

DEVELOPMENT OF AN ELECTRONIC BOOK ON INFORMATION TECHNOLOGY AND COMMUNICATION SUBJECTS FOR STUDENTS IN CHONGQING COLLEGE OF INTERNATIONAL BUSINESS AND ECONOMICS, CHINA

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ARTICLE HISTORY

Received: 15 December 2023 **Revised:** 22 January 2024 **Published:** 12 January 2024

ABSTRACT

The purposes of this research were: 1) to develop the electronic book titled “Information Technology and Communication” for students with the criteria at the level of 80/80, 2) to compare the learning achievement results of the post-test of students by using the electronic book, and 3) to study the attitudes of students. Towards an electronic book titled “Information Technology and Communication”. The samples used in the research were 80 students in Chongqing College of International Business and Economics, China and the experimental group and the control group were of 40 students in each class determined by purposive sampling. This research consisted of an electronic, the lesson plan, multiple-choice test and aptitude test for an electronic book. The statistical methods used in data analysis were mean, standard deviation, and t-test. The results showed that: 1) the electronic book has an efficiency level of 82.06/80.11 according to the criteria value of 80/80, 2) after participating in the lessons with learning means of the electronic book, the students revealed their higher post-test results than studying in the class of the traditional approach, showing the statistical significance level of 0.05, and 3) the students’ attitudes towards electronic books showed an average level of 4.06 (\bar{X} = 4.06) and a high standard deviation at 0.75 (S.D. = 0.75).

Keywords: Electronic Book, Information Technology and Communication Subjects

CITATION INFORMATION: Zhang, Z. (2024). Development of an Electronic Book on Information Technology and Communication Subjects for Students in Chongqing College of International Business and Economics, China. *Procedia of Multidisciplinary Research*, 2(1), 13.

INTRODUCTION

The pace of development is accelerating, particularly within communication technology and data transmission. This results in interactions between individuals that are unprecedented. What occurs in one part of the world can have unanticipated repercussions in another part of the world, thousands of miles away. In terms of economics, society, and politics, the rapidity of transnational communication influences every individual, every organization, and every society since no China organization or society exists without a respirator. Consequently, one cannot avoid the trend of this is modifiable. There is a global communication network based on the Internet. Provides rapid access to a large quantity of information. A wireless system that enables us to communicate with flexibility and convenience. Education is a system that can utilize information technology, particularly for information exchange. Looking for documents, fees, research, teacher's guides, and instructional materials Teachers face challenges posed by distance teaching, meetings, distance training, etc. Students and educators have access to a plethora of information (Ekawit Kaewpradit, 2002).

Learning management with electronic books and computer-assisted instruction lessons in various media formats with interaction between the learner and the computer In a way called interaction, like teaching between teachers and students in a normal classroom, which is currently a new form of learning that has received interest in being able to use it in teaching. It consists of graphics, still images, animations, sounds, and letters that create motivation for learners and can review the content as needed. When doubts arise, students will be able to study and learn on their own, according to the ability of each person. It reduces the problem of differences. There is quite a lot between people studying. Because each person has different basic knowledge due to their studies at many educational institutions. These media have the potential to increase the learning achievement of students. It is a lesson that consists of multimedia and may use multidimensional media features to link to subtopics to facilitate learning. Students can learn from the content which includes text, images, and sound. It responds to the lesson so that lessons can be evaluated by reading tests and receiving immediate feedback. Self-learning this is consistent with the value stated by that computer lessons are developed to solve problems in learning about electronics in the basic electronics content. It helps students understand the use of various types of equipment and tools. Better, which will help reduce the risk and damage that will occur to tools and equipment and to the students themselves. By allowing students to learn from lessons on computers, I expressed the opinion that the characteristics of such computer lessons can be arranged for learning in accordance with and close to normal teaching and can also offer experiments in two situations in various ways so that students understand and can study as often as they want. When students have finished studying all the content, they will be able to apply the knowledge that they have come to actually practice (Pornpoj Putthawanpen, 2009: 3).

Sometimes teachers have to teach individual learners who are not able to learn in time or who do not understand the poses, which creates an obstacle for those who learn quickly. Boredom in waiting, including education Research from the above is in the form of various teaching media, books, and electronics. It is appropriate to be a teaching medium that encourages students to have higher academic achievement than teaching in front of the class using interesting programs along with having a good attitude towards Manage learning with electronic books. Therefore, the researcher is interested in using learning management methods with electronic books to organize teaching and learning activities. To solve this problem and study whether this method of organizing learning with electronic books will make a difference in academic achievement when taught in the normal way or not, including students' attitudes towards electronic books and as a way to develop teaching and learning about information and communication technology.

LITERATURE REVIEWS

Computers are recognized as a tool for developing teaching and learning to be more effective, as computers are continuously developed. It's easy and fast, both in terms of ease of use and integration ability. Combining multiple formats or multimedia, creates new and interesting forms of teaching, such as computer-assisted instruction lessons.

(CAI) computer-assisted instruction lessons on the network (CAI on the Web) media learning Electronics (e-learning), and electronic books (e-books), etc., the education system in Thailand is changing. Change according to the change. Changes in technology and changes in the education system of the world towards education that relies on new technology; this is the medium of learning. Therefore, technology is a tool that can bring appropriate benefits to the education world. If you know how to use it, it will be beneficial and worth the investment.

Definition of electronic books

Electronic books, also known as e-books (e-book, eBook, EBook, or e-book), are a foreign language word. It is an acronym for the term "electronic book," which many academics have used. The meaning and definition of electronic books have been given as follows: Bupphachart Talahikorn (1997: 86) said that electronic books It mean clicking to open multi-dimensional text documents and multi-dimensional media, allowing users to access related information quickly and conveniently, along with multimedia information in the form of electronic books, which will be useful. In learning, learners can choose to study at a time and place that are convenient for them. Khomsan Thanaiswan (2001: 31-33) said that electronic books, or e-books, are the application of information technology and reading together. This creates a new format for consuming news and information. It helps facilitate access to information. Travel and search for information by downloading electronic journals on the Palm Pilot instead of carrying books that are thick and heavy while traveling or downloading various technical manuals in digital format. Carrying thick files to meet customers or providing books for studying reports or other things Electronic books have been invented and developed to respond to such reasons. Supaporn Sippawesam (2002: 10) has given the meaning that electronic books mean In documents in digital format, information is presented in the form of text, still images, animations, and various sounds stored in electronic formats that can link information. The contents can be related to each other through the computer screen. Regardless of whether the content is in the same file or in different files, link information Are letters or numbers called multidimensional text (Hypertext), and if the information is connected Linking images, sounds, and moving images is called multidimensional media (hypermedia).

In conclusion, electronic books are electronic documents. Able to present information, including text, still images, moving images, sound, and tests, through the computer screen by connecting a link to information. The relationship of contents in the same file or different files is comparable to that of a book, but there is no limit to time and place, regardless of whether it is electronic data in any form.

RESEARCH METHODOLOGY

Population and sample group selection: The population used in the research includes students in Chongqing college of International Business and Economics, China who are studying in the first semester of the 2023 academic year totaling 100 people. The samples used in the research were 80 students in Chongqing College of International Business and Economics, China who studied in the first semester of 2023 determined Krejcie & Morgan's table and choose the experimental group and the control group of 40 students in each class determined by purposive sampling random.

Collect data: Tools that are used for the collection of victim information have also been created according to the following steps.

Electronic books: The researchers have created and developed electronic books as follows.

Learning management plan in this analysis, the researcher organized learning activities using the learning management plan. The researchers created two types of information and communication technology.

Academic achievement test on information and communication technology Researchers have created and developed, take the test for academic achievement in the subject of information technology and communication.

Test to measure students' attitude towards e-books. Psychologists have created and developed a test to measure students' attitudes towards e-books.

Data analysis: The analysis of the information the psychiatrist has obtained has been carried out according to the following steps:

- 1) Find the average score and standard deviations of academic achievement. Information technology and communication for students in both the experimental and control groups before and after the experiment
- 2) Compare the academic achievement in the subject of information technology and communication of students in the experimental group with the control group using the t-test Independent Sample (Chusri WongsRattana, 2007: 170).
- 3) Find the average score and the measurement standard deviation. The students' attitudes towards electronic books in the experimental group were compared with the attitude assessment.

Statistics used in data analysis: Average (mean), Standard Deviation, Find the efficiency of the movie Electronic Media from the formula $E1/E2$, Find the accuracy value (IOC), difficulty value (p), and discriminatory power value (r) of the learning achievement test on the subject of technology. Information technology and communication and Find the confidence value of the test's academic achievement in the subject of information technology and communication using Kuder-Richardson's KR-20 formula.

RESEARCH RESULTS

Part 1: Development of electronic books on information and communication technology for Students in Chongqing College of International Business and Economics, China to have efficiency according to the criteria of 80/80 using the calculation of $E1/E2$ values.

Table 1 Average standard deviation and process efficiency (E1) of the book electronics

Learning unit	N	Full score	Score received			
			ΣX_1	\bar{X}	S.D.	Percentage of average
1	40	10	288	8.23	1.09	82.29
2	40	10	275	7.86	0.94	78.57
3	40	10	295	8.43	1.04	84.29
4	40	10	281	8.03	1.07	80.29
5	40	10	297	8.49	1.12	84.86
Total	40	10	1,436	41.03	1.05	82.06
Process efficiency (E1) is equal to 82.06.						

From Table 1, it shows that the scores from taking the test measure learning achievement after the learning unit. The average value is 41.03 out of 50 points, equivalent to 82.06 percent, showing that the efficiency of the process (E1) is 82.06. Research data shows that in their view, labor practice and scientific and cultural knowledge are equally important for the growth and success of college students. Encouraging college students to complete basic education while participating in labor indicates that most parents recognize the importance of labor and have the awareness of allowing their children to continuously improve their comprehensive quality through labor practice on the basis of completing self-service.

Table 2 Average standard deviation and efficiency of results (E2) of electronic books

N	Full score	Score received			
		ΣX_1	\bar{X}	S.D.	Percentage of average
40	50	1,402	40.06	2.74	80.11
The efficiency of the results (E2) is equal to 80.11.					

From Table 2, it shows that the scores from the test to measure students' learning achievement after school have an average value of 40.06 out of a full score of 50, calculated as a percentage. 80.11 shows that the efficiency of the result (E2) is equal to 80.11.

Table 3 Results of finding the efficiency of the movie electronic media to be effective according to the specified criteria 80/80

Learning management plan	N	Measuring process results			Measuring results after learning			E ₁ or E ₂
		ΣX_1	A	E ₁	ΣX_2	B	E ₂	
1-9	40	1,436	50	82.06	1,402	50	80.11	82.06/80.11

From Table 3, it is shown that students who studied with electronic books received scores from taking the test to measure learning achievement after the test. The learning units during the study total 1,436 points, calculated as an average score of 41.03 out of a full score of 50, calculated as 82.06 percent, and the scores from taking the test to measure academic achievement in the main Students received a total score of 1,402 points, representing an average score of 40.06 points out of a total of 50 points, equivalent to a percentage of 80.11 efficiency (E₁/E₂) equal to 82.06/80.11, which is higher than the specified criteria.

Table 4 Results of comparing the learning achievements of students who studied using the learning management method with electronic books and the normal method

Organizing learning	N	full score	After studying			t
			\bar{X}	S.D.	S ²	
Methods for organizing learning using electronic books	40	50	40.06	2.74	7.53	*2.07
Normal method	40	50	30.60	5.09	25.95	

From Table 4, it is shown that the students studied the method of organization. Learning with electronic books after class had an average score of 40.06 out of a total of 50 points, with a standard deviation of 2.74, and students who learned by normal methods after studying had an average score of 30.60 out of a full score of 50 with a standard deviation of 5.09. Post-study academic achievement scores of students who studied by the method of organizing learning with electronic books and the normal method were significantly higher, with statistical significance at the .05 level.

Table 5 The study studied the attitude of students towards electronic books. T1T has more movies on electronic media.

Question	\bar{X}	S.D	Meaning
1. Learning about color technology Information and communication using electronic books are not difficult.	4.23	0.66	Agree
2. Electronic books help develop thinking skills.	4.53	0.51	Strongly agree
3. Learning about color technology Information and communication With electronic books, the learning curve is lower.	4.40	0.93	Agree
*4. Learning about color technology Information and communication With electronic books, it is difficult for students.	3.75	1.08	Neither agree
5. Learning about color technology Information and communication using electronic books allows you to gain knowledge on the subject. More information and communication technology	4.70	0.46	Strongly agree
6. Study and acquire knowledge about information technology and Communication through electronic books is not sufficient for our needs.	3.08	1.05	Neither agree
7. Electronic books make it easier to understand the content.	4.15	0.58	Agree
8. Students like to study with electronic books more.	3.80	1.04	Agree
9. The learning process using electronic books is appropriate for students.	3.95	0.78	Agree
10. Electronic books are media that stimulate interest in learning about color technology. Information and communication	4.60	0.50	Strongly agree
11. Students prefer learning with electronic books to learning with lectures.	4.03	1.00	Agree
12. Measurement and evaluation of learning outcomes in the book electronic media suitable for students	3.95	0.64	Agree
*13. I am not happy to have learned about technology. Information and communication using electronic books	4.38	0.77	Agree
14. Students like to take tests on information technology and communication from learning with electronic books. More than any subject.	4.05	0.55	Agree
15. Learning about color technology With information and communication from electronic books, one can concentrate more.	3.85	0.70	Agree
16. Students like to take tests in books or electronic media more than doing tests on answer sheets.	4.33	0.73	Agree
17. Learning about color technology Information and communication with electronic books make it possible to understand the content more.	4.00	0.72	Agree
18. Electronic books are media that are difficult to use.	3.85	0.95	Agree
19. Electronic books are a very interesting medium for students.	4.30	0.65	Agree
20. Electronic books encourage you to begin learning by yourself.	4.13	0.72	Agree
*21. If given the choice, students will choose to study with electronic books. It's the last way.	3.05	1.01	Neither agree
22. Learning content using electronic books is appropriate for students.	4.05	0.55	Agree
*23. Students like to study from books. Textbooks rather than learning with electronic books	3.00	0.93	Neither agree
24. Students would like to learn with electronic books in some other subjects.	4.00	0.78	Agree
*25. Learning about color technology Information and communication with electronic books make students bored while studying.	4.23	1.05	Agree
26. Students are proud of their own development through learning. with electronic books.	4.38	0.49	Agree
27. Electronic books make students interested in the subject. I learned more.	4.30	0.52	Agree
*28. Electronic books make studying difficult.	4.03	1.07	Agree
29. You will learn the learning outcomes and develop yourself through learning with electronic books.	4.23	0.53	Agree
30. Students are always using our free time to learn about technology and communication with electronic books.	4.45	0.60	Agree
Total score	4.06	0.75	Agree

From Table 5, it shows that students have attitudes towards movies. The overall level of electronic media was at a high level, with an average value ($\bar{X} = 4.06$) and a standard deviation

(S.D. = 0.75). When considering each item, it was found that students had an attitude towards electronic media at the highest level. The first three levels are learning about technology. Information and communication through electronic books to gain knowledge about technology More information and communication ($\bar{X} = 4.70$) Electronic books are a medium that stimulates interest in learning about information and communication technology ($\bar{X} = 4.60$), and electronic books help develop thinking skills ($\bar{X} = 4.53$).

DISCUSSION & CONCLUSION

From the results of research on the development of electronic books on information technology and communication for students at secondary schools under the office of Secondary Education Area 17 in Trat Province, we can discuss the results as follows:

1) Performance of the movie Electronic media in information and communication technology for students, it was found that the efficiency was 82.06/80.11, which was the efficiency of electronic books on information and communication technology. For students, the first year of study is according to the criteria set for 80/80. Learning is organized using electronic books. There is a teaching format that is different from teaching in the normal way by using media presentation programs to accompany the lectures that are given to students. It is important for students to know that this will be an obstacle. Learners will quickly understand the principles of cognitive theory when designing teaching media. Taking into account the differences between people, therefore, the investigators designed the movie. Electronic books on information technology and communication Stimulate interest using the theory of motivating players. Learners want to learn by being presented with modern text and graphics, resulting in easy memorization. Learners have the freedom to learn quickly. By being able to learn content in great detail and quickly according to the abilities of each individual, which is in accordance with the concept of knowledge structure theory and intellectual flexibility in implementing Gaye's teaching model, Learning is based on the principles of presenting content and organizing activities. Learning from step-by-step interactions is consistent with the behaviorist theory that I said Demonstrative behavior It is a response to a stimulus and learning characteristics That behavior will happens in a clear order when electronic books are a medium that stimulates interest by interacting with learners and informants. This provides learning objectives for students by linking existing knowledge with new knowledge that is relevant. From then on, new lessons are presented with guidance to ensure effective learning. Episode and continuation are not confused. When learning is complete, learners take a test and then evaluate the results of the learning they have actually practiced so that they can know the immediate results of the evaluation. Your own abilities and also work together to summarize what you can get. From learning to enhancing accuracy, Transferring knowledge to use Other things in the future This is consistent with Phasakorn Ruangrong (online: M.P.P.), who said that teaching and learning electronic media efficiently Educational theory should be applied. Gaye's nine steps of teaching are teaching steps that are accepted as being able to be used in teaching. Effectively Consideration of the capabilities of the media and the activities of the lessons on the network can lead to an analysis process that can be applied. When the results of the analysis are received, they can be used. In each step of teaching, this is in line with the research of Wannachana Erawan (2010: Abstract), who has researched the development of electronic books on environmental science projects. 5th Year Graduation Ceremony, Electronics Nicks has a performance score equal to 81.00/89.40, which is higher than the criteria set at 80/80, and Paiboon Pattum (2011) researched the development of electronic books on information technology. For organizing teaching and learning for Mathayomsuksa Year 2, it was found that the efficiency of electronic books according to the 80/80 criteria is equal to 88.13/84.69, which is higher than the established criteria.

2) The post-study academic achievement of students who learned by organizing learning with electronic books was higher than learning by organizing learning with electronic books. The normal method had an average of 40.06, significantly higher than the learning organization with the normal method, which had an average of 30.60, which was statistically significant at the level of 0.05. This indicates that electronic books that have been developed are effective in stimulating learners' interest. It is a step-by-step learning process. You can review and learn easily according to the abilities of each person. This helps reduce differences between people. Electronic books are divided into groups. Learning is divided into small units, arranged from easy to difficult. Learners learn step by step, are not confused, are easy to understand, and practice making decisions that lead to learning on their own until thinking and management skills develop. Learn with electronic books. Learners can know the results of their learning immediately, which is considered a reward. In return, it can be classified as an inspiration for students to want to continue learning, in line with the research of Nophasanat Chalao (2011: Abstract). It was found that students in the experimental group who learned with electronic books had a significantly higher average score than those in the control group. Statistically, Level .05 Nuanmanee Madajupa (2011: Abstract) has examined the development of electronic books that affect the academic achievement of students. You can study using books. Electronic media on the subject of creating moving images had a higher average score than students taking classes with regular teaching. 0-5 and regulations (2554: Abstract) I researched the development of electronic books on basic knowledge about computers for students in their second year of secondary school.

2 The results of the research found that the academic achievement of students in the experimental group and control group were significantly different from each other at the .05 level, with learning using electronic books having a higher score than normal.

3) Students have attitudes towards electronic books. There is an average value ($\bar{X} = 4.06$) and a standard deviation (S.D. = 0.75), which is at a high level. This is because the movie's electronic media created

From the application Episode of the organizing format, the learning of the book has resulted in electronic books having appropriate formats, sizes, backgrounds, and character colors. There are hidden messages under the picture (pop-up) that attract attention. Interested, not bored, combined with easy access to the content, content learning occurs. Learn various information well, quickly, step by step, and be able to memorize it. What can be learned is that the learner has taken the test and knows the results of his or her own assessment immediately. This results in the learner having good attitude towards information and communication technology.

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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.

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