

The Direction of ‘Flipped Classroom’ based on Prospective Study Analysis

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Abstract

The advent of Information Age has brought the educational tendency to focus on the quality and morality, excluding the quantity of education and rote learning. This highlights the importance of developing competence of critical insight, problem solving, collaboration, communication, creative thinking, and cultural understanding in public education. However, the reality of education in Korea is that public school fails to be apart from content-based learning, teacher-centered learning and ranking-oriented learning. To solve this problem, Education Ministry suggests cultivating creative human resource with integrated competency in revised curriculum of 2015 and implementing free semester program. Moreover, flipped learning is being realized and researched as to shift the teaching paradigm, aiming to introduce it in each school. Accordingly, this project suggests to establish a step in the right direction of flipped learning so that it can be boosted on stage. This project also suggests the purpose and its goal of flipped learning based on precedent studies and their implications on political, administrative and financial, cultural, school curriculum and assessment-based view.

Keywords: *Flipped classroom, Creativity and integration, Paradigm, Curriculum, Assessment, Direction*

1. Introduction

The advent of Information Age has brought the educational tendency to focus on the quality and morality, excluding the quantity of education and rote learning. However, according to 권재원 (2015), Korea’s current educational system is described as a castle in the air, in that it lacks creative human resource despite the accomplishment in PISA. Furthermore, the downside of our educational system in such environment is related with student’s ‘motivation’, where not only the students but the teachers are less motivated, the rate of collaboration learning is found to be the lowest in spite of high level of achievement, the rate of the students who feel lonely in schools is twice that of the average in OECD but

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the rate of the students who feel happy in schools is the lowest out of 64 countries. Higher degree of specialization and enthusiasm of the teachers are contrasted with low self-esteem, the rate of effective learning is below OECD average despite the effort and time put in learning. Also, learning time is wasted even though marginal utility is under 0, students are reluctant to study in a critical and reflexive way due to their low preference on elaborative learning strategy, their social, economic, and cultural status remains distinct based on the regional basis, and the parents tend to have high expectations on their children's educational achievement.

In order to resolve this current issue, the Ministry of Education announced the 2015 revised curriculum proposal. The purpose of the 2015 revised curriculum is to cultivate 'creative', 'educated', 'cooperative' human resources, and has set 'self-disciplined', 'information-processing', 'creative-thinking', 'aesthetic', 'communicative' competencies as the core competencies to realize such goals throughout the process as a whole.

Moreover, the Ministry of Education implemented 'enhanced classroom-project focusing on humanistic education' from June 2013 as the national political agenda (66-1), in pursuance of an opportunity for the students to discover knowledge derived from their experiences so as to deviate from educational functions relying on transmission of knowledge.

From 2016, 'Improving teachers' expertise through classroom development plans' has been promoted as a state policy according to the 2015 revised curriculum. Each Metropolitan and Provincial offices of Education reflects its characteristics to promote projects for supporting improvement in classwork so as to enhance participation-centered approaches.

Recently an alternative approach to make sweeping changes in classroom setting has been studied, flipped learning. Flipped learning is implemented in classrooms in response to an educational paradigm shift for 21st century, and realization that class time would be best spent guiding knowledge through experiences and scaffolding, enhancing peer feedback and developing firm relationship through individualized teaching, rather than delivering direct instruction and giving teacher-centered instructions. Flipped learning is thus an alternative approach differing from traditional classrooms and is being developed through various studies. It also triggers educational inspiration, mostly from the teachers in action (정형권, 2015)

Accordingly, this project aims to discover the meaning of flipped learning and establish a step in the right direction of flipped learning through analyzing and resolving related downsides of the approach.

2. Theoretical backgrounds

2.1. Flipped learning

Flipped learning denotes to literally 'flipping' the place where students study and learn. Direct instruction could be delivered by recording video content for students to engage with before freeing up class time for activities that allow deeper exploration of content. Students are encouraged to perform 'remembering' and 'understanding' domain by learning through video content, and perform 'applying', 'analyzing', 'assessing' and 'creating' domain that are higher domains in class. They have enough time to understand the basic concept at home and then apply and elaborate it with teachers and peers through cooperative work in class (한석희, 2016)

2.2. Flipped classroom model

According to Strayer (2007) flipped classroom can be explained by dividing into ‘educational technology’, ‘learning through activity’ and ‘classroom environment’, and shows the interactional relationship as seen in [figure 1].

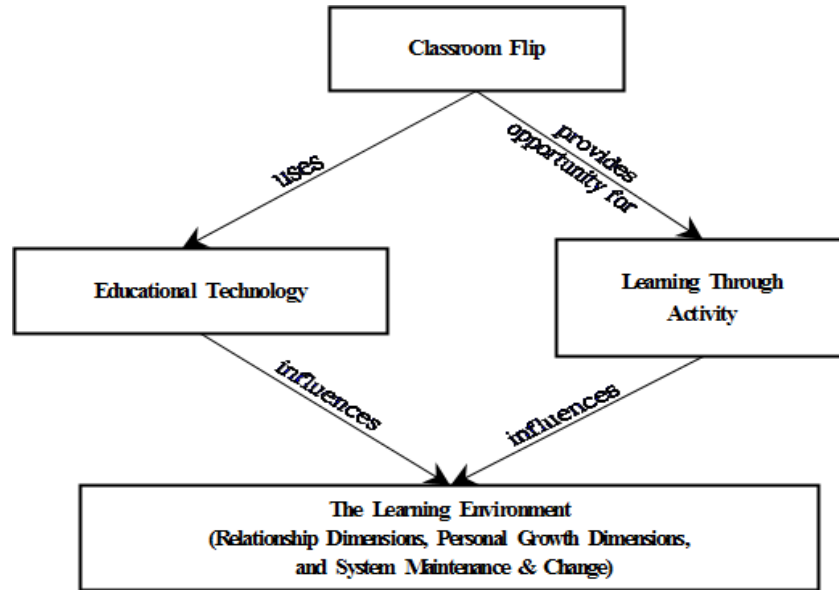


Figure 1. Theoretical framework of flipped classroom

Flipped learning aims to help students individually study the fundamental factors via educational technologies, provide greater opportunities for active learning in class, and establish the system where teachers and students can form meaningful relationships that lead to expanded learning.

Reinhardt (2014) suggested an educational theory which flipped learning is based on as seen in [Figure 2].

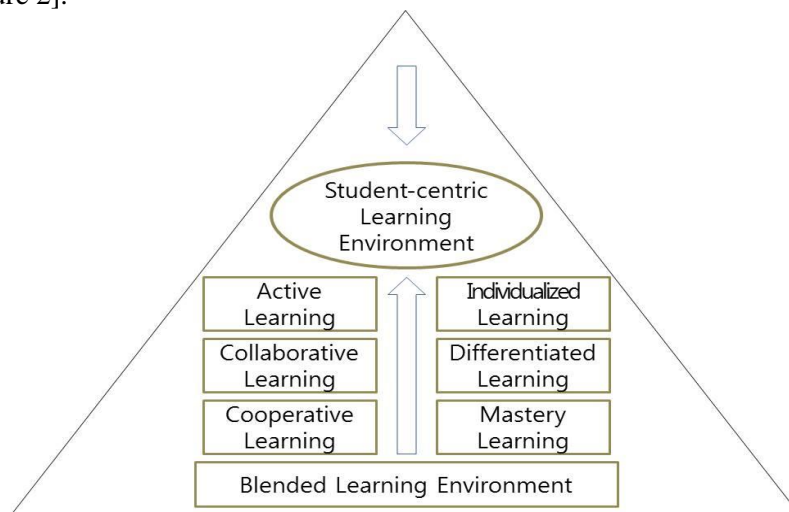


Figure 2. Related theories of flipped classroom

Flipped learning focuses on establishing Student-centric Learning Environment where students realize their needs, interest, and autonomy. For this, 'Active Learning' involving self-writing, speaking and reading, 'Individualized Learning' involving customized learning based on individual interest and competence, 'Collaborative Learning' involving student's ability to exploit their resources, 'Differentiated Learning' involving customized learning based on student's learning attitude, motivation and capability, 'Cooperative Learning' involving student's acquisition of knowledge through positive interdependence, and 'Mastery Learning' involving student's acquisition of the content before moving on to the next step of learning can be applied. Also, 'Blended Learning' involving student's learning environment where online and offline learning is implemented at the same time or more than two learning techniques are blended can attract students' interest (권민정, 2015)

2.3. The lesson structure of Flipped classroom

According to 이지연, 김영환, 김영배 (2014), flipped classroom is consisted of 'Before class → Class introduction → During class → After class → During school day'. Based on this lesson structure, <chart 1> provides a comparison of instructor-led classes and flipped learning applied classes as follows.

Table 1. Comparison of flipped learning classes and instructor-led classes

Distinction	Instructor-led classes	Flipped learning classes
Before class	-Students do their assigned readings -The instructor makes a lesson plan	-Students learn through provided module and note questions related to the content -The instructor prepares various learning material and content
Class introduction	-The instructor makes a general supposition on what would be an instrument for successful learning -Students have limited information on expectation-driven learning	-Students throws a question that will lead their learning. -The instructor anticipates where the students would look for help the most
During class	-The instructor engages in utilizing every teaching material in hand -Students focus on following the lesson	-The instructor guides the lesson through feedback and short lecture -Students practice the skills they need to acquire
After class	-Students generally do their homework with delayed feedback -The instructor conducts assessment based on student's prior work	-Students continuously utilize their knowledge and skill based on the instructor's exact explanation and feedback -The instructor provides additional information and resources if needed and awards points for high-quality work
During school day	-Students want to check what they have learned -The instructor repeats and reminds the students of the learned material	-Students have the ability to find where to look for help with what they need -The instructor guides students with deeper exploration of content

3. Prospective study analysis on studies of flipped learning

Based on the analysis on research method, conclusion and implication of flipped learning, establishing the future direction of flipped classroom is suggested.

To begin, studies relating to the attitude and awareness of flipped learning are investigated. 권민정 (2015) conducted researches on students' behaviors towards flipped learning on

middle school grammar. According to the result, apps or programs that contribute to figuring out individual participation are suggested to be utilized, considering passive learners and large class teaching. Moreover, strategic and selective conducting of flipped classroom is needed to cover productive English skills including reading, grammar, writing and speaking, instead of conducting flipped learning each time. Also, free-learning semester is suggested and connections between each class should be reinforced through block-time class in order to realize various needs, rather than proceeding 50 minutes classwork. For the teachers, regular teacher training and forum should be arranged to resolve problems that they face while implementing flipped learning in class. Flipped learning seems to hold many advantages in theory. However, constant evaluation on case studies should be performed, and tryouts for developing concrete theory and directionality setting of flipped learning are suggested.

박태정, 차현진 (2015) conducted a survey on teachers' recognition of flipped learning to discover its educational application possibility. According to the survey result, instead of monolithic application in every subjects, starting from a relatively flexible subject which gains high interest from students and then applying it to other subjects in phases is suggested. In connection with classroom environment political support should be preceded, as current classroom environment and infrastructure (number of smart devices and students per class) fail to respond to differentiated inductive learning. Also, the need to offer educational environment where students are able to use smart devices per person at home or school, and enough education for students who fail to understand digital literacy are pointed out. Lastly, information interchange on best practice relating to the application of flipped learning should be processed, and teachers ought to share teaching material through teaching community in order to find and develop an alternative model.

Studies pertained to design and model of flipped learning is investigated. 김영배(2015) has suggested design principles of supporting system for flipped learning. Training coursework or workshop for flipped learning realization knowledge, technique, and attitude is required. Supporting system for flipped learning based on smart tools should be established in order to assist technology: multimedia contents, quiz, learning log check, activity-based learning: learners' intrinsic motivation, active participation, continuous interaction, knowledge internalization, and authentic learning, and high dimensional thinking. Learning management system should include several functions: learning log check, motivation, and reinforcement system so that it is possible to trace students' learning process and to manage learning log, thereby affording individualized learning.

In addition, teachers who are in common grade, region or community should get opportunities to cooperate so that they can share lesson materials online, exchange their opinions. Training coursework is required in that teachers are supposed to acquire various instructions such as asking, product, experience, discussion, and explanation for during-class flipped learning. School supervisors and IT experts ought to support teachers so that they can be the subjects of change and innovation and lead them, whereby students can have opportunities to search what they need sufficiently and to share the data they discover on their own. According to 라미경(2015)'s studies on the lesson model of Math utilizing flipped learning, its subject is a learner who watches the video recording, ask inquiries, collaborate and discuss with other peers. Hence, students need individualized and tailor-made learning methods, which mean that evaluation should change if flipped learning is introduced. Multidimensional evaluation, which is appropriate for whole-person education, is supposed to apply. It focuses on problem solving, creativity, cooperative attitude rather than simply

grading according to the test scores. Thus, improvement of evaluation system is essentially required in the light of educational policy.

Last, studies on application and effect of flipped learning are investigated. Based on 전혜경(2015)'s study on methods of applying flipped learning into Korean class, the detailed methods of the lesson model need to be complemented through continuous monitors in actual stage of teaching. It indicates that several Korean lessons which are not appropriate for flipped learning need more discussions. According to 한중덕(2015)'s analysis on effect of flipped learning considering learners' talents, student-centered instruction such as flipped learning is plausible for lower-intermediate group. Also, improvement of learning attitude can be related to achievement in time. It is emphasized that teachers' competence in producing, editing, and utilizing video media should be improved and the relevant policies are required. For this, teachers should be given means by which they can share their video recordings and various training coursework. Environment ought to be settled so that anyone can attempt to apply flipped learning through accumulation of its success and failure.

4. Conclusion

Based on analysis on the precedent studies on flipped learning, the right direction is suggested in the light of educational policy, administration and finance, school culture, and curriculum and evaluation.

To begin, from the point of politic view, Education Ministry should prevent from the one-way and top-down approach, but promote bottom-up approach based on on-stage teachers' autonomy and spontaneity. It is supposed to contemplate the failure of 'open classes introduced in 1996 and to be no more than a facilitator, which leads to the true settlement of flipped learning.

Second, when it comes to the administrative and financial parts, flipped learning ought to assure its equity and accessibility. For this, the lesson video files function as 'assistant', which means that each student's ICT environment should be monitored and the students who have low digital literacy, low participation, and low supports from family should be supported. Also, teachers should get opportunities to attend relevant training or studies and the IT facilities and surroundings such as Wi-Fi, external cloud system contact, online communication tools, and releasing the restriction on utilizing contents should be provided.

Third, from the perspective of 'school culture', each teacher's autonomy remains more important rather than supervisors' leadership or initiatives. For this, supervisors who are assigned a huge role in each school had better support and motivate autonomous teachers applying flipped learning with the help of in-depth understanding. Within flipped learning, every class is supposed to have a different form, which means that it has to be respected, not judged by traditional approaches. Thus, Education Ministry is supposed to foster 'expert flipped learning supporting teams' or 'on-stage studying communities in each school' rather than model teachers or consultants.

Fourth, in the light of 'curriculum and evaluation', teaching-learning should be transferred from 'teacher-centered' to 'student-centered', from 'traditional delivery' to 'various activities', and from 'textbook and blackboard' to 'ICT utility such as computer, Internet, mobile communication'. Besides, evaluation should be transferred from 'monolithic and standardized' to 'various and individualized', from 'product-oriented' to 'process-oriented', and from 'traditional paper test' to 'ICT applied test'.

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