FLIPPED CLASSROOM ACTIVITIES DEVELOPMENT VIA ONLINE MEDIA AFFECT TO SELF-DIRECTED LEARNING FOR SENIOR STUDENTS IN CAREER AND TECHNOLOGY SUBJECT AT GUANGXI MEDICAL UNIVERSITY, CHINA

Bo PANG[1] and Ratchanee JAMSAI[1]
1 Faculty of Education Program, Pathumthani University, Thailand;
3743855603@qq.com (B. P.); ratchanee.j@ptu.ac.th (R. J.)

ARTICLE HISTORY
Received: 19 September 2024 **Revised:** 3 October 2024 **Published:** 17 October 2024

ABSTRACT
The objectives of this study were 1) to develop flipped classroom teaching activities via online media affecting self-directed learning, 2) to study learning achievement of senior students with flipped classroom activities via online media affect to self-directed learning, 3) to compare pretest and posttest sere, self-directed learning ability of senior students learning with flipped classroom activities via online media affects self-directed learning, and 4) study senior high school students' opinions on learning with flipped classroom activities via online media affect to self-directed learning. This research methodology was quasi-experimental research. The conceptual framework was applied from flipped classroom teaching activities of Yu Xin's study. The population consisted of 120 senior students at Guangxi Medical University, China in the first semester of the academic year, 2022. The samples of 92 students were determined by Krejcie and Morgan table. The instruments used in the study were 1) self-directed learning ability test, 2) the achievement test, and 3) a questionnaire form on student's opinions. The statistics used for data analysis were percentage, mean, standard deviation, and t-test. The study results revealed that 1) the results of the development of flipped classroom teaching activities via online media affect to self-directed learning was at a much level. 2) The results of learning achievement of flipped classroom teaching activities via online media affect to self-directed learning was at a much level. 3) The self-directed learning ability of flipped classroom teaching activities via online media of senior student's posttest was higher than pretest with the statistically significant level of .05. 4) The results of student's opinions to flipped classroom activities via online media affect to self-directed learning was at a much level.
Keywords: Flipped Classroom Activities, Online Media, Self-Directed, Senior High School Students

CITATION INFORMATION: Pang, B., & Jamsai, R. (2024). Flipped Classroom Activities Development Via Online Media Affect to Self-Directed Learning for Senior Students in Career and Technology Subject at Guangxi Medical University, China. *Procedia of Multidisciplinary Research, 2*(10), 39.

INTRODUCTION

The essential instrument for structuring flipped instruction is information and communication technologies. Utilizing the internet to facilitate connections among educational media, educators, and learners, while seeking information via the network. Communication via online social networks, web-based learning, and e-learning courses are areas of increasing interest. Presently, in the contemporary education sector, the utilization of technological advancements and the internet facilitates extensively structured instruction and learning. Instruction with flair Content transmission occurs via electronic media, including CD-ROMs, internet networks, intranets, extranets, television broadcasts, and satellite signals. This kind of learning, using computers, has been introduced to Thailand for an extended period. Instructional support using CD-ROMs, web-based learning, online education, remote learning by satellite, or learning through online videos, wherein students are required to independently acquire knowledge utilizing networks, computers, or electronic media to disseminate information. Instruction may use one or several media for lesson presentation, and may occur as either unidirectional or interactive instruction (Bupphachatthan Hikorn, 2008).

Components of the self-directed learning process, this kind of learning Self-directed learning encompasses learner attributes and the processes involved in self-directed learning. Self-importance is a significant aspect of the credentials of students using online or internet-based education are crucial. The learners must exhibit significant responsibility in directing the learning process. They may independently lead and manage themselves, conduct studies and research autonomously, while the teacher serves as their guidance. Infrastructure Resources must be accessible, and there must be engagement between the instructor and the students, as well as among the students themselves. Consequently, self-directed learning is a notion supported by this study.

The foundation derives from humanism, which advocates for the autonomy and uniqueness of individuals. It is said that every person is inherently endowed with virtue, autonomy, and uniqueness. Select your preferred option Possess boundless potential and cultivate your own capabilities, while assuming responsibility for yourself and others (Hiemstra, 1994). Acquiring knowledge via leadership Self-improvement is a process when learners take the initiative to assess and choose their learning objectives. Subsequently, they establish learning objectives and choose research methodologies that will facilitate achievement. They may also evaluate and assess accomplishments necessary for academic success (Knowles & Malcolm, 1978). Facilitating self-directed learning among students may foster self-reliance and personal growth. Self-leadership and self-reliance will foster internal motivation in learners, so enhancing their desire to learn and ensuring that learning is intentional. That will yield pupils Acquire knowledge effectively, retain it for an extended duration, and apply it more proficiently (Thongchan Hongladarom, M.P.). Consequently, traditional Chinese pedagogy is essential for educational institutions, and educators are seeking to align with the researcher's material. The participants examined in this study were subjects. Technology High school level, content 4 Technologies as per indications and core learning content, Technology learning topic group according to the 2008 Basic Education Core Curriculum. Students should utilize their capacity for self-development by exploring technologies of interest, fostering independent thought through a personal needs assessment and self-personality evaluation, ultimately selecting a suitable technology from the array of contemporary innovations. Numerous events have transpired. This profession necessitates the use of contemporary technology and the internet as the fundamental base for operations. Due to many activities at the university, the time allocated for teaching vocational topics has been significantly reduced, exacerbated by challenges in teaching and learning management. Instructing with conventional methods, the teacher's lecture in front of the class induces pupil boredom. Disregard the lesson I do not get the lesson material and the aforementioned backdrop on the use of technology as a means for arranging

learning. Instruction is advantageous and aligns with the prevailing circumstances. In alignment with 21st-century educational practices, the researcher opted to investigate the "Development of Flipped Classroom Activities via Online Media to Influence Self-directed Learning for Senior Students in Technology Subjects at Guangxi Medical University, China," aiming to cultivate students' proficiency in utilizing information and communication technology for autonomous knowledge acquisition, thereby fostering lifelong learning.

LITERATURE REVIEWS

Flipping the classroom is an instructional approach that inverts the traditional model, when students attend lectures in class and do assignments outside. In a flipped classroom, students first engage with educational materials external to the course, such as pre-recorded films or textual resources. This allows students to go at their own pace and review the content as needed. Class time is then designated for active learning activities, such as group discussions, problem-solving, and practical exercises, allowing students to apply the principles learned outside the classroom (Bergmann & Sams, 2012).

Bergman and Sams (2012) said that the flipped classroom paradigm has several advantages for students, such as enhanced engagement, greater subject retention, and augmented critical thinking abilities. Furthermore, educators have shown heightened satisfaction with the concept, enabling them to allocate more time to student-centered activities and less to lecturing. While the practice of flipping classes has historically been used in some disciplines, the notion gained traction as technology advancements facilitated the accessibility and creation of instructional resources. This method posits that there is no difference between a learner attending a lecture alone and one participating in a classroom setting with peers. These activities exhibit several distinctions, and courses provide advantages, including fostering a social environment and enabling students to learn from their peers' social signs. It may use tactics to enhance interactivity in lectures.

Some of the benefits of a flipped classroom are:

• It is flexible
• students can learn at their own pace
• students take responsibility for their learning
• students learn rather than encounter material in class
• there are more opportunities for higher-level
• it does not waste time transferring information to students when that information is available to them in books or online (Mazur, 2009)
• instructors and TFs work more closely with students, getting to know students better and providing better assistance
• increased collaboration between students

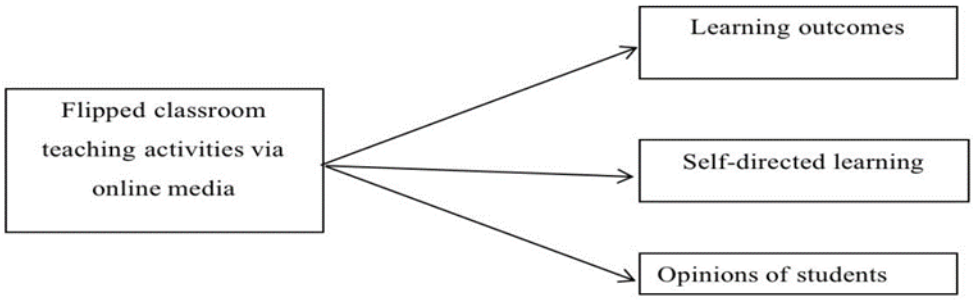
Many teachers think creating or finding sources for students to use outside of class is the most challenging part of implementing a flipped classroom. However, most of the benefits of a flipped classroom depend on what happens in the school instead of lectures. That makes it necessary first to plan how you will use the class time before you begin to look for resources for students to use at home. A flipped classroom model involves much work by students outside of class. Students will only resent this work if they see how it frees up class time to do things that help them learn.

Online media (Burnet & Marshall, 2003) is a form of communication that enables the sender and receiver to simultaneously send and receive messages in a two-way manner, and the media can also It is capable of simultaneously transmitting multiple messages, including images, audio, and messages. It integrates conventional media technology with Media can communicate in two distinct ways through technological relations systems, network and has the potential to be a blended media (Multimedia). At present, there are novel forms of media.

Developed in a variety of methods that are more widely recognized and popular online media is a form of educational media that is beneficial. Allow students to independently acquire knowledge via the internet network. Media technology encompasses online media, which includes:
Records, audio, transparencies, text, images, video, and computer-assisted instruction (CAI) Web-based learning (Network media) Utilizing the internet to facilitate learning, instruction, and research All of these satellites are stimulating instruments. To foster the development of cognitive tools and to motivate individuals to be more Seek knowledge and possess the ability to generate knowledge independently to motivate students to pursue independent learning.
Nowadays, all online media have entered the transition era from ICQ (I Seek You) MSN (MSN Messenger) to Smart Phones (Smart Phone) that are full of various applications from SMS Whatapp. Until Line (Line), nowadays people are more interested in playing with iPads, iPhones, or various models of Smart Phones than chatting with the people in front of them. Sharing stories Change opinions Pantip chat rooms are transitioning to sharing photos or telling stories on Facebook. Typing or posting messages as well as chatting on the internet (Chat) are popular and used quickly and widely. We increasingly search and receive information via the internet. Humans can receive information more quickly. From searching for information via internet media, such as reading newspapers online via the internet Listening to radio programs through Internet and watching television programs over the Internet While many students use Google to search for information rather than searching for books in the library, as well as watching various clips through YouTube (YouTube), which is consistent with what the teacher said. Phuworawan once said that the current educational model that relies on technology Learners' access to knowledge is easy, fast, and plentiful. There are teachers available, 3 people are Google Wikipedia YouTube. In addition, we also found students. Those who are interested in communicating by using their mobile phones to play on Facebook or Line all the time, which must be done There is an understanding that Studies related to the use of internet technology or using these online media does not cause This causes the quality of education in this era to decrease, but Somehow the search system of search engines (Search Engine) is increasing in importance. Students like to use Google (Google) to conduct research generates more reports than other types of searches Google's search system have begun to change. Google has given importance to There is more importance placed on certifying information on social media or online social networks (social media) in modern teaching and learning, especially at the higher education level. It is probably impossible to avoid working using technology. Computers create convenience and speed in recording data. Ability to search for information and knowledge including quickly and widely using it as a tool for communicating with students. Secondary and tertiary learners today grow up with contact, communication, and perception of information from online media.
Today, there is high competition because employers and workplaces all want efficient people. Therefore, studying in the classroom alone will not do the job. Makes students become well-informed people. Learners must learn things outside of the classroom. They must practice learning on their own in order to become a person. The efficiency is acceptable and the needs of society. The trend of education in the future focuses on freedom in learning. Learning opportunities Diversity in choosing to learn and continuous self-learning throughout life.
Why do you need to study Technologys and technology in the subject group? Learning about Technologys and technology is a group of subjects that help develop people. Learn to have knowledge, understanding, and basic skills necessary for living life and be aware of changes. Be able to use knowledge about living life, Technologys, and technology to benefit in your work to work creatively and competitively In Thai and international society, we see guidelines for pursuing a Technology that loves working. Can work and have a good attitude towards work and be able to live a self-sufficient and happy life in society.

Ertmer, Ottenbreit-Leftwich, Sadik and Sendurur (2012) also found that several factors, including the type of major, year of study, and demographic characteristics such as gender and family income moderated the impact of technology infrastructure on student engagement. For example, engineering and computer science students reported higher engagement levels than students in other majors. In comparison, female students and students from lower-income families had lower levels of engagement overall.

Parrill and Abby Louise (1996) conducted research on "Supplement Traditional Chemical Education on The World Wide Web" by creating supplementary media for learning chemistry through the World Wide Web. It is a lesson in the molecular movement that has developed. To be used for teaching, lecturing and disseminating on the World Wide Web and also to help create interaction and Supplementary teaching with this method of supplementary teaching helps promote students' understanding through self-study and trial and error. Moreover, the World Wide Web is also useful as a laboratory for valuable chemical experiments.



RESEARCH METHODOLOGY

The population and Sample Group

In The population consisted of 120 senior year at Guangxi Medical University, China who were enrolled as students in technology subject. The sample used in the research consisted of 92 senior year at Guangxi Medical University, China in the first semester of the academic year, 2022 determined by simple random sampling and drawing lots using the classroom as the random unit.

Research Instruments

The Data collection tools for this research, the questionnaire was a rating scale with 5 levels: highest, high, moderate, low, and very low. The researcher has developed an improvement from the research questionnaire Likert scale (Likert, 1932). The questionnaire is divided into 2 parts are:

Part 1 The status of the respondents, it was a multiple-choice with questions about the quality of the respondents.

Part 2 Develop Flipped classroom activities via online media to the influence of self-directed for senior year in Technology subject at Guangxi Medical University, China. It is a 5-level estimation scale question asking about factors of cognitive learning.

Data Collection

Research on Develop Flipped Classroom Teaching Activities via Online media that Affect Self-directed Learning of senior year in Technology Subject at Guangxi Medical University, China. It is experimental research. The researcher conducted the experiment according to the One- Group Pretest-Posttest Design, which is a test before the experiment and then let the sample group study until the end of the content and complete the test. Take a test after studying with friends. Looking

Pre-class test	**Test**	**Post-test**
T_1	X	T_2

Data Analysis
The statistics used in this research are this time.
1) Frequency distribution
2) Percentage Value
3) Average
4) Standard Deviation (S.D)
5) Multiple Regression

RESEARCH RESULTS

Comparative results of this type of learning ability the self-directed before the experiment and after the experiment of students studying via flipped classroom teaching activities through online media that affect the self- directed of senior year. Comparative results of this type of learning ability the self-directed before the experiment and after the experiment of students learning via flipped classroom teaching activities through online media.
Table 1: Results of comparing the mean and standard deviation of self-directed learning ability before the experiment and after the experiment, analyzed in each of the 8 self-directed areas used with a sample of 92 people.

Table 1 Results of comparing the mean and standard deviation of self-directed learning ability before the experiment and after the experiment.

Learning characteristics	**Pre-class test**			**Post-test**		
	$\bar{X}$	**S.D.**	**Results**	**$\bar{X}$**	**S.D.**	**Results**
1) Opportunity for learning	2.95	1.10	moderate	3.73	0.94	high
2) The aspect of having one's own concept of being effective learner	3.40	0.89	moderate	4.34	0.66	high
3) Have initiative and have freedom in learning	3.25	0.93	moderate	3.93	0.87	high
4) Responsibility for one's learning	3.39	0.85	moderate	4.37	0.75	high
5) Love for learning	3.42	0.98	moderate	4.10	0.76	high
6) Creativity	3.40	0.98	moderate	4.21	0.77	high
7) Optimistic outlook on the future	3.32	0.98	moderate	4.33	0.74	high
8) Ability to use skills study and problem-solving skills	3.45	0.73	moderate	4.17	0.83	high
Total average	**3.30**	**0.95**	**moderate**	**4.20**	**0.86**	**high**

From Table 1 it shows that students have the ability to self-directed learning classify averages according to each aspect. Before the experiment, it was at a moderate level with a total mean deviation of 3.30. The standard was 0.95 and after the experiment was at a high level with an average of 4.20. The standard deviations is 0.86. When considering each aspect, it is found that students' self-directed learning ability increased in all aspects. The average after studying was higher than before studying. Score mean has criteria for calculating self-directed learning scores by combining the scores of each respondent and averaging them, using the principle of mean interpretation to give meaning to the scores. Average values for self-directed learning.
Part 3 Results of the study of opinions of students studying with classroom teaching activities via Flipped learning through online media that affects learning self-directed of senior year. Study of students' opinions on learning through teaching and learning activities. Flipped classroom model through online media that affects learning Self-directed of senior year. This is a study of the opinion of a total of 92 sample students using an online questionnaire. The results of 92 opinions were returned using the mean standard deviation (S.D.) shown in Table 4.4 by analyzing the opinions according to the following criteria.

Table 2 Results of the study of students' opinions on learning with teaching and learning activities in the flipped classroom format via online media

Evaluation	Analysis results			
	$\bar{X}$	S.D.	Results	Level
1) Content of knowledge about Technologys				
1.1) The content is up-to-date.	5.0	0.0	very good	1
1.2) Techniques for applying The content presentation allows Make learning not boring and interesting.	4.6	0.5	very good	2
1.3) The content is arranged in an appropriate order.	4.5	0.6	very good	4
1.4) Explain the content easily and clearly.	4.4	0.6	good	5
1.5) After studying with flipped classroom teaching and learning activities through online media. to make students understand more content	4.6	0.6	very good	3
Total	**4.62**	**0.46**	**very good**	**1**
2) In terms of teaching activities using a flipped classroom through online media.				
2.1) Overall teaching and learning activities	4.5	0.5	very good	5
2.2) Flipped classroom teaching activities via online media are consistent with learning objectives	4.4	0.6	good	9
2.3) Activities help promote self-learning skills	4.6	0.6	very good	1
2.4) Express your opinions and exchange ideas with friends.	4.4	0.7	very good	8
2.5) The opportunity to inquire about some matters. A collective conversation took place.	4.5	0.7	good	2
2.6) Allows students to seek additional knowledge at any time.	4.5	0.6	very good	4
2.7) Make students responsible for their learning and responsible for themselves.	4.4	0.7	good	7
2.8) The duration of teaching and learning is appropriate.	4.4	0.8	good	6
2.9) Students would like to have teaching and learning organized in this way with other subjects.	4.3	0.8	good	10
2.10) Students are satisfied with teaching and learning activities organized in this way.	4.5	0.6	very good	3
Total	**4.45**	**0.66**	**very good**	**3**
3) Supporting teaching and learning activities in the flipped classroom format through online media.				
3.1) Communication channels through Message E-mail Chat room are appropriate.	4.5	0.7	very good	3
3.2) social media used in learning activities is interesting.	4.6	0.5	very good	2
3.3) Social media used in learning activities is convenient and Easy to use.	4.5	0.7	very good	5
3.4) Social media used Support for studying anytime, anywhere.	4.5	0.7	very good	4
3.5) Good atmosphere promotes learning.	4.5	0.7	very good	6
3.6) Have freedom to learn each week.	4.6	0.7	very good	1
Total	**4.5**	**0.64**	**very good**	**2**
Average of the total	**4.5**	**0.6**	**very good**	

From Table 2 it is shown that students have opinions on learning with activities. Teaching in a flipped classroom via online media. It is at a very good level. The mean is 4.5 and the standard deviation is 0.6. When considering each aspect, it is found that the content of knowledge about Technologys is the comments were ranked 1st as very good, with a mean value of 4.62, a base deviation of 0.46, followed by support for teaching and learning activities in the flipped classroom format through online media, ranked 2nd with an average of is equal to 4.5, the deviation from the base is equal to 0.64 and in terms of learning activities Classroom teaching Reversed through online media, No. 3 has a mean of 4.45, a deviation from the base of 0.66.

DISCUSSION & CONCLUSION

From a study on Flipped classroom activities via online media to the influence of self-directed for senior year in Technology subject at Guangxi Medical University, China, the results of the research can be discussed as follows: Results of the development of flipped classroom teaching activities through online media that affect the self-leadership of university students technology subject. The researcher would like to present details in 3 areas:

1) Access to learning management websites, Flipped classroom model via online media.
2) Learning content
3) Instructional design

The results of Flipped classroom activities via online media to the influence of self-directed for senior year in Technology subject at Guangxi Medical University, China studies revealed that the evaluation results were at a high level.

Research on Flipped classroom activities via online media to the influence of self-directed for senior year in Technology subject at Guangxi Medical University, China. The results of the research can be summarized as follows.

1) The results of the development of flipped classroom teaching activities through online media that affect the self-leadership of senior year in academic Technologys and technology. It was found that the results of the evaluation were at a high level. The mean is 4.43 and the standard deviation is 0.46. 2) Results of the study of learning achievement of students who studied with teaching and learning activities via flipped classroom model through online media that affects learning of high school students. In the subject of Technologys and technology, it was found that the average academic achievement score was at the very good level, 88.65 percent. 3) Results of this study of learning ability after-study self-care of students who study with flipped classroom teaching activities through online media that affect senior senior year in academic Technologys and technology. After studying was significantly higher than before studying at the .05 level, with a mean of 4.15 and a standard deviation of 0.79. When considering each aspect, it was found that the ability to learn in this way students' self-directed increased in all aspect. 4) Results of the study of opinions of students learning with teaching and learning activities via flipped classroom through online media that affects learning Self-directed of academic senior high school students' opinions were at a very good level. The mean deviation is 4.50. The standard deviation is 0.6.

REFERENCES

Ahlquist, S. (2019). Motivating teens to speak English through group work in Storyline. *ELT journal, 73*(4), 387-395.

Jin, Y. Q., Lin, C. L., Zhao, Q., Yu, S. W., & Su, Y. S. (2021). A study on traditional teaching method transferring to E-learning under the COVID-19 pandemic: From Chinese students' perspectives. *Frontiers in Psychology, 12*, 632787.

Muramatsu, C. (2018). A case study of the flipped classroom in a Japanese EFL context. *Asian EFL Journal, 20*(2), 136-156.

Morris, L. V., Xu, H., & Finnegan, C. L. (2005). Roles of faculty in teaching asynchronous undergraduate courses. *Journal of Asynchronous Learning Networks, 9*(1), 65-82.

Wang, Q., Chen, L., & Liang, Y. (2020). The impact of technology infrastructure on student engagement: Evidence from a large public university. *Computers & Education, 31*(2), 152.

Zhang, Q. (2020). Narrative Inquiry into Online Teaching of Chinese Characters during the Pandemic. *International Journal of Chinese Language Teaching, 1*(1), 20-34.

Zheng, B., Zhang, X., Liu, Y., & Wu, L. (2018). Reforms of College English Teaching and Learning in China: A Literature Review. *English Language Teaching, 11*(8), 74-84.

Data Availability Statement: The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Conflicts of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's Note: All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.