Development and Application of E-Learning Content for Advertising Education

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Abstract

The purpose of this study was to develop e-learning content for advertising theory applying Gagné's Nine Events of Instruction, and to apply it to advertising courses offered in college programs. In advertising courses, emotional appeals based on visual images and multimedia materials are becoming more important. In addition, e-learning content is becoming important in educational programs, but most of the content is not based upon the principles of instruction models for the learners. This study, therefore, has developed e-learning content for advertising theory while applying Gagné's 'Nine Events of Instruction'. The results of this research indicate how Gagné's principles can be applied to content for advertising theory. To measure the content's efficiency, questionnaires given to 120 advertising majors were analyzed. The results can be summarized as follows. First, the e-learning content for advertising theory had positive learning effects on the students. Second, Gagné's Nine Steps of Instruction produced effective classroom participation among the students. Third, the content provided an effective learning atmosphere for the students, and learning activities were activated among the learners. In conclusion, this research has found that e-learning content applying Gagné's Nine Events of Instruction worked properly in the advertising classes. Most importantly, the effectiveness of the content depends upon the reflection of the principles on the instruction model.

Keywords: E-learning, Instruction Theory, Gagné's Nine Events of Instruction, Advertising Education, Educational Contents

1. Introduction

Over the last decade, e-learning has grown into a significant component of educational pedagogy worldwide. E-learning has been promoted as being more cost effective and convenient, while increasing opportunities for life-long learning [1, 2]. It has demonstrated several advantages over traditional learning, especially in allowing 'learning anytime and anywhere'. Students have access to online course material independent of time and place [2, 3]. It also allows students to reflect on the learning materials and their responses, and permits them to work at their own pace, regardless of race, sex, disability, or appearance. Students can engage with the information more effectively, reviewing the multiple representations embedded in the online course [2, 4].

The effectiveness of e-learning content is advancing through the development of computer and network technology. In addition, e-learning has become an alternative when taking a course or earning a degree [5, 6].

Recently, there have been several attempts to improve learning in advertising. Pedagogy receives the greatest attention with respect to research, and improvements in learning methods and effectiveness.

Advertising is a practical study, so it is essential that theory and reality be connected. Recently, in Korea, most subjects related to advertising courses have focused on the theoretical background, and this imbalance has made it difficult for students to connect theory with reality. Advertising education needs visual images with increased emotional appeal. In addition, for efficient advertising education, proper tools require a balance between an effective education system using the Internet and multimedia. Although much content is being developed for the e-learning population, there are only a few examples of e-learning content applied to instruction models [7, 8, 9, 10]. To design effective e-learning, it is necessary to be grounded in a sound design approach, and the need for instructional design as a necessary component for effective e-learning design is now being realized [11, 12]. The successful design of e-learning relies on careful consideration of the underlying pedagogy of how learning takes place online [13, 14, 15].

This study, therefore, developed advertising e-learning content using Gagné's instruction model: a model that is considered to be the most effective instruction model for the development of off-line and traditional classroom education. It created each learning step of the model using web-based programs and then analyzed their efficiency. It attempts to present new instruction methods for advertising education.

2. Literature Review

2.1 Gagné's Nine Events of Instruction

Utilizing Gagné's Nine Events of Instruction in e-learning will aid learners' acquisition of the requisite knowledge presented [16, 17, 18, 19, 20]. These events of instruction are: gaining the learner's attention, informing the learner of the objectives, stimulating recall of prior learning, presenting the learning stimulus, providing learning guidance, eliciting appropriate performance, providing feedback, assessing learner performance, and enhancing retention and transfer [18, 19]. These steps are necessary for the design of effective e-learning, but providing e-learning that is cognizant of the latest technology that is not also grounded in sound instructional design will not produce the desired learning and/or performance outcomes.

Thus, according to Robert Gagné, there are nine events in effective learning [16, 17, 18, 19], and they include a sequence of events similar to the following:

1) Gain the Learner's Attention

Present a problem or a new situation. Obtain the learners' attention so that they will watch and listen while you are presenting the learning point.

2) Inform the Learners of the Objective

This allows the learners to organize their thoughts. It helps them to understand what they are seeing, hearing, and/or doing.

3) Stimulate Recall of Prior Knowledge

This allows the learners to build on their previous knowledge or skills. Although we are capable of having our creative moments, it is much easier to build on what we already know;

remind the learners of prior knowledge relevant to the current lesson and provide the learners with a framework that aids learning and remembering.

4) Present the Material

Compartmentalize the information to avoid memory overload. Blend the information to aid in information recall. This allows learners to receive feedback on individualized tasks, thereby correcting isolated problems rather than having them have little idea of where the root of the learning challenge lies.

5) Provide Guidance for Learning

This is not the presentation of content but is instruction on how to learn. This is normally simpler and easier than the subject matter or content. It uses a different channel or media to avoid mixing it with the subject matter. The rate of learning increases because learners are less likely to waste of time or become frustrated by basing performance on incorrect facts or poorly understood concepts.

6) Elicit Performance

Allow the learner to practice the newly acquired behavior, skills, or knowledge. In addition, demonstrate it through modeling and observational learning.

7) Provide Feedback

Show the correctness of the learner's response and analyze the learner's behavior. The feedback needs to be specific, not general, as in "You are doing a good job." Tell them 'why' they are doing a good job or provide specific guidance.

8) Assess Performance

Test to determine if the lesson has been learned. This can also provide general progress information.

9) Enhance Retention and Transfer

Inform the learner about similar problem situations, provide additional practice, put the learner in a transfer situation, and review the lesson.

We applied Gagné's 'nine events' to the design of e-learning content for advertising education.

2.2 Related Works

In Korea, digital advertising content for distance education is directed by an advertising information center. Through the centre, learners who want to study advertising are educated according to their special and temporal needs. The centre helps explain advertising concepts using multimedia and allows learners to explore learning content through hypertext. It is, however, insufficient for the effective interaction of learning content with learners; there is more to learning content selection than simply providing activities for the learners. In addition, there are insufficient methodical approaches to the efficient offering of learning content.

UC Berkeley develops and supplies e-learning content for science education developed entirely in the USA. Their learning system was developed using the Scaffold Knowledge

Integration model [21, 22]. It is used successfully but needs some correction/modification of its instruction model and interaction.

E-learning content for medical education through simulation was developed by Marshall University in the USA and is used for lifelong education and the reeducation of doctors [23]. Although simulation strategy is efficient for medical education, there are disputes about whether simulation is suitable as an instruction model.

Suanpang and Petocz [4] carried out a survey research for an e-learning application in a course in Business Statistics at Suan Dusit Rajabhat University (SDU), Thailand. The research was conducted over 16 weeks and compared online learning with traditional teaching. Aspects of the students' learning outcomes were analyzed, including quantitative features such as their grades and course evaluations, and this analysis is supported by qualitative features such as the results of open-ended questionnaires, interviews, and diaries. Results of the analysis show that the students' outcomes were more favorable in the online groups than in the traditional groups.

Sadik [24] conducted some survey research. In his study, a survey was developed, validated, and carried out to examine the readiness of academic staff at South Valley University in Egypt to develop and implement e-learning in their teaching. The survey was also used to determine how support systems and procedures for staff could be further developed to enable the University to make the most effective and appropriate use of learning technologies to enhance the student and staff experience. The results revealed that the majority of respondents, who came from a wide range of faculties across the University, considered themselves to have limited competence and little experience in e-learning, but they perceived e-learning to be useful in general and to have the potential to support their teaching-related activities in particular.

Chitanana, et. al., [25] discussed the opportunities that exist and challenges that hinder the successful adoption of e-learning technology as a medium of instruction at selected universities in Zimbabwe. They found that e-learning at most of the universities is still in its infant stage. Their study exposes a number of reasons for the limited successes, which are related to infrastructural development, support, and pedagogical considerations for e-learning. Their study recommended that professional development programs with emphasis on e-learning pedagogies, as well as the establishment of e-learning support structures, should be promoted.

Tseng, et. al., [26] developed a hierarchical framework that was sufficiently general and could be applied to the measures of e-learning system effectiveness. Their study presents a general multi-criteria hierarchical framework that might be applied in various settings of e-learning system effectiveness study. This evaluation may help e-learning providers to focus their limited resources, but their system did not address instruction theory for content.

Thus, in reality, there are few examples that have adopted an instruction model for distance education systems in advertising and other areas of education despite there being many web-based learning systems. Our study will incorporate Gagné's instruction model to provide truly effective learning.

3. Content Development

This study attempts to develop e-learning content while applying Gagné's instruction model. Flash MAX was used in the development. This advertising content follows Gagné's learning order, and the learning content presented in this study relates to an advertising company. The learning procedures are as follows:

3.1 Gain Attention

The first screen shows a video which is intended to make the learner feel like he or she is entering an Advertisement Company; it attempts to build interest in the learner (Figure 1). The video plays for 30 seconds with soft background sound. We applied Perceptual Arousal. The title flies with text animation and with a display of advertising theory.

Figure 1. Starting Screen

3.2 Inform Learner of Object

This step presents the learning object. The learning object is shown using information which is received after learning, and supplies indirect experience through content learning as is shown in Figure 2.
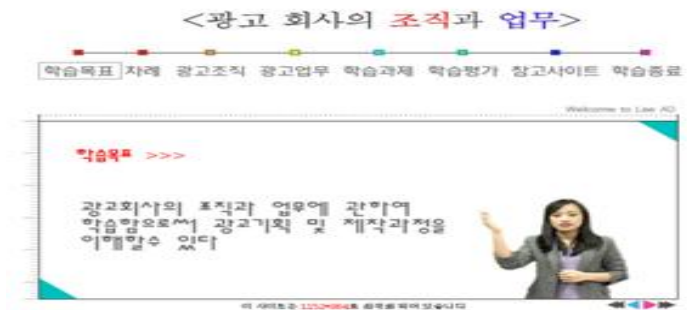

Figure 2. Learning Object

It motivates the learner to study by informing him/her of the learning goal and by providing the relevance. The learning goal is presented as simple text with narration. A sub-menu is continually provided at the top of the screen. The learner can choose the content that he/she wants to study from the sub-menu in the advertising theory content. We have developed a simple screen interface in order to decrease the learner's learning disorientation. The sub-menu also displays what the learner is currently studying. This helps to decrease the learner's disorientation.

3.3 Stimulate Recall of Prior Knowledge

This sub-menu connects what *has* been learned with what *will* be learned using learning order; it allows learners to select and review what they have learned. It provides a site map to help learners select what they *will* learn. Figure 3 show the image screen that is recalled from

the previously studied content. We used multimedia content such as animation or images that are more effective for recall.
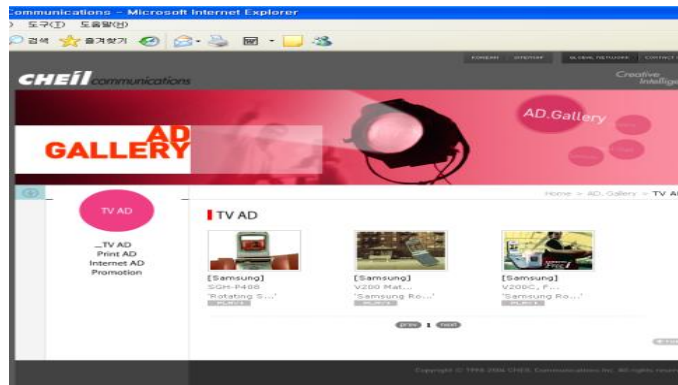

Figure 3. Example of Advertisement

3.4 Present the Materials

Learning content concerning the learning goal refers to the information or content that supports learning. Learning content is provided in the appropriate order. If the learner clicks a red keyword, it offers more information. If learners click 'Positioning', the power point slide shows an explanation (Figure 4).

Figure 4. Connected Power Point Content

3.5 Provide Guidance for Learning

We have provided learning guides. With respect to advertisement creation, for example, there are ordered explanation procedures for advertisement creation in the new web page as seen in Figure 5; it is designed to return to the existing page to prevent the student from forgetting procedures after the learning. It helps the learner to remember important aspects of the learning content and helps the learner to select the proper content.
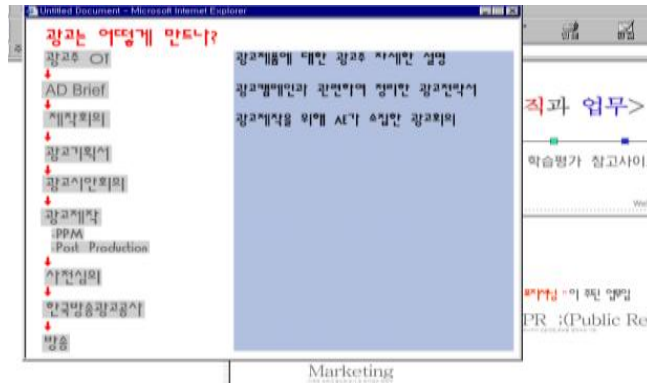
Figure 5. Advertisement Making

3.6 Elicit Performance

Performance learning means that the content provides the learners with a learning task. The learners express and practice what they learned themselves. The content provides learning activities through problem-based learning, and gives an assignment that introduces the learning activities.

3.7 Provide Feedback

Learners perform learning and receive feedback about the learning activity. As an example, the learners compared and analyzed advertisements of several websites that advertised travel (Figure 6) and completed the feedback by themselves. Our content also supplied feedback after the assessment. We will demonstrate the assessment of performance in the next paragraph.
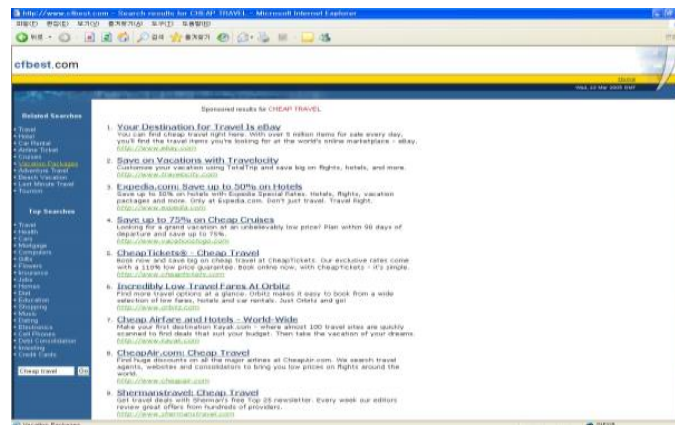

Figure 6. Travel Advertising Site

3.8 Access Performance

Learners examine learning content by themselves through the learning problem. This section offers learners beginning and intermediate problems according to the learners' level and the kind of problem that the learners want solve. If the learner solved the problem, the contents emphasizes the answer with narration. The content supplies reinforcement for correct answers.
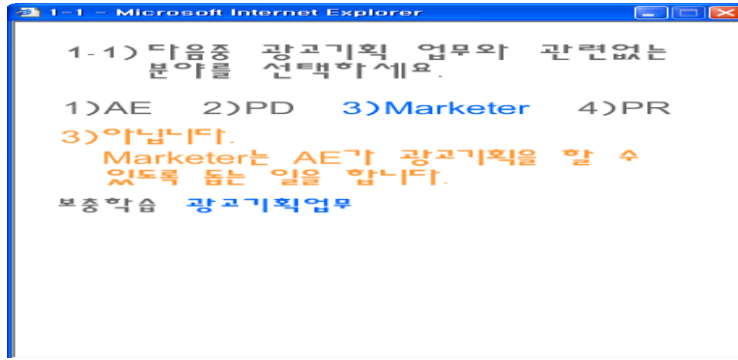
Figure 7. Feedback about the Incorrect Answer

If the learner is incorrect, the program gives the message "It's wrong," and provides feedback and the reason; the learner must study the content once again. If the learner needs a supplementary lesson after formative evaluation because there is dissatisfaction with the quantity of the learning content, he/she clicks the supplementary lesson and goes back to the learning content (Figure 7). After an incorrect answer, we provide scaffolding to the learner.

3.9 Enhance Retention and Transfer

When the learner has almost completed the program, our content provides a summary using a chart, graph, and image; this assists the learner's retention. The software uses a reference site to help the learner to remember the content. The software provides more content associated with the learning content in a reference site so that the learner may apply and solve learning content in new situations. If learners click the content at the reference site (Figure 11), there are pop-ups that help remind the learners of what they have learned; it also helps the learners to expand the learning content to other areas.

Figure 11. Advertisement Company Introducing Site

4. Application of e-learning Content

4.1 Method

The purpose of this study was to develop e-learning content while applying Gagné's Nine Events of Instruction. To analyze the effectiveness of the model, this study presented the e-learning content to 120 students who attended an advertising class in a college. The

researchers developed a questionnaire and re-made evaluation form based on the advice of two advertising professors and two educational technology professors.

The questionnaire results were analyzed through the frequency analysis method; the research was analyzed in accordance with each questionnaire measurement item in order to verify the concept of the questions. It produced Cronbach α values (basic concepts of reliability verification) to check inter-item consistency. It produced statistical values.

4.2 Analysis of the Application Results

With respect to the responses to the questionnaire by students who used the advertising content, the results are as follows.

1) Was learning through this e-learning content more efficient compared with the existing lecture classes? Table 1 shows the results.

Table 1. Content's Efficiency

Response	Number of responses	Response rate (%)
It is efficient in every part.	16	13.7
It is efficient in some parts.	81	69.2
It is not efficient.	20	17.1

The result in Table 1 indicates that our advertising contents was more efficient: not on the whole, but in some parts. We believe that visual explanations comparing lecture learning is partially needed.

2) What are the positive aspects of this e-learning content? Table 2 shows the results.

Table 2. Content's Positive Aspects

Response	Number of responses	Response rate (%)
I encountered various learning materials.	26	22.2
The study was interesting.	9	7.7
It was learner-centered study.	18	15.3
I could study freely without considering place and time.	39	33.3
I could study on a personal level.	8	6.9
There are no positive aspects.	17	14.6

As is shown in Table 2, this e-learning content provided the learner's with a study atmosphere which allowed the students to study freely in their own space and time; it is an efficient method for the presentation of various learning materials.

3) Are you satisfied with the e-learning content's learning steps?

Table 3. Satisfaction with the Content's Learning Steps

Response	Number of responses	Response rate (%)
Very satisfied	12	10.2
Satisfied	46	39.3
Normal	27	23.1
Unsatisfied	21	17.9
Very unsatisfied	11	9.5

The procedural learning based on Gagné's nine events introduced in these advertising contents has positive effects as shown in Table 3.

4) What should be improved in this content?

Table 4. Improvement Factors for this Content

Response	Number of responses	Response rate (%)
Interaction is insufficient.	25	21.4
Learners cannot concentrate on the learning content.	37	31.6
It is not more efficient than lecture learning.	16	13.6
It is boring.	26	22.2
None.	13	11.2

Table 4 indicates that the components should be changed to a more learner-centered format so that the learners can concentrate; the interaction and interest should be improved.

5. Conclusion

This study developed e-learning content for advertising theory applying Gagné's nine events. The results are as follows.

First, using e-learning content has positive and negative learning effects on learners. Concerning the characteristics of advertising, it is efficient in replacing and compensating for practice.

Second, Gagné's instruction model applied to advertising content is very effective for learning advertising courses.

Third, this content offers a competitive learning atmosphere beyond space and time constraints; especially, it is effective in presenting various visual materials.

The research conclusions can be utilized in organizing content for all kinds of instruction models.

The following are the limitations of this study.

First, the content instruction had positive effects only in certain aspects of the advertising learning; therefore, it should be used as learning content only in suitable advertising learning contexts.

Second, the order of the learning content of the e-learning content depends on the learners' selection. It is difficult to apply the instruction model in a set order.

Third, this study experimentally developed learning strategies and tools for advertising. A more effective instruction model and more effective learning tools should be developed which offer diversity in advertising education in order to provide more people who are interested in advertising with opportunities to study advertising education.

Finally, we need to develop e-learning content with advanced technology in computer engineering, including intelligent facilities and knowledge representation technology.

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