A Study on Class Satisfaction on Team-Project Lesson among University Students

Byoungwook Ahn[1], Jongwon Choi[2] and Sanghoon Lee[3]*

[1] Hanseo University; bwahn75@hanseo.ac.kr
[2] Wonkwang Health Science University; wta3277@wu.ac.kr
[3] Hanseo University; lsh8533@hanseo.ac.kr
***Correspondence: lsh8533@hanseo.ac.kr; Tel.: +82-41-660-1547

Abstract: The purpose of this article was the satisfaction of participants in team-based, focused classes. The study selected 409 people who joined the lecture on team-based learning. We did frequency analysis, reliability analysis, and correlation analysis using SPSS 21.0 program and it used a structural equation model to verify the analysis of confirmatory factors and the theory of research using AMOS 18.0. This study has three significant findings. First, the self-directed learning ability of the team-based class participants affected interpersonal understanding. Second, the self-directed learning ability of team-based class participants affected satisfaction with the class. Third, the understanding of interpersonal relationships between team-based class participants affected the level of satisfaction with the class. As we enter the 4th revolutionary era recently, we are having a great influence on society, organization, and education. Therefore, universities are also trying various methods of education to promote their ability to solve problems in a departure from cramming education.

Keywords: *Team-project lesson; Class satisfaction; Self-directed learning ability; Interpersonal understanding; University students*

1. Introduction

The government and universities are making great efforts to improve the quality of university education according to the social demands of strengthening competitiveness in university education. The Ministry of Education is demanding changes in the functions and roles of universities in response to social changes, such as the 4th Industrial Revolution [1]. This means that the instructor-centered education system, which has been leading in the traditional education system, should be effectively improved to provide a creative education system [2].

Learner-centered education the new education paradigm in the 21st [3]. It is a concept that embraces the change of the age that needs to respect the needs of learners, who are the consumers of education, away from the existing supplier-centered class management [4]. In addition to primary and secondary education, the education of universities needs to shift from the existing education methods to the advanced education methods that enable students to create knowledge through creative problem solving led by learners [5].

So, we need to study self-directed learning ability, understanding of interpersonal relationships, and satisfaction with the class, focusing on team-based learning, for learner-centered education that college education should pursue. The team-based teaching method is based on self-directed learning that enables students to learn on their own, understanding interpersonal relationships between team members when performing tasks in a team, and learning about the satisfaction of the learner with team-based teaching.

Team-based learning is a structured teaching strategy [6] to maximize the performance of individuals and teams through individual prior learning and interaction between team members in dealing with a problem. Team-based learning is characterized by an educational method that effectively and actively promotes learning through small-group interactions by continuously carrying out team activities and individual learning activities [7]. In Korea, team-based learning has been

studied with a particular focus on nursing and architecture.

Understanding interpersonal relationships refers to the degree to which team members understand each other by focusing on relationships with team members rather than team tasks in team project activities. Cannon-Bower & Sala [8] examined in detail the findings that shared cognition among team members had a significant effect on the team or organizational performance. According to Cannon-Bower & Salas [8] and Mathieu, Heffner, Goodwin, & Cannon-Bowers [9], there were four major categories that team members should share in team activities. These four things are task-specific knowledge, task-related knowledge, knowledge of team members, and shared attitudes and beliefs.

The last was satisfaction with the class. Satisfaction with the class refers to the degree to which a learner is satisfied with the learning results, achieves a major goal, and is able to effectively respond to the surrounding environment, and continuously learn as a results of meeting the needs and expectations of students as much as possible. In addition, the student's confidence in the class is continuous [10]. In other words, students' satisfaction with the class is essential for the learning community as well as the successful performance of the school. This is understood as the academic self-efficacy of the student himself.

Therefore, this study aims to study the relationship between self-directed learning ability, understanding of interpersonal relationships, and satisfaction with the class, as the necessity of a new learning method for the 4th Industrial Revolution has emerged as a social issue. In the 4th Industrial Revolution, creative talent approach and resolution, and smooth interpersonal abilities in social life are important factors. In order to cultivate future talents, the university needs to have learner-centered teaching behavior different from the existing teaching behavior. This study verifies the possibility of fostering future talent suitable for the 4th Industrial Revolution by verifying the relationships between self-directed learning ability, understanding of interpersonal relationships, and satisfaction with the class by applying new learning methods to the field of physical education to foster future-oriented talent. At the same time, the significance of this study is to provide empirical data for the application of team-based learning methods in college education.

2. Materials and Methods

2.1. Measurement

During the composition of the questionnaire, the measure of self-directed learning ability was developed by Lee [11]. Interpersonal understanding used 11 questions that Kwon [12] translated and used from the team skill tool developed by Marshall [13]. Items developed by satisfaction with the class by Beard and Ragheb [14] and survey questions used in the study of Lim [15] were used. The questions of each study variable were all used on a five-point Likert scale.

2.2. Validity

Validity was measured to assess the suitability of the questionnaire used in this study. Results of a positive analysis of this study's variable of self-directed learning ability were TLI .943, CFI .955, and RMSEA. 068. In the results of positive factors analysis of satisfaction with the class, the comparable figures were .TLI .953, CFI .967 and RMSEA .069.

Table 1. The Result of Validity Verification

Study Tools	X^2/df	CFI	TLI	RMSEA
Self-directed learning ability	2.900	.955	.943	.068
Class satisfaction	2.926	.967	.953	.069

2.2. Reliability

The Cronbach's α coefficient was analyzed to verify the reliability of this study variable. The results of the self-directed learning ability were the learning motive .933, meta-gee .871, the achievement period .921; the autonomous learning dictionary .869. Satisfaction with the class level is educational .905; Social .940; physical .779; psychological .917; environmental .866; restful .930. Interpersonal understanding turned out to be 956. The interpersonal understanding factor was one factor, so it had no sub-factor.

Table 2. The Result of Reliability Verification

Factors	Sub-factors	Cronbach's α
Self-directed learning ability	Learning motive	.933
	Meta-gee	.871
	Achievement period	.921
	Autonomous learning dictionary	.869
Interpersonal understand	-	.956
Class satisfaction	Educational	.905
	Social	.940
	Physical	.779
	Psychological	.917
	Environmental	.866
	Restful	.930

2.3. Processing

The data processing of this study was done using SPSS 21.0 for PASW, frequency analysis of the demographic characteristics of the study subjects, reliability analysis of research variables, and correlation analysis between research variables. A positive factor analysis of the study variables was done using AMOS 18.0. A structural equation model was implemented to analyze the subjects of this study: self-directed learning ability, interpersonal understanding, and their relationship with satisfaction with the class.

3. Results

3.1. The Study Subjects

The subjects of this study were selected by a team-based on a student at University in South Korea in 2019. The extraction method of the subjects used the expedient sampling method among the non-probabilistic sampling methods. The subject joined in general class and its class process the team-based learning. The survey was self-assessment based on the survey method, and a total of 409 questionnaires.

Table 3. The Result of Characteristic of the Study Subjects.

Concepts		N	%
Gender	Male	269	68.8
	Female	140	34.2
Grade	First	113	27.6
	Second	108	26.4
	Third	117	28.6
	Forth	71	17.4

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	Recreation	102	24.9
Subject	Swimming	110	26.9
	Life-physical	92	22.5
	Badminton	105	25.7

3.2. The Result of Study Hypothesis and Model Fit

The first hypothesis was that self-directed learning affected interpersonal understanding (β = .460, t = 10.829, p < .001). The second hypothesis was that self-directed learning ability had an effect on satisfaction with the class (β = .473, t = 10.773, p < .001). The third hypothesis was that interpersonal understanding affected satisfaction with the class (β = .176, t = 4.563, p < .001).

Table 4. The Result of Verification of Model Fit

	X^2/df	CFI	TLI	RMSEA
Model fit	2.914	.961	.949	.068

Table 5. The Result of Verification of Study Hypothesis.

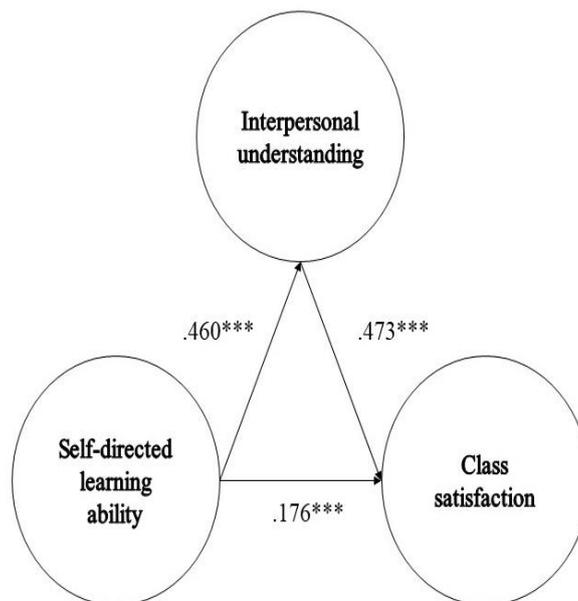| Hypothesis	Estimate	S.E.	C.R	
Self-directed learning ability ->Interpersonal understanding	.460	042	10.829***	Accept
Self-directed learning ability -> Class satisfaction	.437	041	10.773***	Accept
Interpersonal understanding -> Class satisfaction	.176	039	4.563***	Accept

*p<.05, **p<.01, ***p<.001

Figure 1. The Result of Path Analysis Verification.

4. Discussion

First, the self-directed learning ability of the participants in team-based sports influenced interpersonal understanding. Unlike teaching classes centered on professors, team-based classes provide a learning environment in which learners can themselves actively participate during team-based learning. According to Lim [16] (2013), who reported that self-reliance in learning is a factor that has a statistically significant effect on school-life adaptation, including friendship and teacher relationships.

Second, the self-directed learning ability of the team-based class participants affected satisfaction with the class. This means that self-directed learning skills increase satisfaction with classes through active and autonomous participation. Nieder [17] (2005) applied the team-based learning method to analyze its effectiveness, showing high satisfaction with the teaching and students' class preparation through the collective class preparation, collective problem-solving process, and improved support for the team-based learning method.

Third, the understanding of interpersonal relationships between team-based class participants affected the level of satisfaction with the class. Team-based learning has a positive effect on interpersonal relationships, as shown by Moon (2012)'s [18] research. This shows that the understanding of interpersonal relationships is improved through active promotion of active interaction. And Whitley, Bell, Eng, Fuentes, Helms, Maki, D. [19] (2016) reported a result consistent with prior studies that have an effect on interpersonal relationships and satisfaction with the class.

As we enter the 4th revolutionary era recently, we are having a great influence on society, organization, and education. Therefore, universities are also trying various methods of education to promote their ability to solve problems in a departure from cramming education. In line with this trend of the times, it is necessary to foster self-directed learning skills that encourage students to learn on their own by introducing team-based classes instead of traditional methods of learning.

5. Conclusions

The purpose of this study is the satisfaction of participants in team-based, focused classes. We did frequency analysis, reliability analysis, and correlation analysis using SPSS 21.0 for Windows, and used a structural equation model to verify the analysis of confirmatory factors and the theory of research using AMOS 18.0. Our findings were as follows. First, the self-directed learning ability of the team-based class participants affected interpersonal understanding. Second, the self-directed learning ability of team-based class participants affected satisfaction with the class. Third, the understanding of interpersonal relationships between team-based class participants affected the level of satisfaction with the class.

Acknowledgments

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