Relationship of the Type of Cyber Class Management to Factors Affecting Learner Satisfaction

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教育において主体を学習者とした時，学習者の満足度は教育の効果を左右する重要な要因と言える．そこで本研究は韓国の代表的な初中等教育対象 e ラーニングであるサイバー家庭学習における学習者の満足度について調べた．サイバー家庭学習は担任型と非担任型の 2 種類の形態で運営されている．担任型と非担任型の違いは，担任型では学習者が仮想的に学級を形成し，担任が学習者たちとの相互作用を通して学習を管理しているという点であり，その他の部分ではともに等しいコンテンツ，支援を提供している．本研究では 2 形態間の満足度差の検証及び，満足度に影響を及ぼす要因を分析した．調査の結果，担任型の学習者がすべての満足度要因で高い値を表した。また，学習者の満足度に最も大きな影響を及ぼす要因は，担任型・非担任型ともに「学習内容の楽しさ」であると分析した

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If students are viewed as the subjects of education, their satisfaction level is one of integral factors to determine the effect of education. This study focused on the satisfaction level of students with cyber home learning, which is a leading elementary and secondary e-learning in Korea. In a cyber home learning system, there are two different kinds of cyber classes. One is led by homeroom teachers, and the other isn't. The two cyber classes provide the same contents and support. A difference between the two is that a homeroom teacher interact with students and take care of their studies in the former. The purpose of this study was to examine any possible gaps in satisfaction level with the two sorts of cyber classes and to analyze factors affecting the satisfaction level. As a result of making an analysis, students in cyber classes led by homeroom teachers expressed higher satisfaction with every factor, and whether the learning content was fun was identified as the factor to have the largest impact on their satisfaction level irrespective of the type of cyber class.

1. Introduction

In Korean public education, e-learning is utilized in line with the changing educational paradigm that seeks after that. As an e-learning backing plan was launched in July 2004 in Korea, e-learning has been tried out in different stages, and its effectiveness has been assessed. Korea intends to take advantage of Cyber Home Learning, to boost the quality of public education, and it could consequently be said that e-learning is promoted as one of major educational informatization projects.

E-learning has been incorporated into public education since it is expected to foster the self-directed learning capabilities of students to enhance the effect of public education[1]. The success of e-learning hinges on how to create all the conditions for learners to study on their own and how to provide motivation to them. Accordingly, the satisfaction level of learners should be raised to ensure the success of e-learning by offering the kinds of contents that could stir up their inner motivation, learning flow and interest[2][3][4][5][6][7]. If they find it satisfactory to learn, they are able to keep on directing more energy into that, which will guarantee their successful learning[8]. Hence the success of e-learning requires the satisfaction of learners that could serve to bolster inner motivation, interest and flow[9]. In Korea, some teachers are responsible for e-learning in order to fortify the inner motivation of learners, as they are expected to encourage them to concentrate on their studies[10]

In this study, the satisfaction level of students with cyber study, a leading elementary and secondary e-learning service in Korea, was checked in consideration of the form of cyber class management. Their satisfaction level with the two different sorts of cyber classes was compared to determine which type would be more effective in the field of elementary and secondary e-learning. Besides, it's also

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meant to suggest what improvements should be made to boost their satisfaction level.

2. Background

2.1 The Operating Organization of the Cyber Home Learning System in Korea

The cyber home learning system[1], the most prominent e-Learning system in primary and secondary education in Korea, emerged from 'a preliminary plan to establish the cyber home learning system to establish an e-Learning support system' in July, 2004. In September, three offices of education test-operated the system, and in December, seven offices of education started providing the service. This number rose to 16 in March, 2005.[10][11][12] It was the world's first national e-Learning support system in primary and secondary education.

The Learning Management System that use of joint development in 16 Metropolitan and provincial offices refers to the application program that manages learners and learner's records and delivers the contents of the CHLS. The System manages educational performance, progress, and school administrative affairs, such as student attendance records. The Ministry of Education, Science and Technology(MEST) is in charge of basic planning and coordination, and KERIS(Korea Education Research & Information Service) is responsible for basic research, standard guideline development, and support for content services and system operation. Metropolitan and provincial offices of education operate the CHLS, and the steering committee organized by the MEST, local offices of education, and KERIS discusses policies and major issues related to the CHLS.[14] Specific roles are allocated to each organization, and they fulfill their given roles based on close cooperation between central and regional organizations.

2.2 The Role of the Cyber Home Learning in Korea

The CHLS is an Internet-based learning service that enables learners to undertake self-directed learning activities at any time, whether at home or at school, via the Internet, through a one-to-one system of learning management, and that provides learning services that are customized for individual learners.

The CHLS in Korea is an attempt to enliven the flagging state of public education and relieve families from the overwhelming burden of private tutoring expenses[11][12]. The specific purposes are as follows: First, to establish a cyber home learning environment in which public education and home learning are integrated. Second, to facilitate a society of lifelong learning in which anyone can learn from any location and at any time can be realized. Third, self-motivated learning capabilities are enhanced by providing appropriate materials for every educational level. Lastly, it can provide students from low-income families, farming and fishing communities, and remote areas with educational opportunities, thereby nullifying the educational divide. All in all, the ultimate aim of the cyber home learning system is to restore public confidence in public education and reduce private tutoring expenses.

2.3 The Current Status of the Cyber Home Learning System

The cyber home learning system provides educational content to students from the fourth grade in elementary schools to students in the first year of high schools from 16 metropolitan and provincial offices of education. Basic content for five subjects - Korean, English, mathematics, science, and social studies - have been provided. By 2008, sophisticated content for high achievers (the top 30% of class) and supplementary content for low achievers (the bottom 30% of class) are expected to be developed and provided.[13]

The cyber home learning system consists of two parallel and complementary models: a class type and a self-study type.

First, under the class type, cyber teachersa are responsible for teaching students ranging in number from 25 to 80. Classes are composed of either students belonging to the same class at school (class unit) or students of different classes at the same school (school unit). Should the scope be expanded, students from different schools can also be included (regional unit). In short, the specific class composition is at the discretion of the cyber teacher.

The Cyber Home Learning Contents are divided into basic, supplementary, advanced, and extracurricular contents according to the subject and the degree of difficulty. Key contents are designed to help students improve a school performance and VOD-based contents packaged. Core Contents are VOD-based contents aiming at preparations for mid-term and final examinations in school. Summaries of each chapter and exercise are included.[14] Cyber teachers are Homeroom teacher in online. Cyber teachers provide one-to-one educational management services. Students select the courses, seek approval from offices of education, and take the courses.

Second, the self-study type does not necessarily require a cyber teacher, nor is there a limit to the number of learners. Moreover, it is possible to tailor the education to the level of each learner. Regardless of the grade to which the learner belongs, the automatic management of LMS enables learners to find courses that suit their educational capabilities. Therefore, the cyber home learning system is equipped with a wide range of classes from which to choose, supplementary, basic, and sophisticated. Of course, the operation of the system varies slightly among metropolitan and provincial offices of education [10]

Since 2005, the number of students and teachers participating in cyber learning is gradually increasing. In 2008, the number of students who have participated in cyber learning system reached almost 3.09 million. Among them, 0.51 million are under cyber teachers' management and this is almost a 3 times increase compared to the 0.17 million students in 2006. Also, the remaining 2.48 million students participate in cyber learning voluntarily. The number of cyber teachers is also on the yearly increase reaching 30,960 in 2008 [13][14]

[1] Cyber Home Learning is a kind of e-learning brand in Korea. All of the provinces have their own Cyber Home Learning system in Korea.

A Cyber home learning system is composed of teachers currently employed in schools. They encourage learning, provide feedback, and answer questions. In short, they support students in systematic learning.

3. Methodology

In this paper, in order to measurement the satisfaction of Cyber Home Learning System, assessed participants' cognition of CHLS in Korean.

3.1 Questionnaire

The instrument used in this study was Kim Yong, et. al.(2007)'s Elementary and Secondary e-Learning Satisfaction Inventory[15]. The validity and reliability of the inventory were already verified, and when its reliability was checked again in this study, the reliability coefficient of it was .889, which led credibility to the reliability of it.

Learner satisfaction level was investigated in two regards. One was satisfaction level with learning content, which denoted satisfaction level with overall contents provided by e-learning. The fun of learning content referred to how much interesting the content was, and understanding of learning content referred to how much the content was easy to understand. The other was satisfaction level with the support system, which meant service provided to facilitate learning and consisted of sharing opinions with classmates in pursuit of cooperative learning, ease of access and functions other than learning.

3.2 Sampling

The surveys were conducted over fourteen days from November 13 - 26, 2007. The respondents were learners, who participated in the system. The method was through web survey. The total number of participants was 35,588 learners, 26,896 elementary students, 7,787 middle school students, 906 high school students. The content of the surveys concerned the degree of satisfaction for improvements to the system.

3.3 Analysis Method

The answers for such questions are divided into seven degrees ranging from "Not at all" (1) to "Moderately" (4) to "Very much" (7). The rating scale was then translated into a figure from 0 to 100, with 100 being the highest. Based on this, average and standard variations were produced.

100, the total = (Numerical rating scale - 1) ÷ 6 × 100

Under this schema, 'Very much' is 7 on a numerical rating scale, so it is translated as 100.

Data processing of research is used SPSS PC + 13.0 program, and verify the following information.

First, the full satisfaction of the class difference between class type and self-study type autonomy, self-study type and class type in the class in each grade difference was verified using the t-test.

Second, correlation between satisfaction related sub-factors (correlation coefficient) of the verification.

4. Result

4.1 Differences in Satisfaction Analysis

Table 1 shows that the analysis of satisfaction in detail. The result of satisfaction analysis about CHLS, class type(68.73) was higher satisfaction than self-study type(62.71). And it was significant difference($p < .05$). In the sub-factors, satisfaction of class type was higher.

The only difference between the two groups was whether they were under the guidance of a cyber teacher or studied on their own, which were respectively called a class type and a self-study type. In other words, the same contents and same learning support were provided to both groups. But when their satisfaction level with the learning content was checked, the students who belonged to the class type expressed better satisfaction irrespective of the grade of school. Although both groups were given the same contents, those who were guided by a cyber teacher were more gratified, and it seemed to stem from interaction with the teacher.

On the other hand, Table 2 shows that both groups expressed better satisfaction with ease of website connection than the other factors(class type: 71.91, self-study type: 65.06). It showed that the sustained efforts to improve accessibility to back up student learning paid off.

Table 1. The Detail Satisfaction of Learners in the Cyber Home Learning System

Grade of school student	Total Satisfaction			Satisfaction of Learning Content			Sub-factor In Satisfaction of Learning Content								
							Interesting Learning Material			Inclusion of Preferred Subjects			Understandable Learning Content		
	Class Type	Self Study	t	Class Type	Self Study	t	Class Type	Self Study	t	Class Type	Self Study	t	Class Type	Self Study	t
Total	68.73	62.71	10.92	67.63	62.01	8.41	66.05	57.70	14.31	69.15	63.15	6.53	69.99	63.02	8.48
Primary	70.95	66.11	9.89	69.58	65.21	9.56	68.75	60.07	10.35	71.11	65.18	7.15	72.62	65.77	10.72
Middle	61.78	55.85	9.27	61.63	55.48	11.58	59.15	50.87	12.51	64.70	57.42	6.11	63.25	55.05	12.99
High	56.70	47.14	8.98	55.63	47.70	10.87	56.99	48.41	11.89	58.72	53.90	6.99	61.38	53.11	9.44

<two tail significant, α=0.001>

Table 1. The Detail Satisfaction of Learners about support system

Grade of school student	Satisfaction with Support System			Sub-factor of Satisfaction with Support System								
				Information Exchanges with Fellow Learners			Easy Access to the Homepage			Other Functions Besides Learning		
	Class Type	Self Study	t	Class Type	Self Study	t	Class Type	Self Study	t	Class Type	Self Study	t
total	67.63	62.01	14.72	56.80	40.26	25.48	71.91	65.06	7.55	62.43	55.81	8.43
Primary	69.58	65.21	11.83	60.34	43.32	49.38	74.82	67.70	9.01	66.22	59.09	9.02
Middle	61.63	55.48	21.51	47.22	30.78	51.29	64.75	57.46	6.92	52.65	45.98	8.82
High	55.63	47.70	7.84	48.88	36.18	18.82	60.35	54.56	7.40	50.51	47.42	2.96

<two tail significant, α=0.001>

The class type gave the students better satisfaction at the support system probably because they were able to have a more dynamic interaction with their cyber teachers and share their opinions with other students. In other words, the students whose classes were managed by cyber teachers were better contented even though the support system of class type was the same as that of self-study type.

Table 3 shows that as a result of analyzing what factors had a close correlation to the overall satisfaction level of both groups with elementary and secondary e-learning, the satisfaction level of CHLS was most correlated to that of the supporting service in the class type. It indicated that the students who were better gratified with the supporting service were more satisfied with CHLS. Therefore more satisfactory supporting service should be provided to raise the satisfaction level of students with elementary and secondary e-learning. The satisfaction level with the learning content had the second closest correlation with that, as the correlation coefficient of the two was .704.

Table 2. The correlation of sub-factor in Class type

	Satisfaction of learning content	Satisfaction of support system	Total satisfaction
Interesting Learning Material	0.882	0.627	0.652
Inclusion of Preferred Subjects	0.860	0.552	0.560
Understandable Learning Content	0.858	0.601	0.619
Satisfaction of learning content	1.000	0.684	0.704
Information Exchanges with Fellow Learners	0.529	0.784	0.528
Easy Access to the Homepage	0.548	0.778	0.573
Other Functions Besides Learning	0.459	0.770	0.537
Satisfaction of support system	0.684	1.000	0.729

In the self-study type, table 4 shows that the correlation coefficient between the satisfaction level of CHLS and that of the supporting service was 0.683, and the correlation coefficient between the satisfaction level of CHLS and that of the learning content was 0.739. Thus, higher satisfaction with the learning content led to better satisfaction with CHLS. Accordingly, a supply of superior contents is required to boost student satisfaction with the self-study type.

Table 3. The correlation of sub-factor in Self- Study type

	Satisfaction of learning content	Satisfaction of support system	Total satisfaction
Interesting Learning Material	0.894	0.599	0.694
Inclusion of Preferred Subjects	0.878	0.549	0.606
Understandable Learning Content	0.882	0.592	0.662
Satisfaction of learning content	1.000	0.656	0.739
Information Exchanges with Fellow Learners	0.467	0.777	0.459
Easy Access to the Homepage	0.608	0.784	0.618
Other Functions Besides Learning	0.486	0.809	0.546
Satisfaction of support system	0.656	1.000	0.683

The finding that there was a close correlation between satisfaction with the support system and overall satisfaction could be interpreted that students won't be able to have access to cyber home study and their overall satisfaction level will drop when they fail to log onto the web-site or when the web-site isn't well performing. And they are expected to put CHLS to more use if they find the contents of the web-site intriguing.

5. Conclusion

This study attempted to compare the satisfaction level of students with the two different kinds of cyber classes by focusing on the form of classroom management. As a result of checking any possible gaps in satisfaction level, the students whose cyber classes were led by cyber teachers expressed better satisfaction in every regard. Their cyber teachers took care of their studies, and that seemed the reason why they were more gratified with learning content or backing service.

Given the findings of the study, the followings should be taken into account when an e-learning service is provided in the elementary and secondary education sector:

First, the sort of e-learning service that students could interact with their teachers is required instead of merely sticking to individualized self-directed learning, which is the strength of e-learning. At least a minimum level of guidance or backing should be provided to facilitate student learning.

Second, students are able to interact with one another or with their cyber teacher in a cyber class led by the teacher. This kind of cyber class is expected to instill a sense of belonging to students in the lower grades so that they could find it more satisfactory to study.

Third, the form of e-learning service provided should depend on learner circumstances to accelerate their learning. For instance, the sort of service that steps up learner-teacher interaction is necessary in a cyber class led by a cyber teacher, such as video counseling or chatting. In the other class without a cyber teacher, the kind of learning contents that could bolster learner flow should be provided.

There have been sustained efforts to further learning in the sector of e-learning. The form of e-learning service should hinge on how to let learners approach learning and how to take care of them. In addition, students in the lower grades should be backed by their teachers in a more careful manner, though self-directed learning is the primary merit of e-learning in general.

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