

Change of Attitude in Class for Creating Slides to Present Product

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Abstract. The creation of product presentation slides using PowerPoint was implemented in order to ensure that students acquire the knowledge and information required to use computers. Students created slides presenting products in which they were interested, inserting animation and recording narration. This class combined evaluation and revision activities and implemented active learning and, along with enhancing computer skills, awareness relating to a variety of skills required for problem solving were enhanced in an attempt to cultivate independent thinking skills. In particular, the aim was not only to enhance PowerPoint skills but also to improve expressiveness, planning ability and ability to make proposals. This paper reports on the class to create product presentation slides, its contents and its learning effects.

Keywords: Product presentation · Creation of slides · Evaluation activities · Revision activities · Problem-solving ability · Higher education

1 Introduction

There have been many attempts to propose new class methods and implement effective classroom practice in the past. Recently, the Central Council for Education pointed out that a switch to active learning in which students independently detect problems and find solutions is essential and reports that active learning will be implemented in order to promote high quality undergraduate education that stimulates independent study in order to accumulate independent study experience and acquire skills for lifelong learning [4]. Some classroom practice showed that it was possible to develop classes that implement active learning, to enhance problem-solving ability and cultivate independent thinking skills by incorporating self-evaluation, evaluation by others and repeated revision tasks for some tasks for university students [5]. We believe that it is possible to cultivate the skills to solve these problems by creating things that people desire and things that people will use.

There are some studies concerning storytelling [2, 3, 9, 10]. Creative activities that produce works that inform and entertain people by describing real and imaginary events, using graphics, narration, and music are called storytelling [2, 11]. In digital storytelling, still pictures such as photographs, figures, and drawn pictures are displayed sequentially to create a storytelling and narrated. Digital stories can be easily reconstructed. Still pictures are easy to handle for the producers of such assignments,

and students can reflect upon memories or what they have learned through reviewing still pictures [1]. In experiments for one of the themes, Creation of Storytelling, computer science experiments for required 3-hour/week subjects in the 3rd year, had students creating projects that looked at the students themselves and asked them to talk about themselves in order to promote self-understanding [6]. This creation process incorporated evaluation and revision activities and it was reported that it was possible to cultivate skills to solve tasks [7, 8].

In this study, the aim was not only to enhance PowerPoint skills but also to improve expressiveness; planning ability and ability to make proposals and classes to create slides to present products were implemented using PowerPoint. This is active learning in which it is not possible for students to complete their project unless they participate actively in classes. Students created slides presenting products in which they were interested, inserting animation and recording narration. Students viewed each other's slides and learned from each other. Mutual evaluation was used for interaction, students evaluated others and commented. Following this, slides were revised and the students again viewed and evaluated each other's slides. By actively participating in evaluation and revision activities while interacting, awareness relating to a variety of skills required for problem solving was enhanced in an attempt to cultivate independent thinking skills. Learning effect for the class to create slides to present products is reported up to now.

Below is an explanation of class contents, project contents, creation methods and evaluation sheet contents and the analysis of this information and its results are reported.

2 Class Contents

The target was the IT subject displayed in Table 1, a required subject for the second half of the 3rd year Computer Science course at University A. In this class, students chose their preferred theme from three possibilities and worked on this theme in 15 classes. Approximately one third of the class students attended (29 students). The students are all Japanese and consist of one female and 28 males. Each class was 90 min long and each student created two projects. The class was taught according to the plan in Table 1. The first seven classes were used to create slides presenting

Table 1. Class plan

Time	Class plan	Plan related to assignment
1	Explaining Experiment method	Problem description, information retrieval, considering the description to introduce, inputting evaluation sheet 1
2	Creating slides to introduce products	Submission of the entry form, creating slide
3	"	Creating slide, putting the animation
4	"	Creating slide, recording narration, writing report 1
5	Evaluation and correction of slides to introduce products	Mutual evaluation, inputting evaluation sheet 2, modifying slide, writing report 2
6	Evaluation of slides to introduce products and report	Mutual evaluation, inputting evaluation sheet 3, writing report 3
7	Completion of the report and the evaluation	Completing report and evaluation sheet

products and the next seven classes were used to create slides presenting books. Viewing and evaluations were carried out twice and revisions were carried out once.

This paper reports on the classes to create slides presenting products. The aim of these classes was to ensuring that students acquire knowledge about computers they have learned about through classes in which they actually use computers and to utilize this knowledge. Furthermore, students selected the product they were interested in and created six slides with product details and features, why they liked the product, advertising, positioning in terms of competitors' products and proposals to improve the product. Students incorporated movement into the slides using animation so that the contents were easier to understand. Students created the contents of explanations in order to narrate the slides and then recorded this narration to complete slides to be viewed by the whole class. By doing this, written expression as well as expression using images was cultivated. By creating product presentation slides, evaluation activities were incorporated into creation, awareness relating to a variety of skills required for problem solving was enhanced and independent thinking skills were cultivated.

In the creation of slides, it was important to create explanations to present the product and students were encouraged to think about the composition of product images and photos and how to express them. Students learned about placing details, images, animation and narration in the appropriate places, how to communicate their own thoughts and ideas to other people and the importance of thinking about how to convince people to buy the product. In this class, after creating slides, students viewed the slides, noted the reaction to them and reviewed their projects.

A 39-page experiment booklet was distributed in the first class. Based on this booklet, there was an explanation of the aim of the class, its contents, plan, how to create slides and the experiment method. A sheet (the size of 2 A4 sheets) to fill was distributed and students were told to create a product presentation, fill in the right side of the sheet and draw on the left by the next class. The second class gave an explanation of how to incorporate animation and the students created the product presentation slides. The third class explained how to write reports and record navigation and students incorporated their animations. The fourth class had student record narration and complete the product presentation slides. Files with product presentation slides were submitted at the end of this class. The teacher then amalgamated all the projects into one. The evaluation by others sheet was distributed in the fifth class, all the projects were viewed and evaluated and the evaluation sheets were submitted. Following this, student revised their projects. The revised product presentation slides were viewed again in the sixth class, evaluation was conducted again and evaluation sheets were submitted. Students wrote one third of their reports for the days before the fourth, fifth and sixth classes and these were returned to the students with suggested revisions during the classes. Reports were completed in the seventh class and all evaluation worksheets were completed and submitted.

The framework for product presentation documents, the framework for reports and evaluation files were available to download from an e-learning site. The teacher created the evaluation sheets required for class evaluation activities as evaluation worksheets. These were three self-evaluation sheets, two evaluations by others sheets, two self-re-evaluation sheets, evaluation of awareness relating to improved skills and level

of software skills, etc. Students downloaded the files, filled in the applicable details and stored them.

3 Contents of Production Presentation Slides Created by Students

The aim of the theme was to think about how to convince people to buy products such as electronic or industrial goods, to present a product in which the student was interested or that the student would like to buy with slides and convince other people to buy it. In the future, hypothetical product development plans can also be considered. Select a specific product. Insert images of this product without exception. However, do not include game software.

Presentations are composed of six slides. The slideshow is no longer than two minutes. Font size is 28 or more, as much as possible.

The contents of the six slides were composed as follows:

(1) Product Name and Catchphrase

The title should be a catchphrase such as “(adjective) product” or “X product is (adjective)”. Concrete presentation of a product that is currently on sale.

(2) Product Details

Clearly state product name, company name, product details, model number, year of launch, etc. Product details include an explanation of what the product does. Explain what kind of object the presentation is about.

(3) Product Features and what the Student likes about the Product

Explain production functions, convenient points and good points, etc. Students present what they liked about the product when they used it. Explain the reason for recommending the product and its appeal. Explain impressions from use and convince the viewer to buy the product.

(4) Advertising

Create newspaper/magazine advertising or newspaper insertion advertising. Create advertising by considering ways to appeal to the consumer in order to convince them to buy the product.

(5) Positioning in Terms of Competitors' Products

Display product sketch, specifications, prices, amount sold, market share, competitor information and points for each company name and product name to demonstrate the position of the presented product in terms of competitors' products. Use graphs and tables to give a visual image.

(6) Proposals to improve the Product

Think about inconvenient points and functions that could be added. On the basis of making a proposal to the company, consider sales strategy and methods to

promote sales in order to sell more units than are being sold currently and make proposals to improve the product.

4 Results of Analysis

Six types of survey were used in order to understand the learning effects of creating the product presentation slides detailed in the previous section. The foundation of learning was considered to be in securing time for each activity therefore time relating to class activities was surveyed on report sheets. Next, project narration time was analyzed and the time required for viewing the projects was investigated. Awareness relating to skills was surveyed before and after the class and, through these changes, it was possible to understand the level of achievement of the aim of the class.

Below, the results of statistical significance are acceptable with a significance level of 5 %. The symbols m, SD, t and p represent mean, standard deviation, test statistic and (significant) probability respectively. Significance levels of 0.1 %, 1 %, 5 %, 10 % are represented by ***, **, *, + respectively.

4.1 Time Taken for Each Part of Experiment

The total number of hours required for research in order to provide explanations and create slides, to work on the creation of product presentation slides and to write the report was stated on the title page of the report. These times were aggregated and averages are shown in Table 2. The average time taken for the project was 19.8 h of which approximately 5 h was class time and an average of approximately 15 h was spent for creating slides and writing the report outside the class.

Table 2. Time taken for each part of class (Hours)

necessary time	Survey	Creating slide	Writing report	Total
m	4.9	7.3	7.7	19.8
SD	2.5	3.1	3.1	6.3

4.2 Project Narration Time

Twenty-eight students submitted product presentation slide files. Approximately two minutes was required to view each project and approximately one minute was required for evaluation by others. Narration times for projects created by students are shown in Table 3. There were six PowerPoint slides with a total runtime of 115.2 s. The first slide was the title page therefore the time used was slightly shorter than the others. By limiting the number of PowerPoint slides to six, time taken was approximately 1.92 min. Maximum and minimum times taken were 223 s and 62 s respectively. The time limit was set at two minutes and most projects were close to this limit.

Table 3. Project narration time (seconds)

Slide No.	1	2	3	4	5	6	Total
m	9.3	18.7	28.4	16.5	24.1	22.4	115.2
SD	5.4	7.1	11.8	8.4	14.1	10.6	51.7

Total viewing time and time for evaluation by others was approximately 90 s. Due to this, class time was slightly exceeded.

4.3 Changes in Awareness Relating to Skills

Awareness relating to skills shown in Table 4 was recorded before the class (1st class) and after the class (7th class) and submitted. There were nine grades for evaluation

Table 4. Statistical significance test results for awareness relating to skills

Attitude related to Ability	Before		After		Elongation		Significance Test	
	m	SD	m	SD	m	SD	t	p
(1) Interest in and curiosity about computers	4.4	1.4	5.3	1.4	0.9	1.2	3.6	***
(2) Understanding of computers	3.8	1.2	5.1	1.8	1.3	1.5	4.5	***
(3) Computer operation skills	4.0	1.3	5.2	1.4	1.2	1.0	6.0	***
(4) Computer usage methods and broadening of situations	4.0	1.1	4.9	1.3	0.9	0.9	5.0	***
(5) Ability to set challenges, ability to discover problems	3.8	1.0	4.9	1.3	1.1	0.9	6.1	***
(6) Ability to plan, to do things in a planned manner	3.7	1.2	4.8	1.3	1.1	1.2	4.6	***
(7) Cultivation of understanding of knowledge learned	3.9	1.3	5.2	1.2	1.3	1.3	5.2	***
(8) Ability to study by oneself, ability to learn	4.1	1.5	5.1	1.6	1.0	1.2	4.3	***
(9) Ability to gather information, ability to conduct research	4.4	1.6	5.6	1.5	1.1	1.6	3.6	***
(10) Ability to sort through related information or data	4.0	1.2	5.3	1.2	1.3	1.3	5.1	***
(11) Ability to analyse information	4.2	1.2	5.0	1.3	0.8	0.8	5.1	***
(12) Ability to express thoughts in writing	3.9	1.4	5.0	1.5	1.2	1.0	5.9	***
(13) Ability to express thoughts through media other than writing	3.6	1.2	4.9	1.6	1.3	1.3	5.1	***
(14) Ability to speak and explain things to others in an easy-to-understand manner	3.4	1.2	4.8	1.6	1.4	1.1	6.4	***
(15) Ability to make presentations	3.6	1.4	5.0	1.4	1.3	1.2	5.5	***
(16) Ability to listen to what people are saying and ability to ask people questions	4.3	1.7	5.0	1.7	0.7	0.9	4.2	***
(17) Communication ability	4.3	1.7	5.0	1.6	0.7	0.8	4.4	***
(18) Ability to appropriately self-evaluate one's thoughts	4.3	1.2	5.3	1.4	0.9	1.1	4.2	***
(19) Ability to appropriately evaluate other people's thoughts	4.4	1.3	5.1	1.4	0.7	1.0	3.4	***
(20) Ability to correct and improve on one's own thoughts	4.4	1.4	5.2	1.4	0.8	1.0	4.1	***
(21) Ability to pursue matters deeply, ability to explore matters	4.1	1.1	4.9	1.2	0.7	0.9	4.2	***
(22) Ability to execute, ability to practice, ability to put into action	4.0	1.2	4.7	1.2	0.7	0.9	4.0	***
(23) Ability to cooperate with others, ability to study in cooperation with others	4.7	1.6	5.3	1.6	0.7	1.2	2.7	*
(24) Sense of accomplishment, sense of satisfaction	4.3	1.5	5.2	1.5	0.9	1.3	3.3	***
(25) Sense of fulfilment, sense of achievement	4.4	1.5	5.2	1.5	0.7	1.2	3.1	**
(26) Ability to solve problems	4.3	1.4	5.0	1.4	0.7	1.0	3.4	***
(27) Ability to construct and create knowledge	3.9	1.4	4.7	1.6	0.8	1.0	4.1	***
(28) Ability to think, consider and come up with ideas by oneself	4.1	1.4	5.1	1.4	1.0	1.2	4.4	***
(29) Creativity/ability to create	4.2	1.5	5.0	1.3	0.7	1.3	3.0	**
(30) Interest in and curiosity about this field	4.7	1.5	5.3	1.6	0.7	1.5	2.3	*
Average	4.1	1.4	5.1	1.5	1.0	1.2	23.1	***

*** p<.001, ** p<.01, * p<.05

including: 1. None at all, 3. Slight awareness, 5. A little awareness and 9. Extremely high awareness. Twenty-seven students responded to both pre- and post-class questions concerning awareness. Average assessment values for the 30 categories of awareness relating to skills pre- and post-class showed a significance level of 0.1 ($t(809) = 23.1^{***}$, $p < 0.001$) as a result of paired statistical significance tests. Overall, it was demonstrated that students felt improvements in awareness relating to skills.

The results of paired statistical significance for pre- and post-class average assessment values for each category for awareness relating to skills showed statistical significance in all 30 categories. It was understood from this that students felt that all awareness relating to skills had improved. In this way, it was understood that awareness of skills and emotions relating to problem-solving in the classes held had an improving effect.

The test results in Table 4 showed improvements in (1), (2), (3) and (4). Consequently, one of the aims of this class, to ensure that students acquire knowledge about computers they have learned about, can be considered to have been achieved, at least in terms of awareness.

31, 26, 26, 6, 6, 4, 3, 2, 1, 1, 1 and 1 students filled in the learned how to or how to use narration, PowerPoint, animation, self-objectification, appropriate evaluation by others, written expression, presentation, Word, microphone, Paint, BGM and touch typing respectively in the report in which students wrote about what they had learned from the experiment. The total number of written comments was 108, giving an average of 4.0 per person. All students wrote that they had become able to do one of the above. One more aim of the class, to enhance computer skills, can be considered to have been achieved according to student reports.

Through the creation of product presentation slides, written expression skills were cultivated by writing presentation text and reports and expression skills other than in the written form were also cultivated not only by inputting explanations into slides but also by pasting in products images or related photos. Enhancing awareness of a variety of skills which is required for problem-solving also significantly improved as shown in Table 6 and awareness aims can be considered to have been achieved.

5 Conclusion

Active learning was incorporated to design and hold classes to create product presentation slides using PowerPoint. Students determined the product they wanted to present, researched this product, thought about how to explain the project, created slides, inserted animation and recorded narration. All students viewed each other's slides and learned from each other. Mutual evaluation was conducted and comments were made. Following this, slides were revised and all students mutually viewed and evaluated the slides again. Students mutually interacted and cooperated with other students and by actively participating in evaluation and revision activities in the process of completing their projects, problem-solving abilities were enhanced and classroom practice that cultivated independent thinking skills was reported.

The findings from this class can be summarized as follows.

- (1) Total time taken for surveys of explanations and creation of slides, the creation of product presentation slides and the creation of reports was 19.8 h on average.
- (2) Total narration time for projects was 115.2 s on average.
- (3) Assessment values for awareness relating to skills were felt to have improved overall.
- (4) Statistical significance tests for each category for awareness relating to skills showed awareness in all 30 categories was felt to have improved overall.

In the future, we would like to reveal useful activities in improving attitude in class by analyzing the post survey of attitude. In addition, we would like to compare the effects of the above-mentioned storytelling [5] and the effects of this class. We would also like to apply innovation to class methods to improve learning ability for students with a wide range of learning abilities.

Acknowledgments. The author appreciates the support of the Grant-in-Aid for Scientific Research, foundation study (C25350364) provided by the Ministry of Education, Culture, Sports, Science and Technology, Japan for this research. The author would like to express appreciation to the students who were surveyed and who helped collect educational information.

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