The Effects of Student-Engaged Video Lecture for Flipped Learning on Motivation

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Abstract

Flipped learning is not only a metacognitive effect on learning and knowledge, but also a way of cultivating active and subjective attitudes of students through participative lessons. This pedagogical model, a specific type of blended learning, frees up classroom time for interaction and higher-order activities. While the traditional flipped model had been limited to putting video lectures online to encourage practice activities in the classroom, it has evolved to allow for diverse models and approaches that suit the needs of individual disciplines, modules, and classes. Nevertheless, flipped learning in Korean universities is still limited, and understanding and application of the concept of flipped learning is still insignificant. In addition, since flipped learning is generally applied in the field of social science area where presentation, discussion and collaboration are frequent due to the nature of teaching method, it is not receiving much attention in language education. In recent years, however, there has been no doubt in schools that multimedia is used in language education to increase students' motivation on class and improve their ability to maintain memory. Therefore, flipped learning-based language education is not impossible. In this study, 52 students who participated in 'Basic Hindi I' were applied to a flipped learning classroom, and the questionnaire survey was conducted using the class types and the grades of participating students before and after the application as parameters. In addition, the lecture videos required for flipped learning were produced in two forms such as a lecture video produced by a professor alone and that of produced by a professor and students in collaboration. This study aims to derive the educational implications of flipped learning and language education by examining whether there is a certain contribution or educational effect on motivation through the empirical case. The Instructional Materials Motivation Survey (IMMS) designed by Keller (2010) was employed to investigate how students are motivated by different forms of video lecture. In other words, this paper describes student-engaged video lecture for flipped learning. It has more educational impact on motivation rather than a general video lecture.

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Keywords: Flipped Learning, Student-Engaged Video Lecture, Motivation, Hindi Education

Introduction

The academic circles have been using various kinds of video contents in different subjects to induce interest and active participation in the class. Among them, flipping learning in which video lecture is also employed is good for students to learn the content of the instructor's lecture through the on-line system in advance, and to get the effects of metacognition that re-recognizes knowledge in offline class time (Bajurny, 2014; Van Vliet et al., 2015). Thus, it is also known as self-directed learning method. Flip learning, however, has recently begun to attract attention, and its history is short, and there are not many existing studies and cases, and this is not a systematic method of teaching. Nevertheless, flipped learning is not only a metacognitive effect on learning and knowledge, but also a way of cultivating active and subjective attitudes of students through participative lessons (Alzain, 2015; Strohmyer, 2016), which has been known to bring about growth and change for both

students and teachers.

In accordance with the overseas researches related to flipped learning, 'Education 3.0 Program' introduced by KAIST in 2012 changed the class environment to student-as the first applied example of flip learning in Korean universities. However, flip learning in higher education is still in its infancy. Furthermore, whereas this pedagogical method has generally been applied in the field of social sciences where presentations, discussions, and collaboration are frequent due to the nature of teaching methods, it has not yet received due attention in language education. In recent years, however, multimedia has been widely used in language education to strengthen student motivation and improve memory retention. Therefore, flipped learning-based language education is certainly a positive force.

In this study, 52 students who participated in 'Basic Hindi I' were applied to a flipped learning classroom, and the questionnaire survey was conducted using the class types and the grades of participating students before and after the application as parameters. In addition, the lecture videos required for flipped learning were produced in two forms such as a lecture video produced by a professor alone and that of produced by a professor and students in collaboration. This study aims to derive the educational implications of flipped learning and language education by examining whether there is a certain contribution or educational effect on motivation through the empirical case. The Instructional Materials Motivation Survey (IMMS) designed by Keller (2010) was employed to investigate how students are motivated by different forms of video lecture. In other words, this paper describes student-engaged video lecture for flipped learning has more educational impact on motivation rather than a general video lecture.

Previous studies on flipped learning and the uniqueness of this study

The most important inventions in the history of modern education may well include the blackboard (followed by PowerPoint), projector, classroom, and standardization. Combined, they powered lecture to deliver a large quantity of content to a huge number of students. Yet such teacher- and content-centred pedagogical model turned teachers into ‘town criers’ and failed to recognize the complexities and varied learning styles of individuals (Ritchhart, Church, and Morrison 2011, 7). It also distorted our educational landscape by sacrificing other crucial components of education—notably, curiosity and interaction (Bergmann and Sams 2014, 22-23). This introspection led education researchers to stress the value of student-centred learning environments in which students actively engage in self-directed, interactive, and higher-order activities (e.g. Jonassen and Land 2000; Shea et al. 2012).

Blended learning has been received much attention in higher education since students can get knowledge and information outside of the class through various types of technological resources and receive a combination of traditional face to face instruction inside of the class (O'Flaherty and Phillips, 2015, p.85). One of the primary components of effective teaching method is precisely student engagement (Barkley. 2010; Bryson and Hand, 2007).

One of the approaches to create such environments is flipped learning. It is a specific type of blended learning, which combines onsite (i.e. face-to-face) with online experiences to produce effective, efficient, and flexible learning (Stein and Graham 2014, 12). Flipped learning literally flips conventional teaching and learning activities around: it leverages technologies to deliver direct instruction (other asynchronous activities as well) outside the classroom in order to reserve onsite time for interaction and activities in the upper cognitive regions of Bloom’s (revised) Taxonomy (see Anderson et al. 2001): applying, analysing, evaluating, and creating.

Although studies dedicated to flipped interpreting classrooms are scarce, a number of valuable researches on relevant areas have been carried out over the years.

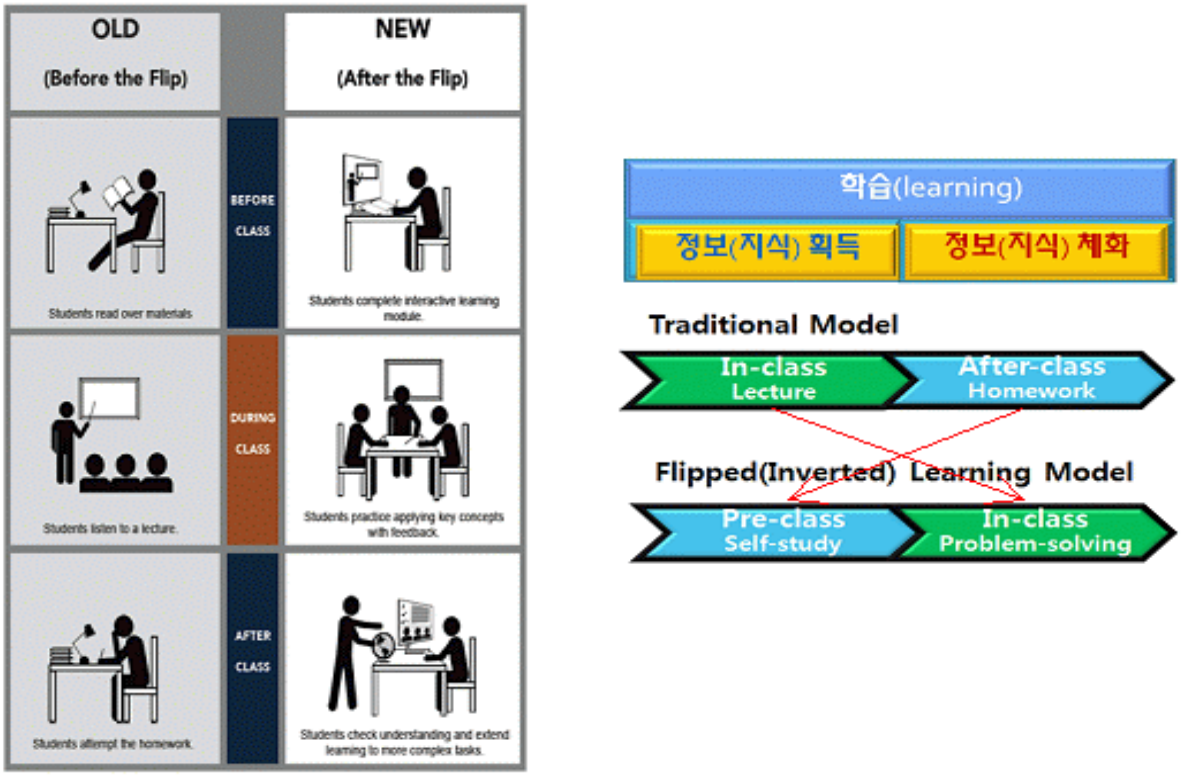

Figure 1. Traditional classroom and Flipped classroom

The above studies certainly attest to the effectiveness of flipped learning on educational outcomes such as student engagement, collaboration, peer interaction, self-paced learning, independent learning, individualized attention, motivation, and etc. However none of studies have focused how and what kind of video lectures should be developed and how students can be engaged in pre class activities.

As O'Flaherty and Phillips (2015, p. 94) pointed out, students are less likely to engage in pre-class activities that lack interactivity. In other words, not many students watch video lectures before the class and do not study the material. A lack of engagement with the pre-class activities results in variability of student preparedness (O'Flaherty and Phillips, 2015).

However this study will present the relationship of video lecture of student engagement in the flipped class. The development of student-engaged video lecture may impact on student engagement in pre class. Without watching video lecture and doing any assignment as pre class activities, no educational effectiveness can be expected in the flipped learning. Therefore this pivot project aims to derive the educational implications of flipped learning and language education by examining whether there is a certain contribution or educational effect on motivation through different types of video lectures as an empirical study.

Research context: student-engaged video lecture project

Over the period of the spring and fall 2015 and 2016 semesters, a number of flipped projects were piloted at Busan University of Foreign Studies. The school's Centre for Teaching and Learning trained instructors on the theoretical concept and general design of flipped class room during the teacher training workshop, which was intended to stimulate

student-centred teaching, especially in different language classrooms such as Hindi, Russian, English, Japanese etc. Nevertheless, no specific designs for individual modules were presented, as flipped classrooms have not been entirely implemented into Hindi before. Hence, flipped learning was new to the instructor, as well as the students. In the spring 2017 semester, a full-time flipped learning-based course, basic Hindi I was examined and participated in the small project.

The two main pillars for the design and implementation of the flipped classroom were (i) student-centred interactive learning and (ii) IT-enabled active learning, which are widely-recognised as the key ingredients of the flipped classroom.

Analytic framework: Instructional Materials Motivation Survey (IMMS)

The analytic framework for this study is the IMMS (Instructional Materials Motivation Survey), whose basic concept was first introduced by Keller (1983, 2010), and has been used myriad times to apply motivational strategies to instructional materials, and to test their effect (Loorbach et al., 2015: 205). The IMMS framework outlines the key components and processes that contribute to ideal learning experiences related with motivation. It posits that four presences—attention (A), relevance (R), confidence (C), and satisfaction (S)—are the main pillars of a measurement of student's reactions to motivational instructions. According to Keller (2010, 44-45), people's curiosities and interests should be stimulated and sustained (A), before people can be motivated to learn, they will have to believe that the instruction is related to important personal goals or motives and fell connected to the setting (R), even if people believe the content is relevant and they are curious to learn it, they still might not be appropriately motivated due to too little or too much confidence, or expectancy for success (C), and to have a continuing desire to learn, people must have feelings of satisfaction with the process or results of the learning experience (S).

Research questions

In a bid to motivate students and to create a student-centred learning environment, this pilot project applied flipped learning to Hindi learning to motivate students' activities in pre class, online site. This study tried to achieve a description and comparison of how traditional video lecture and student-engaged video lecture are perceived by the students. The following questions guided the study.

(1) What video lectures are being used to engage students in the flipped learning?
(2) How students perceive their traditional video lecture produced by a lecturer alone?
(3) What should be developed in the design and implementation of engaging students for pre class activities?
(4) If a video lecture is collaboratively produced by a lecturer and students together, then does this video give more effects on students' motivations?

Classroom description

It should be noted that Basic Hindi I is 15 week-long modules with a weekly three-hour session. This class consists of two settings starting from before and after mid-term exam. Until mid-term exam, flipped learning was conducted through traditional video lecture (TVL) produced by a professor along. After the midterm exam, flipped learning was performed through student-engaged video lecture (SEVL). The following sections describe and compare the design and implementation of the professor alone and the students in collaboration.

Table 1
Traditional video lecture (TVL) and student-engaged video lecture (SEVL)

	Traditional Video Lecture based Flipped Classroom	**Student-engaged Video Lecture based Flipped Classroom**
Approach	Experimenting Hindi learning	Experimenting Hindi learning
Goal Setting	By instructor	By instructor and student
Video Production	By instructor	By instructor and student
Learning Activities	Individual, reflective journal, team	Individual, reflective journal, team
Learning Feedback	team discussion	team discussion
Assessment	Instructor-led formative assessment; team feedback and assessment	Instructor-led formative assessment; team feedback and assessment

The study and results

Table 2
Participant demographics I

		Grade		total
		good	not good	
gender	male	9	17	
	female	13	13	
total		22	30	52

Table 2
Participant demographics I

	Total no.	Skewness		Kurtosis	
	52	S	S.E. mean	K	S.E. mean
Grade	52	-3.21	.330	-1.975	.650
gender		.000	.330	-2.082	.650

Instrument

This study used the M-IMMS questionnaire (see Appendix 1) that modified the IMMS instrument developed by a collaborative research team (Keller, 2010). The original IMMS largely consists of four sections: (i) attention (12 items); (ii) relevance (9 items); (iii)

confidence (9 items); and satisfaction (6 items). While maintaining the structure and the essentials of the IMMS, the M-IMMS made minor modifications to the IMMS instrument by omitting writing-related items and adding material components to come up with A 11and A 12. Ordinal responses were provided on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Procedure

The surveys were administered through the university's LMS. With the data, this study used SPSS 21 to conduct a comparative study of two different types of video lecture based flipped classroom, followed by an examination of individual items.

Rotated Component Matrix[a]

Table 3
Rotated Component Matrix[a]

Items		Component			
		1	2	3	4
A (attention)	**A5**	.822	.205	.259	-.031
	A8	.801	.204	.037	.241
	A4	.783	.145	.204	.105
	A11	.773	.227	.210	.127
	A12	.691	.224	.051	.496
	A2	.633	.468	-.062	.245
S (satisfaction)	**S5**	.176	.814	.184	.189
	S6	.429	.750	.127	.290
	S3	.429	.742	.186	.163
	S2	.272	.716	.379	.089
	S4	.101	.624	.494	.126
C (confidence)	**C6**	.060	.315	.813	-.045
	C2	.235	.120	.812	.241
	C4	.370	.210	.543	.395
R (relevance)	**R7**	.170	.032	.047	.877
	R6	.173	.462	.091	.662
	R1	.133	.290	.346	.611

Note: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization

Reliability of survey

Internal consistency was verified, as presented in Table 3.

Table 4
Reliability of survey

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.949	.949	34

Note: Cronbach's a

Comparison of traditional video lecture and student engaged video lecture based flipped classrooms

Table 3
Analysis: overall results

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	T1A - T2A	-.42949	.76650	.10629	-.64288	-.21609	-4.041	51	.000
Pair 2	T1R - T2R	-.26923	.72020	.09987	-.46974	-.06873	-2.696	51	.009
Pair 3	T1C - T2C	-.28846	.68290	.09470	-.47858	-.09834	-3.046	51	.004
Pair 4	T1S - T2S	-.20000	.48507	.06727	-.33504	-.06496	-2.973	51	.004
Pair Total	T1 - T2	-.29679	.54714	.07587	-.44912	-.14447	-3.912	51	.000

Conclusion

This study compared traditional video lecture produced a instructor alone and student engaged video lecture made by both instructor and student in collaboration with the IMMS instrument to explore effective strategies for designing and implementing flipped classrooms. Key findings, limitations, and recommendations for future research are summarised below.

This study is unique in terms of (i) modifying flipped classroom in light of the nature of Hindi learning; (ii) streamlining flipped learning activities in a semester-long module in a formal educational setting; (iii) contrasting traditional video lecture and student engaged video lecture using a quasi-experimental design; and (iv) examining how much a student engaged video lecture motivates student activities in a classroom or pose challenges to students.

However, a number of limitations must be acknowledged for future research. First, this study analysed a relatively small sample of students. More classrooms and a larger sample would produce more reliable results. Second, this study did not assess students' language communicative skills or performance. A more comprehensive and long-term comparison between experimental and control groups would reveal the effect of Hindi classroom on student performance. Third, qualitative research should be carried out to further investigate the interaction effect between the instructional method and language group.

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Appendix

The Instructional Materials Motivation Survey (IMMS) by Keller (2010)

5 = very true, 4 = mostly true, 3= moderately true, 2 = slightly true, 1= not true

	Items of the Instructional Materials Motivation Survey	5	4	3	2	1
C1	When I first looked at this lesson, I had the impression that it would be easy for me					
A1	There was something interesting at the beginning of this lesson that got my attention					
C2	This material was more difficult to understand than I would like for it to be					
C3	After reading the introductory information, I felt confident that I knew what I was supposed to learn from this lesson					
S1	Completing the exercises in this lesson gave me a satisfying feeling of accomplishment					
R1	It is clear to me how the content of this material is related to things I already know					
C4	This material had so much information that it was hard to pick out and remember the important points					
A2	These materials are eye-catching					
R2	There were stories, pictures, or examples that showed me how this material could be important to some people					
R3	Completing this lesson successfully was important to me					
A3	The quality of the material helped to hold my attention					
A4	This lesson is so abstract that it was hard to keep my attention on it					
C5	As I worked on this lesson, I was confident that I could learn the content					
S2	I enjoyed this lesson so much that I would like to know more about this topic.					
A5	The pages of this lesson look dry and unappealing					
R4	The content of this material is relevant to my interests					
A6	The way the information is arranged on the *material* helped keep my attention					
R5	There are explanations or examples of how people use the knowledge in this lesson.					
C6	The exercises in this lesson were too difficult					
A7	This lesson has things that stimulated my curiosity					
S3	I really enjoyed studying this lesson					
A8	The amount of repetition in this lesson caused me to get bored sometimes					
R6	The content and style of writing in this lesson convey the impression that its content is worth knowing					
A9	I learned some things that were surprising or unexpected					

C7	After working on this lesson for a while, I was confident that I would be able to pass a test on it					
R7	This lesson was not relevant to my needs because I already knew most of it					
S4	The wording of feedback after the exercises, or of other comments in this lesson, helped me feel rewarded for my effort					
A10	The variety of reading passages, exercises, illustrations, etc., helped keep my attention on the lesson					
A11	The style of *material* is boring					
R8	I could relate the content of this lesson to things I have seen, done, or thought about in my own life					
A12	There are so many words on *the material* that it is irritating					
S5	It felt good to successfully complete this lesson					
R9	The content of this lesson will be useful to me					
C8	I could not really understand quite a bit of the material in this lesson					
C9	The good organization of the content helped me be confident that I would learn this material					
S6	It was a pleasure to work on such a well-designed lesson					