

Case Study on a Smart Class-Based Class: Focusing on a Cyber University Class

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Abstract

The main goals of a smart class are supporting a variety of teaching-learning methods in an online class environment, generating and sharing content with ease without constraints, temporal and spatial alike, fostering online interactions, and managing teaching-learning materials efficiently in a cloud environment. This study seeks to explore more effective class strategies through a case study on a smart class-based class. According to the study findings, a smart class improves learners' digital literacy, facilitates data-sharing with and feedback from fellow learners, enhances learners' willingness to participate in class, and elicits positive reactions from them toward novel experiences. These findings imply that smart devices, not just offering convenience in information access, encourage learners to actively take part in the production and utilization of diverse information in the teaching-learning process.

Keywords: smart devices, smart class, class strategy, digital literacy

Introduction

The widespread availability of smart devices has increasingly expanded the extent to which educational mediums are utilized in education environments. In recent years, classrooms have witnessed a variety of educational mediums, such as smart device applications, brought in to classes. Smart media is treated as an environment conducive to ensuring convenience in information access, taking into account an information recipient's individual characteristics, and permitting each recipient to actively participate in information production instead of just receiving information (Smith, 2011).

This suggests that there is a need for broadening both opportunities for the user's participation and the scope of media use. The digital media environment has made it possible for the learner to freely navigate among mediums and has facilitated participation and sharing by enabling networking, multi-tasking, and content production and sharing. In such an environment, therefore, the learner should not only have a good grasp of the digital environment and operate digital devices, but also should develop digital literacy as a new learning capability grounded on sharing and interaction in the digital social culture. Digital literacy in the age of digital media places a strong emphasis on the learner's ability to take the lead in selecting and processing digitalized information, then converting it to knowledge he or she needs, as well as the learner's ability to utilize various functions embedded in the hardware component of media, such as smart phones, tablets, and PCs (Gweon Seong-ho & Kim Seong-mi, 2011).

In particular, digital literacy is a learning capability that is required more than ever for cyber university students learning online. A cyber university is strikingly different from a conventional off-line university in teaching-learning environment and learner background and characteristics. Differences in learners' characteristics and capabilities affect the process and outcome of their learning task implementation. The specificity of cyber universities, however, engenders limitations, including a decrease in the learning effect due to a lack of face-to-face communication with teachers, constraint on immediate feedback, the constant demand for learners' self control and management ability, the need for a certain level of computer literacy, dropping-out, and learners' lack of will to follow through learning. For an effective cyber university class, therefore, it is necessary to formulate learner-centered teaching plans and ensure interaction, communication, and actuality of the class. Regarding a class plan, in particular, much emphasis is put on factors that influence the way learners form their social presence and immerse themselves in learning. In practice, the formation of social presence in a cyber learning environment has been reported to have an impact on learning immersion and effect (Han Seung-yeon & Im Gyu-yeon, 2012). In this regard, it is necessary to establish class strategies that promote and support learners' participation and interaction, as well as the formation of their social presence.

This study intends to explore more effective class strategies by performing an analysis of a case study on a smart class-based class as a way of inducing learners' vigorous class participation, furthering their social presence, and improving digital literacy.

Concept and Components of a Smart Class

A smart class is a solution that allows participants to make a presentation with the use of smart devices and to share and discuss in real time what is on the pages related to a subject area on the web. As illustrated in Figure 1, it is possible to register PPT with the app, present it using a smart device, and create content at the same time. In addition, teachers and learners can share and discuss the created content on subject area-related pages on the web. Particularly, SyncThink, a presentation app, has three characteristics which set it apart from existing apps. First, it can be utilized in conjunction with presentation tools such as PowerPoint. Second, it is not dependent on a particular device, providing both temporal and spatial convenience. Third, it provides potent collaboration functions. Presentation materials and content stored in a cloud environment can always be shared among learners in real time. Moreover, since all such processes in a smart class is recorded, it is possible to foster activities for post-class reflection.

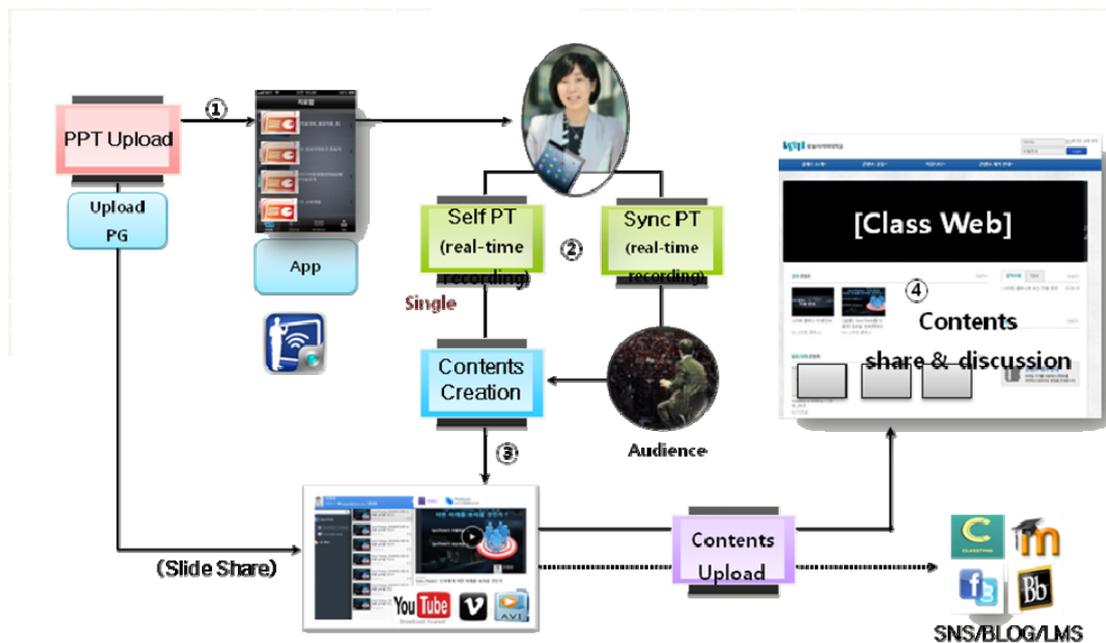


Figure 1: Smart Class Composition

The components and major functions of a smart class are given in Table 1.

Table 1: Components and Major Functions of a Smart Class

Components	Major Functions
PPT Upload Program	. Registering prepared PPT file with the app and teaching-learning materials box
Presentation App (SyncThink)	.Creating presentation content by smart device (audio + slides) .Presentation through linking smart device with PC screen (mirroring) .Generating content automatically after presentation .Uploading content to relevant subject area page (smart class)
Teaching-Learning Materials Box (My Page)	.Keeping content generated by the app .Keeping various image files stored on PC .Keeping teaching-learning materials on Youtube, Vimeo, and Slideshare .Providing a distinct URL for each material .Providing authoring tool for presentation using PC .Managing teaching-learning materials and content categories .Designating title of materials, and establishing scope of outline revision, deletion, and sharing .Sending materials via Facebook, Twitter, and e-mail
Subject Area Page	.Exclusive webpage for class .Registering and sharing various materials in teaching-learning materials box .Online discussions

Study Method

Smart class-based courses and participating learners are given in Table 2.

Table 2: Study Subject Courses and Learners

Course Title	Attendees (Participating Learners)	Area of Utilization
Theory of Distant Education	89 (71)	Report writing, presentation, and feedback: pros and cons of e-learning
Teaching Plan	88 (75)	Report writing, presentation, and feedback: content assessment

Using Power Point, learners write their assignments according to the topics given in each course. With the use of a self-presentation app, they create presentation materials as content and embed it in the smart class. Teachers and fellow learners review content and write comments. In this way, it is possible to learn the number of reviews received by each content and to instantaneously share them through Facebook, Twitter, and e-mail.

The screenshot displays the main interface of a Smart Class. At the top, there is a header with the BDU logo and navigation tabs: '클래스 소개', '교수설계 콘텐츠', '원격교육론 콘텐츠', '커뮤니티', and '콘텐츠 제작 안내'. Below this, the '원격교육론 강의 콘텐츠' section is active, showing a presentation slide titled '스마트클래스 사용법 콘텐츠' by smaster. To the right, a '공지사항' (Notice) section lists several items with dates, such as '[설문] 스마트클래스 이용현황' (13.06.20) and '리포트 제작 노하우 공유!' (13.06.05). Below the notices is a '자료실' (Resource) section with a '리포트 제작 노하우 공유' item dated 13.06.05. The '원격교육론 발표/과제 콘텐츠' section shows four presentation slides: '원격교육의 장단점' by 백경희, '20100039김순미-원격교육론' by 김순미, '원격교육론20110339' by 김호자, and '원격교육의 장단점' by 장해연. On the far right, a '콘텐츠 제작 안내' (Content Creation Guide) box contains a notebook icon and text: '콘텐츠 제작 안내 모바일 기기를 이용해서 콘텐츠를 제작하고 공유하는 방법을 안내합니다.'

Figure 2: The Main Screen of a Smart Class

Findings

Learners participating in the smart class scored very high in the degree of class satisfaction, reaching 4.6 out of 5 points. Especially, the learners were shown to place a high value on being able to create their own content using smartphones and share it with fellow learners.

Table 3: Major Findings of Smart Class Utilization

Classification	Details
Average Frequency of Content Creation	3.4 times
Average Frequency of Written Comments	2.1 times
Average Frequency of Content Reviews	14.7 times
Average Frequency of SNS Use	0.4 time
Keyword for Learner Reflection	.Increasing self-confidence in smart device use .Alleviating presentation anxiety .Forging affinity and sharing with fellow learners .Strengthening willingness to participate in class through content production experiences .Taking on the challenges of a new experience

Some learner impressions are presented below.

“One trial after another, I finally did it. I am so proud of myself. This opportunity has allowed me to build confidence in using smart devices.”

“It was a marvelous and interesting experience. I especially liked that I was able to create content on my own by using the app and to see other learners’ content as well.”

“This novel experience helped me understand the various functions of smart devices that enable smart class participation, and also gave me an opportunity to reflect on myself while carrying out my presentation assignment.”
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Conclusion

A cyber university class entails what goes beyond the perimeter of e-learning content. In order to improve learners' class satisfaction and improve the ease with which class is conducted, it is urgent that, along with content creation, a variety of teaching methods geared toward the characteristics and needs of learners be developed and applied. In this light, a smart class-based class is expected to have the following effects.

First, it can galvanize interaction between teachers and learners and among learners in the online learning process. Second, it helps augment social presence in the online teaching-learning process. Third, the sharing of materials makes it possible to vitalize collective intelligence. Fourth, by expanding communication methods and scope, the learning space can be broadened. Fifth, it is possible to compile teaching-learning materials and implement their consolidated management. Sixth, a smart class-based class can be used as a portfolio in which learners' learning history can be maintained. Lastly, in the teaching-learning environment where the use of smart devices has become prevalent, learners' digital literacy is expected to improve.

On the basis of the study findings, the following class strategies utilizing smart classes are proposed:

- First, produce and provide in a timely manner content for advanced or remedial learning.
- Second, form emotional communication by sharing self-introduction content at the outset of the semester.
- Third, produce learning outcomes in team-based learning and conduct discussions with fellow learners.
- Fourth, through presentation assignment production, sharing and feedback, renew the will to participate in learning and nurture a sense of self-efficacy.

References

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