A STUDY ON TEACHER TRAINING TO INCORPORATE GAMIFICATION IN CLASS DESIGN
- PROGRAM DEVELOPMENT AND IMPLEMENTATION IN A TEACHER TRAINING COURSE -

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ABSTRACT

Having classes with "fun" incorporated into their design is crucial for learners. Students can learn from classes that combine learning with fun. In this study, we developed a program for university students in a teacher training course that aimed to teach ways of incorporating gamification into class design.

KEYWORDS

Gamification, game design, lesson planning, teacher training

1. INTRODUCTION

Having classes with "fun" incorporated into their design is important for learners. Recently, gamification has attracted attention as one method of achieving fun in a class design. According to Inoue (2012), "Gamification is the act of order to apply the knowledge that has been cultivated in a computer game to the reality of social activities." In this study, we developed a program for university students in a teacher training course that aimed to teach ways of incorporating gamification into class design.

2. DEVELOPMENT AND IMPLEMENTATION OF THE PROGRAM

In developing the program, we pursued the following three objectives. The first is to develop student teachers' understanding of gamification. The second is to have the student teachers produce an output, namely, create a class utilizing gamification. The third is to reduce the lesson time.

The program, which was developed by us, was conducted in a teacher training class for compulsory courses that were prepared by the author. The program was attended by 63 student teachers in their third year of studies at the Faculty of Education.

Table 1. Flow of the program

	Content
The first class (90 minutes)	**Directing and teaching building ①** ・"From dull to fun" "What is gamification?"
Challenge after class	Analyze your favorite game from the perspective of gamification.
The second class (90 minutes)	**Directing and teaching building ②** ・I want to analyze lessons from the viewpoint of production.
Challenge after class	To more make the lessons more interesting, design a class conscious lesson in your major subject.

3. RESULTS

To clarify the program achievements, we analyzed the participants' questionnaire responses and free descriptions.

A questionnaire was given both before and after the program. To examine whether the participants had acquired the ability to use gamification, we utilized a four-point scale to measure their "interest" and "confidence" in lesson planning (4: Very much, 3: Well, 2: A little, and 1: Not much). The analysis included the data of 55 student teachers who had participated in both classes, out of the 63 who participated in the program.

A t-test conducted to reveal the average value of the pre- and post-class responses; the responses demonstrated a clear and significant difference for the three questionnaire items in terms of "interest" and "confidence." The results are shown in Table 2.

Table 2. Questionnaire results (n = 55)

Question	Before	After	
(1) I like to devise lesson plans.	2.24	2.56	**
(2) I have the confidence to devise a fun teaching plan.	1.89	2.31	**
(3) I have the confidence to make a class interesting.	2.07	2.46	**

In addition, we analyzed the students' overall impressions of the lesson in their written responses. Consequently, we were able to examine the co-occurrences of the following words: "lesson–production–think–guidance" and "study–applications–element."

Based on these results, and considering the three objectives of the program, we considered the overall effects of the program. First, we discussed the participants' feelings, experiences, and understanding of gamification. In their free descriptions, the participants experienced empathy to notice, as well as the primary character of the game and analysis of the game. Utilizing these responses, we effectively analyzed the games and stories.

Second, clearly presenting the aspect that we "produce" class designs with gamification, the students demonstrated they were more aware of the connection between gamification and class development. The questionnaire results showed that the participants' "self-confidence to create a fun lesson plan" and "self-confidence that the lesson is interesting" improved. Furthermore, in the analysis of the participants' impressions, "lesson–production–think–guidance" showed a strong co-occurrence. Based on these two results, the program objectives are considered to have been largely achieved.

Finally, regarding the teaching time, it became clear from the results that a short time is possible.

As shown by the above results, the program was effective at developing student teachers' ability to use gamification in class design.

4. FUTURE DEVELOPMENT

We have developed a program tool to spread the program. The "lesson plan idea tool" will help teachers acquire ideas for incorporating gamification into their class design. In the future, utilizing the idea of a program tool, we hope to further develop the program, implement it, and measure its effects in university teacher training courses.

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