

Effects of Managerial Facilitation Strategies on Flipped Learning for Developmental English Education

Hiroki Yoshida

Abstract—Along with the increase of the university entrance rate and the diversification of university entrance examinations, many students who enter university are academically underprepared for higher education, and as a result, most higher education institutes in Japan offer developmental education to students who enroll in their institutions. Flipped learning, which involves a combination of pre-class developmental English education and in-class activities, was implemented as an instructional method for developmental English education in this study. This study purposed to identify the effects of managerial facilitation strategies on flipped learning for developmental English education. Findings of the study suggest that managerial facilitation provided by the instructor enhances students' willingness to keep on studying in developmental English learning, students' English writing proficiency, and their attitude toward flipped EFL writing. Results also suggest that managerial facilitation on flipped learning cultivates students' learning habits and changes students into active learners.

Index Terms—Managerial strategies, flipped learning, developmental education, learning management, e-learning.

I. INTRODUCTION

A. Developmental Education in Japanese Universities

Due to the gradual decrease in the number of newborns in Japan, universities' enrollment capacity is about to outnumber its applicants. Thus, Japan is facing an era of "universal-access to higher education", in which every student can enter university if they are not so choosy. Along with the increase of the university entrance rate and the diversification of university entrance examinations, the decline in the fundamental academic skills of university students overall has become a serious issue. Many students who enter university are academically underprepared for higher education, and as a result, most higher education institutes in Japan offer developmental or remedial education to students who enroll in their institutions. The Office for University Reform, Higher Education Bureau, Japan Ministry of Education, Culture, Sports, Science and Technology [1] reported that 56.7 percent of the universities in Japan deliver developmental education for prospective students and 51.0 percent of the universities deliver developmental education for current students.

However, several issues associated with developmental education have been pointed out by educational researchers and policymakers. Amongst the issues, Hamana [2] indicated

that the most serious issue is that Japanese university students with weak academic skills tend to be reluctant to take developmental courses. As the reason for that, Niwasaki [3] suggested that 1) students are apt to think that they accidentally got a low score on the placement test, 2) students don't want to hurt their pride by taking developmental courses, and 3) students don't want to take noncredit extra classes. Furthermore, Hall and Ponton [4] suggested that "many students placed in developmental courses feel a stigma that is damaging to self-perception". In order to cope with such issues, instead of founding extra developmental courses, flipped learning, which involves a combination of pre-class developmental English education and credited classes, was implemented as an instructional method in this study.

B. E-learning for Developmental English Education

Many universities in Japan have implemented e-learning for developmental English education. The case studies can be broadly classified into two categories: studies utilizing self-made e-learning courseware, and studies utilizing commercial e-learning courseware.

Kuniyoshi *et al.* [5] developed an English e-learning courseware material named "University Voices" which focused on linking oral communication to literal communication. Kudo *et al.* [6] made an English e-learning courseware "K Challenge" for developmental education targeting lower secondary school students. Nagahashi [7] developed an e-learning developmental English material for university students, and reported that students' understanding in English grammar and Syntax significantly increased. Thus, studies which utilize self-made e-learning courseware tend to focus on the formative evaluation of the courseware.

Nishinoh [8] implemented a commercial e-learning courseware "NetAcademy 2: Super Standard Course" and "PowerWords Course Plus", and identified that students who spend much time on e-learning significantly improved their English performance. Ota [9] utilized a commercial e-learning courseware "Newton TOEIC Test Preparation: A Course", and suggested that the courseware had a significant effect on students' TOEIC listening and reading scores. Kominato [10] used a commercial e-learning courseware "Surara" for developmental English education and found that reviewing and re-examining the learning process enhances students' metacognitive strategies. Thus, studies that implement commercial e-learning courseware tend to focus on the effectiveness of the courseware.

Previous studies suggest that e-learning has positive effects on students' English proficiency and behaviors in developmental English education. However, there are few studies which focus on teaching strategies which enhance students' English proficiency or performance in developmental English education. Therefore, this study

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purposed to identify the effects of teachers' facilitation strategies on students learning process in developmental English education.

C. Facilitation Strategies for E-learning

Facilitation for e-learning seems to be quite different from face-to-face instruction, and therefore, various e-learning facilitation strategies or techniques have been proposed by researchers. Berge [11] categorized e-learning teachers' facilitation strategies into four functions: managerial, social, pedagogical, and technical functions. Managerial function refers to the instructional design of the logistics of the course. Social function means facilitation to encourage and promote learners to work together. Pedagogical function means facilitation to enhance learners' participation and motivation. Technical function refers to facilitation of the "transparent technology environment so that the learners can focus on the academic tasks and learning activities". Coppola and Hiiltz [12] attempted to change the pedagogical roles of online teachers in asynchronous learning environments, and proposed three facilitation strategies: cognitive, affective, and managerial. Yoshida [13] conducted a survey based on an open-ended questionnaire and identified three roles of online facilitators in blended learning environments: technical support which refers to help of guidance about using an online system, encouragement which refers to comments or feedbacks that motivate learners to continue to study online, and learning management which refers to monitoring and providing advices or comments about the learning process.

All of the four facilitation strategies proposed by Berge are meaningful for e-learning. However, in a flipped learning environment, which is a combination of online and onsite education, learners usually collaborate face-to-face, and also have opportunities to be provided technical support in class, while students need support on their learning process and pacing of their learning. Therefore, this study focused on the effects of managerial facilitation strategies on flipped learning for developmental English education.

According to Collins and Berge [14], managerial facilitation includes norms in agenda setting, pacing, objective setting, rule making, and decision making. Pincas [15] suggested using clearly structured timetables that specifies the content which students must work on each week. Conrad [16] suggested that managerial facilitation strategies such as setting goals and making rules are tempered by well-designed course templates. Yoshida *et al.* [17] determined three managerial facilitation strategies for e-learning by an open-ended questionnaire: setting and announcing clear goals for the activities and assignments, comments or reports on students' progress, and setting and announcing the schedule for the course.

II. PURPOSE

The purpose of the study is to identify the effects of managerial facilitation strategies on flipped learning for developmental English education.

The study is to examine the following two research questions (RQ).

- RQ 1: What effects do managerial facilitation strategies have on flipped learning for developmental English education?
- RQ 2: Do the participants who are provided managerial facilitation strategies find flipped learning effective?

The following research hypothesis was utilized to examine research question 1.

- Ho: Managerial facilitation strategies have significant positive effect on flipped learning for developmental English education.

Research question 2 was answered by descriptive analysis and did not require the development of research hypothesis.

III. METHODS

The study was conducted from April 11th, 2017 to July 25th, 2017 with the purpose to identify the effects of managerial facilitation strategies on flipped learning for developmental English education.

A. Participants

Participants were 77 Japanese first-year university students (ranging in age from 18 to 20) who majored in English culture. All of the students participated in an English writing class, and experienced flipped learning which was composed of a combination of pre-class developmental video lectures of English basic grammar and in-class English writing activities.

Students were divided into three groups. The first group of 28 students served as the experimental group that was provided managerial facilitation by the instructor every week. The second group of 28 students served as control group 1 that was not provided achievement goals. The third group of 21 students served as control group 2 which showed significantly high English proficiency level in the placement test.

B. Instruments

1) Pre-class e-learning courseware

A commercial e-learning courseware "ALC NetAcademy Basic English Grammar Training Course" was implemented for this study as a pre-class learning material. "ALC NetAcademy Basic English Grammar Training Course" is a courseware that is developed for developmental English education for university students. The courseware consisted of 69 units with 36 mini tests. The participants in this study were instructed to complete 35 units and 17 mini tests by the end of the semester. The completion rate of pre-class e-learning was supposed to range from 0.00 to 41.95.

2) Managerial facilitation strategies

Participants who were in the experimental group received managerial facilitation from the instructor. Firstly, the instructor provided students clear goals for each pre-class individual study. As the students were to finish 35 units and 17 mini tests in 15 weeks, they were told to complete 2-3 units and 1-2 mini tests each week. As the goals were set every week, they also served as a timetable or schedule for pre-class individual learning. Secondly, a class rule was set by the instructor which required students to score 80% more in the mini tests to proceed to the next unit. Thirdly, the instructor

provided periodic reports on the progress of the participants every month.

3) Worksheets and coaching rubrics

Worksheets based on the writing task that were provided every week were used to assess participants' proficiency in EFL writing. Task-specific coaching rubrics with five criteria and four standards: S (Exceeds expectations), A (Meets expectations), B (Needs Improvement), C (Inadequate) were used to assess participants' performance. Rubrics were provided to the participants in advance of the writing tasks with the purpose of enhancing participants' skills and understanding of EFL writing.

4) Questionnaire

A five item questionnaire on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used to evaluate participants' attitude toward the flipped EFL writing course. The five questions were:

1. The contents of the course were interesting
2. The contents of the course were understandable
3. I acquired knowledge and skills through the course
4. The difficulty of the activities was appropriate
5. I am satisfied with the course on the whole

C. Procedure

All of the participants attended a flipped English writing class. Students studied how to write paragraphs in English. The flipped learning class was scheduled on Tuesdays for 90 minutes each class. Before the class, students were required to study via an e-learning courseware. Each lesson was structured as follows:

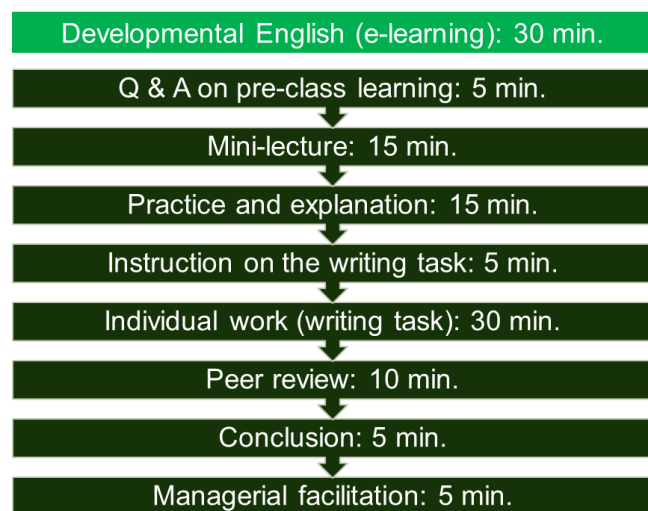


Fig. 1. Flow of the flipped learning lessons.

IV. RESULTS

All of the 77 participants completed the English writing class. This means that the completion rate was 100.00 percent. Hereinafter, results of the 77 participants' performance will be introduced and analyzed.

A. Participants' Profile

Table I shows the breakdown of participants by gender and their English proficiency level based on CEFR.

TABLE I: PARTICIPANTS' PROFILE

Profile of participants		F	%
Gender	Male	42	54.55%
	Female	35	45.45%
	Total	77	100.00%
English proficiency level (CEFR-based)	A1	46	59.74%
	A2	28	36.36%
	B1	3	3.90%
	Total	77	100.00%

B. Effects of Learning Management on Flipped Learning for Developmental English Education

Participants' online learning processes were collected through participants' log file records, which document learners' action taken by three parameters: what action was taken, who took the action, and when they took the action. Table II shows participants' completion rate, which ranged from 0.00 to 41.95, and engagement time on pre-class individual e-learning.

TABLE II: COMPLETION RATE AND TIME SPENT ON PRE-CLASS INDIVIDUAL E-LEARNING

	Completion Rate	Engagement Time
Experimental Group	31.60	7:46:02
Control Group 1	10.80	2:52:40
Control Group 2	21.28	4:30:46

Logged data suggest that participants in the experimental group completed 75.33 percent of the units of the pre-class e-learning courseware, and they studied English grammar for an average of 33.17 minutes per class each week. Participants in control group 1 completed 25.74 percent of the units, and they spent 12.20 minutes each week for pre-class learning. Participants in control group 2 completed 50.73 percent, and engaged in pre-class learning for 19.20 minutes each week.

The effects of managerial facilitation on flipped learning for developmental English education were examined by comparing the completion rate of the experimental group and the control groups. Table III shows the comparison between the experimental group and control group 1. For evaluation of the differences, Student's one-tailed *t*-test was used. Results indicate that participants' completion rate was significantly high due to managerial facilitation ($t(54) = 6.34$, $p < .01$).

TABLE III: EFFECT OF MANAGERIAL FACILITATION ON FLIPPED LEARNING FOR DEVELOPMENTAL EDUCATION

	Experimental Group (SD)	Control Group 1 (SD)	df	<i>t</i>	<i>p</i>
Completion Rate	31.60 (12.50)	10.80 (12.06)	54	6.34	< .01

Table IV shows the comparison between the experimental group and control group 2. Results show that participants' completion rate was significantly high due to managerial facilitation ($t(32) = 2.15, p < .05$).

TABLE IV: EFFECT OF MANAGERIAL FACILITATION ON FLIPPED LEARNING FOR DEVELOPMENTAL EDUCATION

	Experimental Group (SD)	Control Group 2 (SD)	df	t	p
Completion Rate	31.60 (12.06)	21.28 (19.15)	32	2.15	< .05

Results of the Student's *t*-test suggest that managerial facilitation is effective not only for students with low English writing proficiency levels, but also for students at high proficiency levels, and promote them to keep willingness to learn in developmental English education situations.

C. Effects of Managerial Facilitation on Participants' English Writing Proficiency

Participants' English writing proficiency was evaluated by task-specific rubrics on five-point criteria ranging from 1 to 5. Table V shows the time-by-time changes in participants' proficiency in English paragraph writing.

TABLE V: PARTICIPANTS' ENGLISH WRITING PROFICIENCY SCORES

	Week 3	Week 6	Week 8	Week 11	Week 13
Proficiency Score	3.97	3.92	4.00	4.14	4.25

The effects of managerial facilitation on participants' EFL writing proficiency were examined by comparing participants' rubric scores of the third week and thirteenth week.

Table VI shows the effect of managerial facilitation on English writing performance by comparing participants' writing proficiency evaluated on the third week and thirteenth week. For evaluation of the differences, Student's one-tailed *t*-test was used. Results indicate that participants' English writing proficiency significantly increased at the end of the semester ($t(27) = 1.89, p < .05$).

TABLE VI: EFFECT OF MANAGERIAL FACILITATION ON PARTICIPANTS' ENGLISH WRITING PROFICIENCY

	week 3, mean, (SD)	week 13, mean, (SD)	df	t	p
English writing proficiency	3.97 (0.25)	4.25 (0.62)	27	1.89	< .05

Results show that participants' English writing proficiency increased along with their increase in experience of flipped learning.

D. Participants' Attitude toward Flipped Learning for Developmental English Education

Participants' attitude toward flipped learning was evaluated by a five item questionnaire on a five-point Likert scale. The questionnaire survey was conducted on July 19th, 2017.

Table VII shows participants' attitude toward active

learning. The mean score was calculated by giving each of the Likert scale points a number value, where strongly disagree=1, disagree=2, neutral=3, agree=4, and strongly agree=5.

TABLE VII: PARTICIPANTS' ATTITUDE TOWARD FLIPPED LEARNING FOR DEVELOPMENTAL ENGLISH EDUCATION

Item	Mean
1. The contents of the course were interesting.	4.00
2. The contents of the course were understandable.	4.00
3. I acquired knowledge and skills through the course.	4.10
4. The difficulty of the activities was appropriate.	4.30
5. I am satisfied with the course on the whole.	4.00

Results indicate that participants who were provided managerial facilitation during flipped learning for developmental English education found the English writing course relatively interesting, understandable, useful and satisfactory. Specifically, more than 80 percent of the participants mentioned that they found the course was interesting (82.6 percent), understandable (82.6 percent), useful (86.4 percent), appropriate in difficulty (86.4 percent), and satisfying (82.6 percent).

V. DISCUSSION

The purpose of the study was to examine the effectiveness of managerial facilitations strategies on flipped learning for developmental English education. A commercial e-learning courseware on basic English grammar was used for pre-class learning. Participants' data were collected through logged data, participants' essays, and questionnaires.

Regarding the first research question "What effects do managerial facilitation strategies have on flipped learning for developmental English education?", results of study suggest that participants' completion rate of the courseware was significantly high with students who were provided managerial facilitation by the instructor ($t(54) = 6.34, p < .01$; $t(32) = 2.15, p < .05$). Furthermore, English writing proficiency of the participants in the experimental group significantly increased at the end of the semester ($t(27) = 1.89, p < .05$). Thus, the hypothesis "Managerial facilitation strategies have significant positive effect on flipped learning for developmental English education." was supported.

With regard to the second research question "Do the participants who are provided managerial facilitation strategies find flipped learning effective?", results of the questionnaire survey suggest that students found the flipped EFL writing course interesting, understandable, effective, at an appropriate difficulty, and satisfactory.

VI. CONCLUSION

In the context of the present study, the findings suggest that

managerial facilitation provided by the instructor enhances students' willingness to keep on studying in developmental English learning, students' English writing proficiency, and their attitude toward flipped EFL writing. Results also suggest that managerial facilitation on flipped learning for developmental education cultivates students' learning habits and changes students into active learners.

Findings of this study provide pedagogical implications of flipped learning for developmental education; however, they also have some limitations. As the participants of this study were Japanese university students who major in English culture, and their English proficiency level was at beginner to intermediate, using other samples from other English proficiency levels, majors, ages, and prior experience of flipped learning is recommended for future generalization of this study's findings.

Given the findings of this study, it is meaningful to investigate the interactions between flipped EFL and learners' characteristics such as language learning motivation, learning strategies, and anxiety. By doing so, it would be possible to identify what kind of flipped approach affects what kind of learners and consequently enhance their learning outcomes.

Furthermore, future attempts should focus on investigating facilitation strategies that enhance learners' behaviors and performance in flipped learning for developmental English education. Flipped learning is delivered in a blended mode which incorporates autonomous individual learning via pre-class video lectures, and active in-class activities. Therefore, it is important to identify teachers' role as facilitators for both online and in-class learning, and to develop facilitation strategies that motivate students to study individually, and that promote active learning among students.

CONFLICT OF INTEREST

The author declares that he has no conflict of interest.

AUTHOR CONTRIBUTIONS

Hiroki Yoshida conceived, designed, and executed this study and wrote the manuscript. No other person is entitled to authorship.

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