A Design System for Electronic Tale Book with Creative Activities to Enhance Creative Thinking of Elementary School Students

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Abstract

This paper is a report on the findings were: 1) to study the inputs (elements) and processes (steps) of a design system for electronic tale book with creative activities to enhance creative thinking of elementary school students 2) to construct a design system for electronic tale book with creative activities to enhance creative thinking of elementary school students 3) to study the results of using a design system for electronic tale book with creative activities to enhance creative thinking of elementary school students and 4) to propose a design system for electronic tale book with creative activities to enhance creative thinking of elementary school students. Instruments in this research consisted of a creative test, a specialist interview form, an attitude questionnaire and a design system for electronic tale book with creative activities to enhance creative thinking. The data were analyzed by average, standard deviation, and t-test. The samples for this study were 10 undergraduate students of Faculty of Education, Chulalongkorn university studied in computer based educational printed material production course and 12 experts in design and development, electronic book, children's literature and creative thinking.
The results of this study revealed that seven inputs are: 1) motivation 2) objectives 3) contents 4) learner 5) instructor 6) productivity and 7) evaluation and six processes are: 1) preparation 2) analysis 3) design 4) development 5) implementation and 6) evaluation. The productivity is an electronic tale book with creative activities. The implementation of a design system showed that students had posttest creative ability scores statistically significant at .05 level higher than pretest scores.

Introduction

Creativity is a very important skill in modern times because it is essential in the development of the country to be able to the invention of a new technology. Therefore, it is necessary to teach children having creativity by using creativity process. The stories promote the creativity of children for supporting the imagination. Now electronic tale books are the media to meet the needs of human beings to bring media into the books contained in digital form. Thus, undergraduate student in education should have skill to design electronic tale book with creative activities to enhance creative thinking of elementary students. In this research it has been design system an electronic tale book which consists of factors and process including creative activities such as 1.Dress up games 2.The incredible line games and 3.Coloring game. These creative activities blend in electronic tale book to develop creative imagination for the elementary students and improve achievement in learning.

The objectives of this study

The purposes of this research were as follows:

1. to study the inputs (elements) and processes (steps) about a design system for electronic tale book with creative activities to enhance creative thinking of elementary school students
2. to construct a design system for electronic tale book with creative activities to enhance creative thinking of elementary school students
3. to study the result of using a design system for electronic tale book with creative activities to enhance creative thinking of elementary school students
4. to propose a design system for electronic tale book with creative activities to enhance creative thinking of elementary school students

Hypothesis

The electronic tale book with creative activities posttest by using with the experimental group students was higher than the pretest at the .05 level of significant.

Research questions

1. What inputs, processes outputs and feedback of a design system for electronic tale book with creative activities to enhance creative thinking of elementary school students?
2. Can undergraduate students design an electronic tale book with creative activities to enhance creative thinking of elementary school students by using the design system?
3. Can electronic tale book with creative activities improve elementary student's creative thinking skill?

Methodology

A design system for electronic tale book with creative activities to enhance creative thinking of elementary school students was R&D research. The methodology consisted of the following; the researcher

(1) Studied the inputs (elements) and processes (steps) about a design system for electronic tale book with creative activities to enhance creative thinking of elementary school students.

(2) Constructed a design system for electronic tale book with creative activities to enhance creative thinking of elementary school students.

(3) Studied the result of using a design system for electronic tale book with creative activities to enhance creative thinking of elementary school students.

(4) Proposed a design system for electronic tale book with creative activities to enhance creative thinking of elementary school students.

Instruments

Instruments of this research consisted of a creative test, specialist interview form, attitude questionnaire, design system for electronic tale book with creative activities to enhance creative thinking. The content validity of these instruments was obtained from twelve experts. These instruments were revised according to suggestion of the experts.

Experimental Stages

1. Study documents related research and systems to certified experts before trials.

2. Conduct activities for teaching the design of electronic tale book with creative activities for a period of 9 weeks (36 hours) as follows.

2.1 Undergraduate student design of electronic tale book with creative activities.

2.2 Students design electronic tale book in each steps

Processes	Contents	Active learning activities
1.Preparation	Consult the documentation by electronic guide system design tale book.	1. Instructor motivates student's interest. 2. Instructor gives orientation to the students. 3. Students work in pairs on a voluntary basis. 4. Students study the guide system design.
2. Analysis		1. Students analyze the audience to develop by the following analysis. 1.1 Research objectives and scope of the content of the third grade. 1.2 Analysis of the students about prior knowledge of the students. How to learn such as reading and listening skills of the students and interests of learners. 1.3 Analysis of events and activities, including analysis of the subject identification of structure, component of content, structure of a fairy tale,the elements of electronic book by using graphics, motion picture ,creative activities such as drawing a picture and using image and set the criteria for evaluating a rubric score. 1.4 Analysis of the context and conditions such as computer resources, media and devices.

Processes	Contents	Active learning activities
3. Design		1. Designed objectives, lesson content, and the content creation activities. 2. Students collected such as multimedia. 3. Students wrote scripts and storyboards. 4. Student's works submitted to the advisors and experts by suggestions for improvement.
4. Development		1. Students produced and spent time in development their works. 2. Students created electronic book as storyboards by computer programs. 3. Student's works presented to advisors and experts to improve and modify the defect. 4. Student's electronic tale book experimented with a small group and then be revised them.
5.Implementation		The electronic tale book with creative activities tried out with elementary students.
6.Evaluation		1. Elementary students took creativity test before learning with electronic tale book that designed by undergraduate students and then they took creativity test again. 2. Revised the design of electronic tale book with creative activities and presentation.

3. Undergraduate student took electronic tale book tried out for elementary students 21 hours. (7 weeks)

4. Undergraduate student have electronic tale book with creative activities to enhance creative thinking of elementary students and assessment by the quality assessment form of electronic tale book with creative activities.

Data Analysis

Undergraduate student have produced electronic tale book with creative activities that were measured by the quality assessment form which was classified by measuring criteria (as shown in Table 1). The creative thinking ability was analyzed by using dependent t-test in Table 2

Table 1: The results of the quality assessment form of electronic tale book with creative activities which divided as follow.

The quality assessment criteria of electronic tale book with creative activities.	**N** (book)	**Mean**	**SD**
1. The correctness of the content / material.	5	4.60	.55
2. Consistency of content with the purpose of learning.	5	4.60	.55
3. Consistent with the purpose of learning creative activities.	5	4.40	.55
4. Consistent with the contents of the image.	5	4.80	.45
5. Suitability of the content to the learner.	5	4.40	.55
6. Appropriate number on the level of the students.	5	4.20	.45
7. Appropriate creative activities with the content.	5	4.80	.45
8. Appropriateness of the composition.	5	4.80	.45
9. Appropriate size and format of the characters used.	5	4.20	.45
10. Appropriate font color and background.	5	4.40	.55

5 = Excellence 4=Good 3=Satisfied 2=pass 1=fail

The results showed that five electronic tale with assessment criteria were excellence and good.

Table 2: The results of means, standard deviation and a t-test dependent between the pretest and posttest creative thinking ability scores of the experimental group.

T-Test

[DataSet1]

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pretest	127.7931	29	23.74625	4.40957
	posttest	256.6897	29	22.09251	4.10248
Pair 2	F*	22.9655	29	5.40161	1.00305
	F*	38.8966	29	1.97022	.36586
Pair 3	F**	18.1379	29	4.81608	.89432
	F**	28.0690	29	3.72186	.69113
Pair 4	O	34.9655	29	8.87002	1.64712
	O	80.1379	29	13.49001	2.50503
Pair 5	E	51.7241	29	12.67702	2.35406
	E	109.5862	29	19.25490	3.57555

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	pretest & posttest	29	-.338	.073
Pair 2	F* & F*	29	-.071	.715
Pair 3	F** & F**	29	-.060	.756
Pair 4	O & O	29	-.139	.472
Pair 5	E & E	29	-.373	.046

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	pretest - posttest	-128.89655	37.50176	6.96390	-143.16146	-114.63165	-18.509	28	.000
Pair 2	F* - F*	-15.93103	5.87933	1.09176	-18.16741	-13.69466	-14.592	28	.000
Pair 3	F** - F**	-9.93103	6.26174	1.16278	-12.31287	-7.54920	-8.541	28	.000
Pair 4	O - O	-45.17241	17.14449	3.18365	-51.69383	-38.65100	-14.189	28	.000
Pair 5	E - E	-57.86207	26.71239	4.96037	-68.02292	-47.70122	-11.665	28	.000

After using the process of a design system for electronic tale book with creative activities model, creative thinking ability was analyzed by the t- test dependent found that there was a significant difference between pretest and posttest of the experimental group in creative thinking ability at the.05 (See Table 2)

Findings

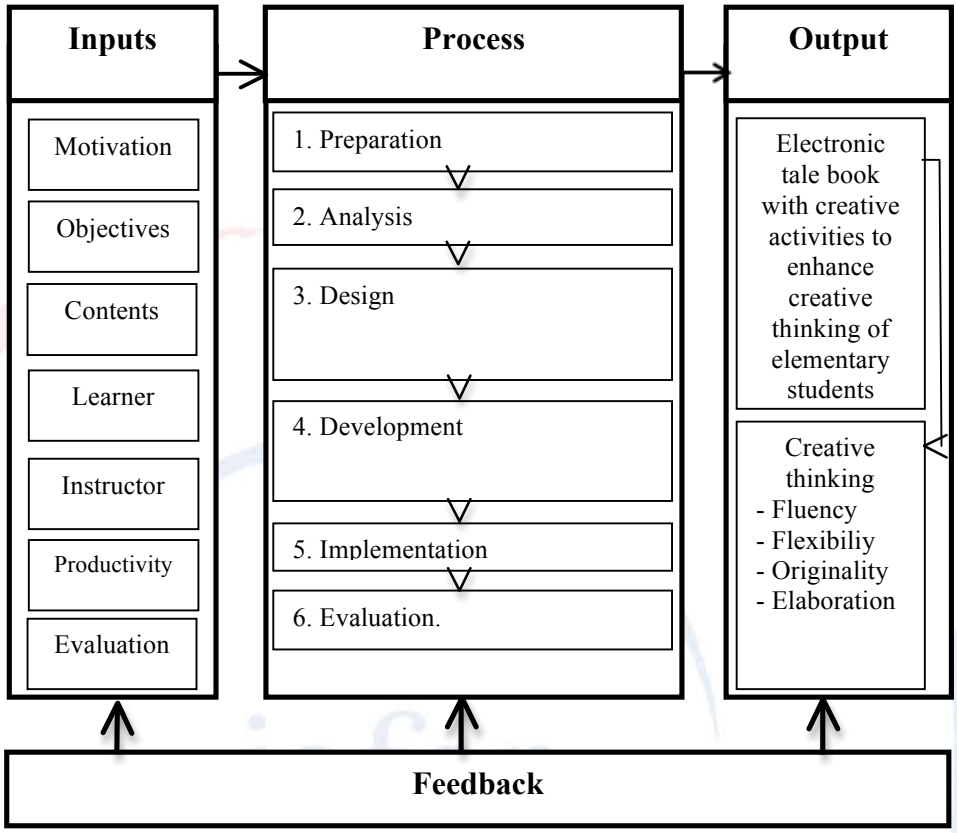
The results of this study revealed that:

1. The experts' opinions agreed that a design system for electronic tale book with creative activities to enhance creative thinking of elementary school students consisted of seven inputs: 1) Motivation 2) Objectives 3) Contents 4) Learner 5) Instructor 6) Productivity and 7) Evaluation. The six processes consisted of 1) Preparation 2) Analysis 3) Design 4) Development 5) Implement and 6) Evaluation.

2. A t-test comparison of posttest and pretest of the experimental group students showed statistically significant difference at.05 level in creative ability.

3. The experimental group revealed that they were satisfied with a design system for electronic tale book with creative activities to enhance creative thinking of elementary school students

4. A design system for electronic tale book with creative activities to enhance creative thinking of elementary school students was presented as follows:



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