English must be 14.5 pt. font, bolded, left aligned, and placed below the Thai keywords section. Abstract text must be 14 pt. font, with 1 tab indentation from left and right margins.

1.2.7 "Keywords:" should appear in English language in 14.5 pt. font, placed beneath the English abstract text and be aligned with the left margin. English keywords must be 14 pt. font, and should not exceed four words. Each keyword should be separated by a comma (,) and space.

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1.2.9 Bulleted items must appear as 14 pt. font, bolded, and be indented 1.5 tabs from the left margin.

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1.2.11 "References" must be 14.5 pt. font, bolded, and be aligned with the left margin. Individual entries must be 14 pt. font and should follow American Psychological Association (APA) formatting guidelines. Any lines of text for a single entry that exceed the first line should use a "hanging indent" of 1.5 tabs from the left margin.

1.2.12 Authors' names in Thai must be 14.5 pt. font, bolded and be aligned with the left margin. Name should contain Mr., Mrs. and academic title for each author. Affiliations should be below in both Thai and English as 14 pt. font. An address must be listed for each author.

1.3 An appropriate page length for publication in the Journal is approximately 15 pages.

2. Citing

Should follow American Psychological Association (APA) formatting guidelines. Guidelines for references can be found on the journal's website: http//research dusit ac.th/new/th/pr/

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The written manuscript may contain only English. The content should be easy to understand and clear. If the author uses abbreviation, full word must appear before any abbreviation.

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3.2 The authors if there are more than six authors only the first author is listed, followed by "et al."

3.3 Affiliated entities associated with the author should appear in English languages.

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3.6 The "Introduction" section should provide background information relevant to the research and provide information regarding the manuscript's content.

3.7 A statement of purpose should accompany the article to explicitly state the purpose of the study.

3.8 The framework clarifies the dependent and independent variables examined in the study.

3.9 The "Methodology" section delineates the procedures, how the research was conducted, sampling method (i.e. simple random samples) and population, and the creation and development of research tools used for data collection and analysis.

3.10 The "Results" section presents data obtained during the research and may be displayed as tables, graphs, illustrations, and accompanying explanations. Tables should be not have left and right borders and are normally black and white printed. No more than five tables should be present in the "Results" section. Pictures within the section should be clear and use simple black and white coloring with an accompanying caption, the author wishes to use colors for any item they may do so; however, the author will be responsible for the additional costs of color printing.

3.11 The "Discussion" section should include a summary of the findings and address whether or not the data support the research hypothesis and compare research findings to other similar research works.

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