Usage a Blended Learning Model to Promote the Career of Thai Massage for Health for Adult Students

ผลการใช้รูปแบบการเรียนการสอนแบบผสมผสาน

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ABSTRACT

This research aimed to study the implementation of a blended learning model for career promotion of Thai massage for health for adult students. The research samples comprised 34 adult students of Traditional Medical Clinic at Sirindhorn College of Public Health, Chonburi, selected by purposive sampling. The research tools were 1) a blended learning model for career promotion of Thai massage for health for adult students and 2) tools to study the outcome of implementing a blended learning model, including (1) a test on Thai massage for health, (2) an evaluation form on Thai massage for health skills, (3) an observation form of learners' participation in learning activities through the learning model, and (4) a satisfaction assessment form. The data were analyzed using dependent sample t-test, frequency, percentage, and standard deviation. The results of the research were as follows: 1) the comparison of knowledge assessment in Thai massage for health of the learners showed that the mean of the post-test score after the learning activities were 0.05 percent significantly higher than that of the pre-test score, 2) the evaluation of Thai massage practice skills showed that learners can practice at the most correct level (90% and above) and at the correct level (80-90% and above), 3) the observation of learners participating in the activities showed that the average of the students' participation was at a high level, and 4) the sample group showed that the overall level of satisfaction was at a high level. The participants viewed that learning through the model can be further applied and promote a career at a high level.

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บทคัดย่อ

  การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อศึกษาผลการใช้รูปแบบการเรียนการสอนออนไลน์แบบผสมผสานในการส่งเสริม อาชีพการนวดไทยเพื่อสุขภาพสำหรับนักศึกษาผู้ใหญ่ กลุ่มตัวอย่าง ได้แก่ นักศึกษาผู้ใหญ่ คลินิกแพทย์แผนไทย วิทยาลัย การสาธารณสุขสิรินธร จังหวัดชลบุรี จำนวน 34 คน ได้มาโดยวิธีการเลือกแบบเจาะจง เครื่องมือที่ใช้ในการวิจัย ได้แก่ 1) รูปแบบการเรียนการสอนออนไลน์แบบผสมผสานเพื่อส่งเสริมอาชีพการนวดไทยเพื่อสุขภาพสำหรับนักศึกษาผู้ใหญ่ และ 2) เครื่องมือศึกษาผลการใช้งานรูปแบบฯ ประกอบไปด้วย (1) แบบทดสอบความรู้ เรื่อง การนวดไทยเพื่อสุขภาพ (2) แบบประเมินทักษะการนวดไทยเพื่อสุขภาพ (3) แบบสังเกตการมีส่วนร่วมของผู้เรียนในกิจกรรมการเรียนรู้ผ่านรูปแบบฯ และ (4) แบบประเมินความพึงพอใจต่อวิธีการจัดการเรียนรู้ตามรูปแบบฯ การวิเคราะห์ข้อมูลใช้สถิติทดสอบทีแบบไม่เป็น อิสระต่อกัน ค่าความถี่ ร้อยละ และส่วนเบี่ยงเบนมาตรฐาน ผลการวิจัยพบว่า 1) การเปรียบเทียบความรู้ เรื่อง การนวดไทย เพื่อสุขภาพของผู้เรียน พบว่า ค่าคะแนนเฉลี่ยหลังกิจกรรมการเรียนรู้สูงกว่าก่อนกิจกรรมอย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05 2) ผลการประเมินทักษะปฏิบัติการนวดไทยเพื่อสุขภาพผ่านรูปแบบฯ พบว่า ผู้เรียนสามารถปฏิบัติได้ในระดับถูกต้อง ที่สุด (90% ขึ้นไป) และในระดับถูกต้อง (80-90% ขึ้นไป) 3) ผลการสังเกตการมีส่วนร่วมของผู้เรียนในกิจกรรมผ่าน รูปแบบฯ พบว่า ค่าเฉลี่ยการมีส่วนร่วมของผู้เรียนอยู่ในระดับมาก และ 4) ความคิดเห็นและความพึงพอใจของกลุ่มตัวอย่าง ในกระบวนการเรียนรู้ตามรูปแบบอยู่ในระดับมาก และให้ความเห็นว่าสามารถต่อยอดเพื่อประยุกต์และส่งเสริมเป็นอาชีพ ต่อไปได้ในระดับมาก

Introduction

  Economic and social changes in the 21st century have resulted in economic expansion and greater awareness of information. Quality labor is an indispensable factor in driving national development. Having higher professional skills and knowledge will increase one's potential to keep up with such changes (Panich, 2015). Non-formal education and informal education are essential to the provision of a wide range of learning to prepare adult students to enter the labor market with quality. Building learning skills necessary in the 21st century (Bellanca & Brandt, 2010) will help create the capacity and skills for effective work to meet the expectations of the society in the future (Martin, 2010). In entering the modern economy, all Thai people must be prepared by enhancing knowledge, understanding, and occupational skills of quality labor. This will also contribute to other important issues including promoting economic self-reliance (Chareonwongsak, 2008), promoting career to increase income, and reducing unemployment. Career promotion for adult students fosters the pursuit of knowledge for lifelong learning which enables adult students to live in a society with quality (Nadler, 1998). To promote Thai massage, massage service must be of quality, efficiency, and correctness according to the principles of Thai massage. Massage can make clients feel relaxed and relieve or completely cure illness. It promotes health and the quality of life, leading to professional skills for adult students.

  The identity and importance of Thai massage for health focus on providing a body relaxation and relieving fatigue caused by work and stress that affect the body and mind. Thai massage can prevent and relieve illness by providing physical rehabilitation after an illness. Career promotion of Thai massage for health helps promote the profession and home economy. It can generate income, help reduce unemployment, and enable an individual to be self-reliant. It encourages people to form a diverse professional group and cooperate with each other (Unthavatanapaibul, Vongyuttakrai, & Taewattan, 2015). Practicing in Thai massage for health includes studying the theory and self-practice by ractice-based learning. Learners have to practice examining and curing disease until they have skills and understand the principles and

methods of massage and treatment of various diseases. The practice may take many years in a row, depending on the intelligence, tact and ability of the learners.

Blended learning is one of the most widely used multi-disciplinary teaching methods. It has an objective to enable learners to achieve learning goals which are in accordance with the development of 21st century skills of learners. Blended learning management combines face-to-face learning in the classroom with learning outside the classroom through various online activities and resources. It provides flexible learning that responds to individual differences in terms of learning styles, thinking patterns, interests, and abilities of each learner (Bonk & Graham, 2004). Adult students who studied Thai traditional medicine were the main target population of this research. The study of Thai traditional medicine is practice-based learning. Therefore, career promotion learning for adult students requires blended learning. Face-to-face learning fulfills practical techniques, and online learning allows learners to develop learning skills. Learning through various media will promote self-learning, enabling learners to study any time at their own pace both online and offline. In addition, social learning tools can be used to communicate and ask questions about practical skills. The development of information communication, media literacy, computer usage, information and communication technology usage will enable students to control learning (Learner Control) by choosing the order of the content and appropriate learning time according to the convenience of the students (Spiro, Feltovich, Jacobson, & Coulson, 1991). Face-to-face activities with instructors after attending online learning will enable the assessment of massage skills. Learners will receive the knowledge they want and practice by themselves through a variety of learning methods. So, this research aimed to study the effectiveness of implementing a blended learning model for career promotion of Thai massage for health for adult students.

Literature Review

Blended learning is an instructional method that combines various teaching and learning strategies, including distance learning through a network, online learning, and face-to-face learning. Blended learning can create effective learning more than listening to lectures in a regular classroom. It is important for instructors and instructional designers to focus on choosing appropriate instructional materials to achieve learning goals (Bernath, 2012; Allen & Seaman, 2005). Blended learning is an instruction that combined face-to-face learning with online learning (Graham & Allen, 2003). It provides a range of activities, including face-to-face activities between instructors and students, synchronous online interactive activities, asynchronous activities such as discussion board, social media discussion, and self-learning through various technology media (Graham & Allen, 2003; Oliver & Trigwell, 2005). Rasheed, Amirrudin & Nor (2020) mentioned that the challenges in the online component of blended learning are from students, teachers and educational in stitutions perspectives. Self-regulation and learning technology are the key challenges that students face. Teacher's challenges are mainly on the use of technology for teaching. Challenges in the provision of suitable instructional technology; and effective training support to teachers are the main challenges faced by educational institutions. The advantages of blended learning for students include increased learning skills, greater access to information, improved satisfaction and learning outcomes, and opportunities both to learn with others and to teach others. The key benefits of blended learning are opportunity for collaboration at a distance, increased flexibility, increased interaction, enhanced learning and learning to be virtual citizens (Martha, 2018). In addition, the learner's perspective on learning is also an important part of blended learning design. Amanda, Andrea, & Michael (2017) presented Student Perspectives on Best Practices for Blended Learning that provides 1) Setting the stage - discuss blended learning on the first day of class, 2) Consistency with team teaching - communicate consistently with students through the same mechanism, 3) Timeliness - post materials at least 2 weeks prior to due date or class,

4) Time on task - consider time compensation for online activities, 5) Accountability - provide course credit for completing online materials on time, 6) Structured active learning - focus on application of material using active learning techniques during face-to-face class time, 7) Faculty feedback on student preparation - incorporate student performance on pre-class activities to focus the practice and discussion during the face-to-face session, 8) Incorporating student feedback into the course, 9) Reviewing online material during class, 10) Technology - choose technology that provides flexibility to students in completing online when feasible; Engage IT when developing and implementing blended learning and online activities.

The instructional design focuses on self-learning through online media based on ADDIE Model (Seels, 1997) which is a learning model for instructional design and development. Based on the principles of the system approach, it can be applied to designing and developing online content for CAI/CBT, WBI/WBT, and e-Learning. ADDIE Model is a comprehensive process and closed system as the feedback from the final evaluation stage will be used to revise the course. The five steps of ADDIE model include analysis, design, development, implementation, and evaluation (Dick & Carey, 1996).

Thai massage for health focuses on body rehabilitation and disease treatment and prevention, responding to the needs in health care (Nittayanggoon & Anurat, 2015). In addition, Thai massage for health can build a career that has a high value, according to the director of the School of Traditional Medicine, Wat Pho. Thai massage for health is a profession that can be performed by a single operator by providing a massage service at home or opening a service facility in a community, tourist attractions, as well as the hotels or resorts which are popular among foreigners. This has made Thai massage for health become famous and in demand in Thailand and abroad. Therefore, career promotion of Thai massage for health can increase individual capacity and create income for living. This will enable people to live efficiently and sustainably (Unthavatanapaibul, Vongyuttakrai, & Taewattan, 2015).

Method

This quasi-experimental research based on the one group pretest-posttest design (Cambell & Stanley, 1969) aimed to study the effectiveness of implementing a blended learning model for career promotion of Thai massage for health for adults. The researcher conducted the learning activity of a blended learning model by using the learning management system for 3 weeks. The research samples comprised 34 adult students of Traditional Medical Clinic in Sirindhorn College of Public Health, Chonburi, selected by purposive sampling.

Research Instruments

1. A blended learning model for career promotion of Thai massage for health for adult students consists of three processes; namely, pre-online learning process, online learning process and post-online learning process. It focuses on combining (1) learning and practice activities with instructional activities, (2) course of Thai massage for health, and (3) learning media, technology and communication tools. It emphasizes on the use of video teaching materials "Thai Massage for Health", which were designed in accordance with the learning objectives and learners by developing the length of the video media to be less than 10 minutes and having appropriate pictures, sound and graphic quality according to media design principles. Also, there were additional media such as e-Book and other additional resources. Blended learning model collected qualitative data on the model development approach from 10 experts in related fields of learning material design and management, curriculum and instructional design, media and learning innovation development, blended learning design, educational measurement and evaluation, research in the classroom, and research in educational technology and media.

2. The instruments to study the effectiveness of implementing a blended learning model include (1) the pre/post parallel test with 30 questions on Thai massage for health, created according to the learning objectives. They were used to experiment and find the difficulty and

discriminating power. The items with the difficulty in the range of 0.33-0.88 and the discriminating power in the range of 0.2-1.0 were selected. They were a moderate difficulty level and can classify learners, (2) the scoring rubric assessment form on Thai massage for health skills. It was verified for its content validity, accuracy and suitability by 3 content experts by means of item-objective congruence. The correspondence values between the questions and objectives were between 0.67 and 1.00 which passed the criteria, (3) an observation form of learners' participation in learning activities by using scoring rubrics, and (4) a satisfaction assessment form with 20 items. The form was verified by 3 instructional experts on its accuracy, appropriateness of the language use, clarity, completeness, and covering of the key issues. An observation form divided the assessment into different parts, comprising a blended learning management system (website and learning system), video and other digital media, blended learning process and activities, steps and methods of blended learning, and learning skills development such as search and retrieval skills, collaborative learning, using information technology for learning, and critical thinking and problem solving skills.

Learning content structure

The learning content structure consists of Module 1: Leg basis, knee signal, ankle signal, and back basis, Module 2: Outer leg, inner arm, and outer arm basis, and Module 3: Shoulder basis, neck, head signal. The learning content was verified for its content validity and suitability of the learning objectives by 3 content experts.

Figure 1 Online Course in Thai massage for health for adult students
(https://sites.google.com/view/thai-massage-for-health)
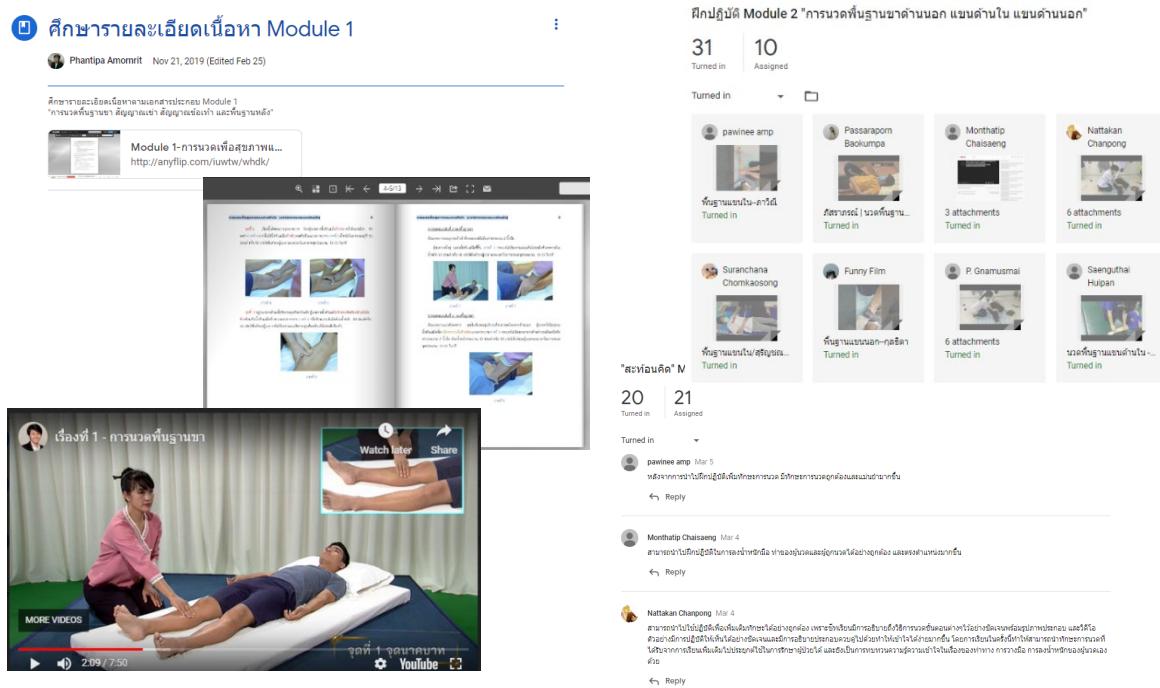
Figure 2 Learning media and practice activities
(https://classroom.google.com/u/0/c/NDc2NDE2OTg1MDla)

Instructional processes

The researcher conducted the research based on the one group pretest-posttest design and used the mixed methods research model. Details of instruction processes are as follows.

1. The researcher met with instructors and trainers of Thai Massage Practice for Health course at Traditional Medical Clinic in Sirindhorn College of Public Health, Chonburi one week before conducting the research to hand out a user manual of the blended learning system and explain about the instructional process and learning activities. The instructors were also advised about instructor's roles, including giving advice, encouraging, explaining, guiding learners, building interaction, and interacting with students through communication tools.

2. The researcher and the instructor team conducted activities of the developed blended model through a blended learning management system. The total research duration was 3 weeks. The details are as follows.

2.1) Pre-online learning process. The researcher and the instructor team assessed and analyzed the learning outcomes of the on-site classroom in the previous semester in order to develop and design learning activities to be suitable for learners and course content, and analyze the learners, including experiences, readiness and equipment used in learning activities. The team also set the practice time for Thai massage skills and set the frequency of attending online lessons. Moreover, the research team met to explain about instructional process. The details of the sub-steps are as follows.

(1) Orientation is a face-to-face activity at a Traditional Medical Clinic in Sirindhorn College of Public Health, Chonburi Province. The instructors and the trainers met 34 students to explain the conditions, steps, and instructional activities of the blended learning model, as well as survey the readiness of learning and learning equipment of learners.

(2) Students registered in an online learning system and learned how to use the learning system.

(3) The instructors divided the students into groups of three and they were given a role of a masseuse, a person who received message, and a massage assessor to practice skills at all levels of operations. The students were grouped based on a voluntary basis to practice Thai massage.

(4) The instructors assessed knowledge and practical skills of Thai massage for health (hand massage technique) before teaching and learning in a blended learning model for career promotion of Thai massage for health for adult students.

(5) The instructors set practice questions and informed students about the topic and scope of learning which was used as a guideline for searching for knowledge and practice training of students in solving problems according to the mission.

2.2) Online learning process. The students conducted self-study activities through the online learning management system. They had to study learning content through a blended learning system and materials. The details of the sub-steps are as follows.

(1) The students studied the objectives and practice questions as a guidance of the learning process in each learning module.

(2) The students studyied the online content provided by instructors according to the specified time, including Thai massage for health demonstration videos and the summarized content through e-books. The teaching team regularly tracked the attendance of the online lesson content in the student's system.

(3) The students studied and researching additional content through learning resources, websites, and social media that instructors recommended for practice questions in each module to define the scope for further study.

(4) The students practiced Thai massage for health and hand massage technique after completing studying within each group of learning modules. Recording video clips of the practice and uploading them to the system.

(5) The students participated in the exchange of opinions within the group through an online web board tool and receiving the suggestions from instructors to further improve the practice.

(6) The students reflected knowledge from practice in each learning module through knowledge reflection activities on the online learning system.

2.3) Post-online learning process. The details of the sub-steps are as follows.

(1) The researcher and the instructor team assessed student's knowledge and practical skills after learning according to the model. In particular, practical skills constantly needed suggestions from the instructors to measure the progress in massage for professional practice. Then, the students made a satisfaction assessment of the learning style.

(2) The instructors summarized knowledge according to the learning objectives and learning content. The students reflected on knowledge and ideas gained from studying online lessons, as well as additional knowledge from research and exchanging with other students. The students expanded their knowledge in the field of application to be applied in professional practice correctly.

(3) During an online blended learning activities, the researcher and the instructor team observed the students' participation behavior in learning activities through a blended online model for career promotion of Thai massage for health for adult students.

Research findings

The research findings are divided into 4 parts as follows.

1. The results of the comparison of an average score of knowledge on Thai massage for health of each learning module of the sample of 34 students found that Module 1: Leg basis, knee signal, ankle signal, and back basis had an average score after participating in learning activities at 9.15 points, accounted for 76.25% of the full score, which was higher than an

average score before learning activities. Module 2: Outer leg, inner arm, and outer arm basis, had an average score after participating in learning activities at 8.24 points, accounted for 82.40% of the full score, which was higher than an average score before learning activities. Module 3: Shoulder basis, neck, head signal had an average score after participating in learning activities at 6.74 points, accounted for 84.25% of the full score, which was higher than an average score before learning activities. The results of comparing a knowledge average score before and after the experiment of the sample group found that an average score after learning activities was higher than the scores before learning activities with statistical significance at the level of 0.05.

Table 1. The results of the comparison of an average score of knowledge on Thai massage for health

Results of knowledge evaluation	*n*	scores	Mean	*S.D.*	*t*	*p*
1. Module 1: Leg basis, knee signal, ankle signal, and back basis						
Before experiment	34	12	7.38	6.00	3.35	0.000
After experiment	34	12	9.15	4.13		
2. Module 2: Outer leg, inner arm, and outer arm basis						
Before experiment	34	10	5.38	4.30	7.32	0.000
After experiment	34	10	8.24	1.40		
3. Module 3: Shoulder basis, neck, head signal						
Before experiment	34	8	4.91	2.14	8.24	0.000
After experiment	34	8	6.74	1.35		
The results of the comparison of an average score before and after studying						
Before experiment	**34**	**30**	**18.85**	**3.52**	**6.63**	**0.000**
After experiment	**34**	**30**	**22.88**	**10.96**		

Statistical significance at the level of 0.05

    2. The results of the evaluation of Thai massage for health skills (hand massage techniques) were from 12 groups of students, a total of 34 students. The instructors assessed the skills of 12 groups in a face-to-face manner. It was found that there were two groups that can perform the most accurate practice with correctness and completeness (90% or more). There were 10 groups that can perform both the most accurate practice with correctness and completeness (90% or more) and accurate practice with correctness and completeness (80% - 90%). Overall, each group had only slight mistakes when practicing.
    3. The results of observing the participation students in activities through the blended online learning model by the instructor and the research team found that 1) pre-online learning process had an average score of student's participation at all stages at a high level, 2) online learning process had an average score of student's participation at all stages at a high level, and 3) post-online learning process had an average score of student's participation in each sub-stop at a high level. In addition, the instructor and the research team provided suggestions on additional issues that during the summarizing and expanding knowledge activity, the instructors may encourage students to reflect on knowledge by sharing their opinions on learning thoroughly.
    4. The results of the evaluation of the opinions and satisfaction of the sample group of 34 people towards the blended learning model for the career promotion of Thai massage health care for adult studentsfound that 1) A blended learning management system (website and learning system) received an overall satisfaction at a high level ($\bar{x}$ = 4.03, *S.D.* = 0.65), 2) Videos and other digital media received an overall satisfaction at a high level ($\bar{x}$ = 4.15, *S.D.* = 0.61), especially in the video segment that received the highest rating in this area due to

the quality and attractiveness of the visual media, 3) Blended learning process obtained an overall satisfaction at a high level ($\bar{x}$ = 4.11, *S.D.* = 0.67), 4) Steps and methods of blended learning received an overall satisfaction at a high level ($\bar{x}$ = 4.18, *S.D.* = 0.63), and 5) Other skills developed obtained an overall satisfaction at a high level ($\bar{x}$ = 4.24, *S.D.* = 0.65). In particular, regarding the process of the model on career promotion, the sample group viewed that the learning model can be applied and promote their career in massage at a high level ($\bar{x}$ = 4.35, *S.D.* = 0.60) which showed the relationship between the blended learning activities that supported practical skills, allowing learners to review and practice Thai massage skills to further promote their career.

Discussion

The results of the use of the blended learning model for the career promotion of Thai massage health care for adult students found that an average score after participating in learning activities was higher than before participating in learning activities. In addition, from the comparison of the knowledge scores of the learners in the previous semester without blended instruction, it was found that students who used the blended learning model had higher scores. The blended learning model and online training was consistent with the study results of Jessadangkul & Thepnuan (2019). The research showed that online learning process consisted of the sub-processes, including studying the objectives and practice tasks, online media learning, exploring supplementary learning materials, practicing after the lesson, knowledge sharing, and reflective knowledge from practice tasks. The study of Srichantra (2018) developed instructional systems for foot reflexology career and technology group for high school teachers in Srakaew province. It was found that the trainees had higher learning achievement than before the training with a significant difference in statistics. The results of the evaluation of Thai massage for health skills found that two groups of students can perform the most accurate practice and the other 10 groups can perform both the most accurate practice with correctness and completeness (90% or more) and accurate practice with correctness and completeness (80%-90%). The relationship of frequency to access online lesson, practice activities, and Q&A interactions points out the acquisition of practice skill scores. This is consistent with the study of Srichantra (2018), showing that after the training with a training package of foot reflexology, high school teachers had higher knowledge and skill scores in foot reflexology after learning than before learning. The results of observing the student's participation in activities through a blended online learning model found that an average score of student's participation in pre-online learning process, online learning process, post-online learning process wasat a high level. This is consistent with Garnham & Kaleta (2002) that learning activities on a blended website allowed students to study independently, leading to active learning and active learners. The results of the evaluation of the opinions and satisfaction of the sample group found that overall students had satisfaction at a high level and viewed that the learning model can be applied and promote their career in massage. In addition, the use of a blended learning model can be used as a self-practice-based learning, which is suitable for the content as a model of practice skills to build on and promote the development of Thai massage skills for health. This is consistent with the study of Al Bataineh, Banikalef, Abdullah, & Albashtawi (2019) in that their learners were strongly satisfied and motivated towards the learning process and showed that blended learning had a positive impact on the learners' performance. This method of instruction should be applied in other subjects.

Recommendations

1. Recommendation for the institution and career promotion agency is when applying a blended learning model, learning activities should be adjusted to suit the science of profession and emphasize the use of tools to measure results of practice and assignment submission to see

the development of skills in order to strengthen the career and apply knowledge. Supportive media and technology used in a blended learning for career promotion for health for adult students can be adaptive to the changing technology and suitability of the context of use.

     2. Recommendation for further research. on a blended learning model should include qualitative research. The traces of communication between students and students and instructors and students should be taken into consideration to create an online learning environment that is suitable for effective use in the context of distance learning.

References

Al Bataineh, K. B., Banikalef, A., Abdullah, A. E., & Albashtawi, A. H. (2019). The Effect of Blended Learning on EFL Students' Grammar Performance and Attitudes: An Investigation of Moodle. **Arab World English Journal (AWEJ)**. 10(1): 78-88.

Allen, I. E., & Seaman, J. (2005). **Growing by Degrees: Online Education in the United States, 2005**. [Online]. Available: https://files.eric.ed.gov/fulltext/ED530062.pdf

Amanda R. M., Andrea L. P, & Michael E. P. (2017). Best Practices for Use of Blended Learning. **American Journal of Pharmaceutical Education**. 81(3): Article49. https://doi.org/10.5688/ajpe81349

Bellanca, J., & Brandt, R. (Eds.). (2010). **21 st Century Skills: Rethinking How Students Learn**. Bloomington, IN: Solution Tree Press.

Bernath, R. (2012). **Effectives Approaches to Blended Learning for Independent Schools**. [Online]. Available: https://www.testden.com/partner/blended%20learning%20for%20independent%20schools.PDF

Bonk, C. J., & Graham, C. R. (2004). **Handbook of Blended Learning: Global Perspectives**. San Francisco: Pfeiffer Publishing.

Cambell DT., & Stanley JC. (1969). **Experimental and Quasi-Experimental Design for Research**. Boston: Houghton Mifflin.

Chareonwongsak, K. (2008). **The Fifth Wave Philosopher of Society: The Expected Thai Society in 21st Century**. Bangkok: Sussess Media.

Dick, W., & Carey, L. (1996). **The Systematic Design of Instruction.** 4th ed. New York, NY: Harper Collin

Garnham, C., & Kaleta, R. (2002). **"Introduction to Hybrid Courses," Teaching with Technology Today**. 8(6). 1-4. [Online]. Available: https://hccelearning.files.wordpress.com/2010/09/introduction-to-hybrid-course1.pdf

Graham, C.R.; Allen, S., & Ure, E. (2003). **Blended Learning Environments: A Review of the Research Literature**. Unpublished Manuscript, Provo, UT.

Jessadangkul na Ayutthaya, P., & Thepnuan N. (2019). The Development of Online Training Package on Relaxing Massage for Working People in Patum Thani province. **Journal of Educational Review Faculty of Education in MCU**. 6(2): 82-92. [Online]. Available: https://so02.tci-thaijo.org/index.php/EDMCU/article/view/196222

Martha, C. (2018). **Guide to Blended Learning**. Commonwealth of learning; British Columbia.

Martin, J. (2010). **The Meaning of the 21st Century**. Bangkok: L. T. P.

Nadler, A. (1998). **Relationship, Esteem, And Achievement Perspectives on Autonomous and Dependent Help Seeking**. In S. A. Karabenick (Ed.), Strategic Help Seeking: Implications for Learning and Teaching (pp. 61-93). Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.

Nittayanggoon, S., & Anurat, T. (2015). The Study of Personnel Development Requirements on Thai Traditional Medicine and Alternative medicine. **Journal of Nursing and Education**. 8(1): 41-57.

Oliver, M., & Trigwell, K. (2005). Can 'Blended Learning' Be Redeemed? **e-Learning**. 2(1): 17-26. https://doi.org/10.2304/elea.2005.2.1.17

Panich, V. (2015). Innovative Pathway of Learning in 21st century. **Walailak Journal of Learning Innovations**. 1(2): 3-14. [Online]. Available: https://so03.tci-thaijo.org/index.php/jliwu/article/view/95054

Rasheed, A. R., Amirrudin K, & Nor, A. A. (2020). Challenges in the Online Component of Blended Learning: A Systematic Review. **Computers & Education**. 144: 1-17. https://doi.org/10.1016/j.compedu.2019.103701

Seels, B. (1997). The Relationship of Media and ISD Theory: The Unrealized Promise of Dale's Cone of Experience. Presented at Selected Research and Development Presentations at **the 1996 National Convention of the Association for Educational Communications and Technology 1997**. [Online]. Available: https://www.learntechlib.org/p/81879/

Spiro, R. J., Feltovich, P. J., Jacobson, M., & Coulson, R. L. (1991) Cognitive Flexibility, Constructivism, and Hypertext: Advanced Knowledge Acquisition in Ill-Structured Domains. **Educational Technology**. 31(5): 24-33.

Srichantra, T. (2018). Development of Instructional Systems for Foot Reflexology Career and Technology Group for High School Teachers Srakaew Province. **Journal of Industrial Education Faculty of Education, Srinakharinwirot University**. 12(1): 204-213.

Unthavatanapaibul, K., Vongyuttakrai, P. & Taewattan, T. (2015). Development of Promotion Career Model Related to Sufficiency Economy Philosophy. **Journal of Industrial Education Faculty of Education, Srinakharinwirot University**. 9(1): 34-45.