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E-Learning Satisfaction - Is It Different from Learning Satisfaction

Sunghoon Lee[1*]

사이버대학 재학생 학습 만족도 향상을 위한 연구

이성훈[1*]

Abstract The growth of an information and knowledge based society has changed the base of education from institution-based to a learner-based system. This indicates that the educational purpose and individual characters of the learners are the primary factors for the educational success. In the information and knowledge based society, the Cyber University is a representative example of the new educational paradigm with its online communities, multi-media based education and communication among the learners. The sample of study was 1620 students of a leading cyber university in Seoul, Korea. One of the results in this study showed that satisfaction levels of learning and education do not have significant relationship with age or employment. Rather the lowering level of satisfaction after sufficient adaptation period of cyber education was raised as rising problem.

Key Words : e-learning, Cyber University, learning satisfaction, computer literacy

요 약 지식 정보화 사회의 발달은 교육자나 교육 기관 중심의 교육에서 학습자 중심의 자기 주도적 학습을 중심으로 하는 교육으로 변화하게 되었다. 이는 학습자의 특성과 교육 의도가 학습 성과에 가장 중요한 요인으로 작용함을 의미한다. 특히 학습자들간의 학습, 온라인 커뮤너티, 멀티미디어 중심 교육 등이 혼합되어 있는 사이버 대학이 가장 대표적인 새로운 교육 패러다임을 활용한 예로 들 수 있다.
본 연구는 서울에 있는 4년제 대학에서 병설한 사이버 대학교 재학생 1620명을 대상으로 사이버 교육에 대한 만족도 조사를 실시하였다. 조사 분야는 입학 프로세스 및 대학 교육에 대한 기대 수준 등을 위시한 개인적 측면의 인구 통계적 분야와 수업 및 교육환경, 학습 과정 등에 관한 기관과 관련한 만족도 수준을 측정하였다. 연구 결과는 사이버 대학 교육이 원천적으로 사회 재교육을 위한 평생 교육법에 의거하여 설립된 것과 같은 맥락으로 학습과 교육에 대한 만족도는 나이와 직업 유무와 높은 상관 관계가 없었다. 특히 컴퓨터 리터러시와 매우 깊이 관련되는 나이는 학습 만족도와는 상관 관계가 없었고, 오히려 50세 이상의 계층에서 높은 수준의 학업 만족도를 보였다. 그러나 궁극적으로 사이버 교육에 익숙하여지면서 오히려 사이버 교육에 관한 만족도가 저하되는 현상은 앞으로 사이버 대학이 해결해야 할 과제로 제기 되었다.

1. Introduction

As the new law for lifelong education has initiated after 2001, cyber universities started to recruit the students from freshmen and other transferring students. The traditional offline universities have limitation by time, place and others factors such as age. The development of information technology and the Internet hasbrought considerable change and evolution to the educational industry. No longer do you have to attend class on time to receive lectures, you can now have in-depth conversations with professors about the subjects through

[1]Professor, Hanyang Cyber University
*Corresponding Author: Sunghoon Lee(shlee@hycu.ac.kr)
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real-time internet boards, chatting, and distance conversations.

However, there have not been much studies related to the specific effects or results of college level education through the internet. While learning is the only a priority for the traditional college students, cyber university students have a variety of social and private roles such as housewife, office work, part time work, and business owner. This brought an issue for learning fidelity of cyber education compared to traditional education. Moreover, in a digital era where lifelong education and learning has become essential, cyber education is no longer a matter of choice but a necessity.

Until now, studies on cyber education have focused on a side of the delivery of educational contents. The studies until now, focusing on educational technology, have over-sighted the variety of students and their individual needs. This indicates that most researches for cyber education lack in social and cultural effects cyber education. In a digital age where self-directed learning is emphasized and learner based learning environment, the satisfaction of learner is more important than any other factors. We tried to verify innovative ways of education for educational consumers who have various social and vocational experiences.

2. Literature Review

Previous studies [2] have shown the advantages of cyber education such as convenience, low cost, dissemination of text, and subjugation of geographical limits.

Educational training environment [27] defines the motivation as "how willingthe learner is in trying to raise the standard of his or her educational training or functional outcome." One of the prior conditions of successful educational training is the selection of participants with educational training ability.Educational training potential is decoded by the learners' ability and motivation [11]. As most cyber university students have various social or vocational roles, it is important that studying the correlations between educational motivation and satisfaction in terms of education continuance.

Hicks and others said that giving various discretionary options of specific education programs to learners is a strategy for motivation [16]. For a newly emerging cyber university, academic policies or suitable educational systems are yet to be set. Therefore, studies related to learner satisfactions and the customized training programs are essential. The learners'motivation and ability are vital in successful educational training [28]. The comprehension of relationship between utilization of course contents and educational satisfaction is essential. Satisfaction levels of cyber education are determined by demographical parameters such as age, parameters related to courses and educational curriculums, and those relating cost or personal attitude [12, 17, 20, 30, 34].

The learner's age has been recognized as an important factor in cyber education [21]. Younger people tend to spend more time on the internet and they are relatively active in acquiring new skills. However, according to Jiang and Ting (1998), the learners'age has no relationship with learning ability. On the contrary, the studies of Fredericksen (2000) and Swan (2000) showed that age and satisfactory levels are in inverse relation. Gender is also an interesting subject of study in cyber education [12, 33]. Studies show that females known to be introvert are rather active in online classes or debates better and have higher satisfaction levels [20, 24]. However, other studies show the opposite [8]. The learners who are working full time and duty performing experiences have much relation to learning satisfaction [30]. Learning satisfaction has much correlation to being able to learn what is practically needed.

The quality of educational service has been reported to be related with satisfaction. Difficulties for a face-to-face communication brought the need for higher level of interactions between the learners and instructor. Offering more opportunities of learning participation is suggested for improving interaction levels [6, 9, 16, 31]. However, unconditional encouragement of higher participation may bring dissatisfaction due to complications of interactions within the system [17, 34]. Particularly, when the learner aims to obtain specific knowledge through cyber education, excessive encouragement for interactions may be felt as a pressure. The development of IT technology has consequently brought higher participation levels that lead to positive results of cyber education [23].

Many studies on cyber education have commonly

stated the need for different capacities and abilities comparing to the traditional education methods [7, 10]. Particularly, the facilitation abilities or coaching skills are needed in a cyber education environment where the former educational paradigms do not need much.

3. Methods

The research was conducted through a survey of students at a leading cyber university in Seoul, Korea. The survey questions were composed with personal characteristics such as age and learning attitudes, and expectations of university education such as the school's learner supporting systems, and satisfaction levels of the educational environments. As the study investigated educational consumers'perspective, most measurements were perceptional for evaluating the standards and parameters of satisfaction levels.

With a survey result, the authoranalyzed the confirmatory factor analysis in order to develop a satisfaction scheme. The analysis brought five second order factors for satisfaction. The five second order factors are course, contents, system, evaluation and cost.

This study was designed to develop a consumer-based education program by the learners'personal status. Therefore, in order to help comprehension of satisfaction levels, the average and standard deviation were converted to 50 and 20 for easy comprehension. Table 2 depicts this relationship. The groups were classified by school year, academic background, academic records, occupation, rank, gender, age, and income.

<Table 1> shows a significant difference in satisfactory levels between different groups of the learner's academic backgrounds prior to cyber universities.<Table 1> also shows the level of significance of variables by academic background. The result shows a significant relationship between satisfaction of course and academic background.

The satisfaction levels according to the occupation shown in <Table 2> and <Table 3> were verified on the basis of occupational groups classified by the Ministry of Labor.

<Table 2> shows the difference by occupation for satisfaction. <Table 2> also shows satisfactory levels by occupational groups while <Table 3> verifies the relevance of satisfactory levels of different occupational groups. <Table 3> depicts the significance of variables by occupations. All research variables show significant relationship to the occupations.

Satisfaction of different groups showed significant

[Table 1] Significance of satisfaction levels by academic backgrounds

		Sum of Squares	d.f.	Mean Square	F	Sig.
Course	Between Groups	5300.839	6	883.473	2.219	.039
	Within Groups	642299.161	1613	398.202		
	Total	647600.000	1619			
System	Between Groups	3751.745	6	625.291	1.567	.153
	Within Groups	643848.255	1613	399.162		
	Total	647600.000	1619			
Evaluation	Between Groups	2108.629	6	351.438	.878	.510
	Within Groups	645491.371	1613	400.181		
	Total	647600.000	1619			
Cost	Between Groups	3812.299	6	635.383	1.592	.146
	Within Groups	643787.701	1613	399.124		
	Total	647600.000	1619			
Contents	Between Groups	1719.286	6	286.548	.716	.637
	Within Groups	645880.714	1613	400.422		
	Total	647600.000	1619			

results in factors such as course, system, cost, etc. Despite the considerable difference between groups, this does not denote which group is more or less satisfied, butonly emphasizes the statistical significance.

Satisfaction levels by gender are shown in <Table4>. <Table 4> also depicts the gender relations. The relation shows some differences of variables by gender. Course or system satisfaction makes no odds while evaluation satisfaction showed considerable differences.

The concepts of variables as written below;

Course means subjects of each major. System means network infrastructure of cyber education. Evaluation characterizes reliability of course grade. Cost represents for actual cost for taking cyber education. Contents mean educational contents of each course. This also indicates the level of efficiency of contents delivery, the level of usefulness and level of easiness to understand.

[Table 2] Satisfaction levels by occupation

		Course	System	Evaluation	Cost	Contents
Students	Mean	52.2364	48.4508	51.5373	52.3334	52.4587
	N	132	132	132	132	132
	s.d.	21.28269	21.90152	20.10610	21.11778	21.68367
Clergy	Mean	48.9573	50.5781	49.6002	50.7406	49.8560
	N	541	541	541	541	541
	s.d.	19.20527	19.29627	19.73306	18.90767	19.85093
Expert	Mean	48.1526	49.0864	49.3822	50.6940	51.5468
	N	383	383	383	383	383
	s.d.	21.02082	21.30561	20.11606	19.88365	19.87237
Sales	Mean	51.1671	50.7767	52.2386	52.0003	48.0082
	N	66	66	66	66	66
	s.d.	20.87247	19.24531	21.84651	18.01026	20.67981
Public officer	Mean	53.3079	54.5349	54.0425	49.5602	49.6854
	N	61	61	61	61	61
	s.d.	20.37894	20.49355	18.46310	21.06959	17.43699
Self employed	Mean	48.5445	48.8733	52.9819	42.2685	46.5894
	N	122	122	122	122	122
	s.d.	20.48791	19.77584	19.15801	22.37388	20.64091
Military	Mean	58.6859	59.9183	52.3828	39.9421	55.8998
	N	39	39	39	39	39
	s.d.	17.91319	17.11718	21.43732	22.40316	16.30547
House wife	Mean	55.2129	53.3554	44.8929	50.2544	48.4747
	N	72	72	72	72	72
	s.d.	17.90115	18.99537	20.11105	17.06186	16.01543
Others	Mean	50.7899	47.1708	48.8559	51.1642	48.0754
	N	204	204	204	204	204
	s.d.	18.92725	18.35617	20.14751	20.35096	21.14444
Total	Mean	50.0000	50.0000	50.0000	50.0000	50.0000
	N	1620	1620	1620	1620	1620
	s.d.	20.00000	20.00000	20.00000	20.00000	20.00000

[Table 3] Significance of satisfaction levels by occupation

		Sum of Squares	df	Mean Square	F	Sig.
Course	Between Groups	8597.543	8	1074.693	2.709	.006
	Within Groups	639002.457	1611	396.650		
	Total	647600.000	1619			
System	Between Groups	8546.547	8	1068.318	2.693	.006
	Within Groups	639053.453	1611	396.681		
	Total	647600.000	1619			
Evaluation	Between Groups	5323.402	8	665.425	1.669	.101
	Within Groups	642276.598	1611	398.682		
	Total	647600.000	1619			
Cost	Between Groups	12994.872	8	1624.359	4.124	.000
	Within Groups	634605.128	1611	393.920		
	Total	647600.000	1619			
Contents	Between Groups	5693.234	8	711.654	1.786	.075
	Within Groups	641906.766	1611	398.452		
	Total	647600.000	1619			

[Table 4] Satisfaction levels by gender

V4		Course	System	Evaluation	Cost	Contents
Male	Mean	49.8030	50.2192	52.3114	48.3534	50.0878
	N	959	959	959	959	959
	s.d.	20.59836	20.09194	19.44741	20.29740	20.11628
Female	Mean	50.2858	49.6819	46.6466	52.3889	49.8726
	N	661	661	661	661	661
	s.d.	19.11039	19.87673	20.32785	19.32757	19.84459
Total	Mean	50.0000	50.0000	50.0000	50.0000	50.0000
	N	1620	1620	1620	1620	1620
	s.d.	20.00000	20.00000	20.00000	20.00000	20.00000

4. Conclusions

Seven years have passed since the establishment of cyberuniversities. Cyber universities dispatched their first and second graduates. This study is based on the factors of consumer (learner) satisfaction and the primary objectives of cyber education. Prior studies have based their research on the satisfactory levels of students of the researchers themselves, and therefore leave much doubt in validity.

This study surveyed a relatively large group of 1620 cyber university students, observing specific sub factors composing e-learning satisfaction. Divergent results were derived from this study showing other than what was regarded as common knowledge until now. In particular, high grades and high satisfactory levels had no correlation as taken in general universities and also the bias which women with low computer utilization abilities will have low satisfactory levels was proven to be wrong. This is thought provoking to many studies that indicate the correlation between computer literacy and e-learning.

Studies relating gender and age to satisfactory levels have less importance nowadays, due to user-based and ubiquitous computing environments. Cyber universities have often been cognized as means of evading social discrimination for high school graduates. However, this study shows that most students aimed for practical and social business skills rather than only the degree itself and that these students were at a high satisfactory level.

This research proposes that cyber universities now should target not only high school graduates but also the members of entire society. Society also needs to invest for better contents.

The study provides the basic guideline to improve the satisfaction level of students. Firstly, the students require personalized attention for their learning. The educational institutions need to devise better technology for teaching. Secondly, students need experience based learning. Simple one-way teaching is not applicable. More diverse interacting technologies need to be developed. Finally, keener evaluation methodologies are needed. As the part of study results show, students have relatively unsatisfactory to the evaluation mechanism. More studies for better evaluation processes are needed.

The study also has limitations for sample characteristics. Using the group of students from one Cyber University where Korea has 17 universities. This may hinder for external validity. Moreover, this study is a survey for depicting the current status not for a hypotheses testing. However, it is hard to dispute that within an IT power environment such as Korea, e-learning and cyber education will undoubtedly spearhead from traditional educational institutions to broad ranges of business environment. The fast development of technologies and even faster spilling over environment will urge schools and educational institutions to adopt and apply cyber education both on-line based and traditional ones.

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Sunghoon Lee [Regular member]

- 2006.11~Present : Professor, Hanyang Cyber University
- 2002.4~2006.11 : CEO, LS Asset Management
- 1985.8~2002.3 : EVP, LG Investment Securities
- 1992.6 Ph.D. in Finance, State University of New York
- 1984.8 MBA, University of Pittsburgh
- 1979.2 BA, Yonsei University

<Research Area>

- Operational Efficiency of capital markets and financial institutions
- Evaluation of mutual fund performance