The Level of Self-Directedness : A Parameter for the Success of Cyber Education

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Abstract

The study reveals the relationships between the level of self-directedness and educational performance of students in the cyber education environment. Where the motivations for participating cyber education may vary, the final destination of education may be the same-improving the level of self achievement by study. As the researchers believe that the paramount success factor of cyber education would be self-directedness, we probed the factors to build up self-directedness. Researchers developed the level of self-directedness as object-orientation, action-orientation, and learning orientation. Those composite orientations were compared with learning achievement. The study showed the significant relationship between some factors of self-directedness and educational performance.

Keywords : Cyber Education, Self-diretedness, Educational Performance

1. Introduction

The fast development of information and communication technology allowed and urged the virtual education, in other words cyber education. The paramount advantage of cyber education is the freedom of learners. Learners can be educated anytime, anywhere, and almost anyhow. Moreover, traditional educational services are extending their educational realm into virtual classroom for young kids, virtual school for teenagers and virtual universities for adults. Organizations and companies are expanding the level of cyber education compared to the on sight education for their employees and customers. The freedom also pushed the cyber educational setting from the simple lecturing to the collaborative learning and active participation through the multimedia technologies.

The final destination of those fast developing learning technologies might be a learning achievement. Whatever the sophisticated and developed technologies are utilized, the output of learning will be measured by learners' achievement as the traditional classroom system is. However, where the traditional classroom environment depends mostly upon the lecturer, cyber education environment needs more factors such as learning participation. The lecturer has limited control for learners' participation. In the cyber environment, the participation of learning is a complex result of interactions among contents, delivery media, presentation skills and learners' attitudes. Many researchers conclude that the level of participation depends upon self-directedness of learners [Leidner and Jar-

venpaa, 1995; Swan, et al., 2000; Hong, 2002]. Self-directedness is one of the significant variables related with learning performance.

This study reveals the relationship between the level of self-directedness and learning achievement. We propose that learner's self-directedness is dependent upon learner's characteristics and is directly related with learning performance. The study classified the self-directedness based upon learners' learning intention. We categorized learning intention as object orientation, activity orientation, and learning orientation based on the previous research [Arbaugh, J. B., 2002]. This classification allows learners' diverse intentions for learning to be responsible to the learning achievement.

2. Theoretical background

Traditional studies reveal that the advantages of cyber education are multifaceted advantages such as easiness to access, price advantage, flexibility, and overcoming location limitations [Ahmad and Ives, 1998]. In order to investigate the relationship between learning intention and achievement, we refer educational training literatures. The definition of learning motivation in the vocational training can be defined as the level of learner's effort to improve one's achievement in his or her job [Robinson, 1985]. The key factor of success for educational training is significantly related with personal selection for training. In other words, the performance of educational training lies in the capability and the learning motivation of trainees [DeSimone and Harris, 1998]. Considering these

results, the study of relationships among the learning motivation, the learning satisfaction, and the learning continuity provides important insight both to the academia and practice.

Hicks and colleagues assaulted that the participants of educational training should own the decision making process which learning program to take for the better educational performance. The cyber universities in Korea that has less than 6years of history have not constituted appropriate level of educational programs and personalized learning. In this aspect, the study for customer oriented education research is essentially required. Rossett [1977] emphasized that the success of educational learning lies in the educational customers' learning motivation and perception of learning utility for the education program. Based on Rossett's research, the study needs to investigate the relationship between the curriculum of Cyber University and the level of knowledge utilization in view of learning satisfaction.

The variables that are related with the satisfaction of cyber education can be categorized as demographic variables such as age, variables related with course work and class work, and variables related with personal attitude such as price [Fredericksen et al., 2000; Jiang and Ting, 1998; Shrivastava, 1999; Hightower and Sayeed, 1995; Warkentin, Sayeed, and Hightower, 1997]. Traditionally age has been a key consideration in the cyber education [Karuppan, 2001]. The technology adoption theory declares that younger the ages will be more apt to the new technology adoption such as Internet and cyber education. Young generation usually spend more time for

Web surfing than older ones. However, Jiang and Ting's research [1998] articulated that learners' age and learning capability do not have significant relationship. Moreover, Frederickson and colleagues [2000] and Swan and colleagues support the idea that younger the ages are less satisfied with the cyber education.

Gender also has been considered as a key factor to differentiate the cyber educational performance [Fredericksen et al., 2000; Swan et al., 2000]. It is believed that women who have more introvert characteristics show better performance and satisfaction in the on line discussions and cyber learning [Jiang and Ting, 1998; Ory, Bullock, and Burnaska, 1997]. However, this should have been another misleading myth by the study of Blum [1999]. Blum's well defined study did not find any significant relationship between gender and educational performance in the cyber education. However, job experiences and job-related subject may have significant relationship for the cyber educational satisfaction. As traditional education satisfaction studies clarify, the satisfaction of cyber education is also related with practical usefulness.

The quality of cyber education is closely related with the satisfaction. The quality of cyber education is paradoxically apt to the level of interactions between instructors and students and among students. The higher the level of interactions, the better the performance in the cyber educational setting would be possible [Wild et al., 2002]. This means that more participation opportunities than the traditional education will provide better educational perform-

ance in the cyber education [Baily and Colter, 1994; Boston, 1992; Hiltz, 1986; Strauss, 1996]. This argument should be cautiously treated. Much higher level of interactions in the system may decrease the satisfaction of study because of complexity and difficulty [Hightower and Sayeed, 1995; Warkentin, Sayeed, and Hightower, 1997]. Especially in the specific knowledge and skill learning environment, the higher level of interactions may hinder original objectives of learning participation. In the end, however, fast development of information and communication technologies brought positive results for cyber education [Leidner and Jarvenpaa, 1995].

Many researchers have congruent conclusion that cyber education environment requires very different capabilities and technologies compared to the traditional education [Berg, 1995; Brandon and Hollingshead, 1999]. Especially abilities of instructors such as facilitation capability and coaching skills have not considered as critical virtue for the teachers. The self-directing ca-

pability and self-directed learning of students are closely apt to the skills of facilitation and coaching by instructors. Self directed learning means that the learners possess the learning initiatives and define his or her learning objectives. The learners find the learning resources and choose the learning strategy. The final learning results will also be evaluated by learners.

The self directed learning will be classified into 4 levels by the level of self-directedness. <Table 1> explains the level of self-directedness.

Generally, self-directed learning can be dichotomized as self-directed and others-directed. <Table 2> classifies dichotomized learning habits. This dichotomy does not literally classify two exclusive characters. Rather, these characters refer two extreme habitual routines of learners.

In this study, we categorized motivations for learning into three perspectives such as object oriented, activity oriented and learning oriented.

<Table 1> Self-directedness Levels

Level	1	2	3	4
Level of self-directedness	Low	Somewhat	High	Very high
Learner's characteristics	As the learner is very dependent and passive, authoritarian governor is needed.	As the learner is somewhat interested in the subject, well defined motivating methods are needed	As the learner has appropriate level of knowledge and skill, improving the level of self directedness and confidence is needed	As the learner is self-directing person, the learner defines the learning objects and standard
Instruction strategy	Athletic coach style	Motivator	Helper for self-directed learning	Spiritual mentor
Teaching methods and learning resources	Individualized and contents oriented teaching, Detailed exercises	Well defined teaching and instructor directed discussion, Detailed feedback	Seminar and team project with minimal interactions	Discussions and essays by students

⟨Table 2⟩ Comparison between self directed learner and others directed learner

	Self directed learner	Others directed learner
Learning objectives	Limited scope of objective	Divers objectives
Learning plan	Given specific and detailed descriptions	Self made plan
Learning method	Programmed learning methodology and resources	Resource seeking process
Learning contents	Well constructed contents	Either structured and contingent learning contents
Learning contexts	When the learning barrier came out, the learner awaits the instructor	When the learning barrier came out, the learner gives up or change the program by his own decision
Assignments	Instructor based	Contents based
Personal tendency and characteristic	Dependent upon outside, Logical and closed logics	Independent from outside, Open logics Intuition and imagination

The three perspectives may not be mutually exclusive and exhaustive. However, these three perspectives may ground the theory for the relationships between personal traits and the achievement in cyber education.

3. Methodology

The demographic characteristics of samples are presented in ⟨Table 3⟩. As the status of study is somewhat exploratory level, most of results are presented in percentile. The samples are from the classes of the leading cyber university in Korea. The students were taking computer related classes and were majoring various aspects such as computer science, management and education. The data was collected in the spring semester of 2005 through the on-line survey.

The survey questions were composed with

three perspectives such as object oriented, activity oriented and learning oriented. As this study is not a theory building level but basically a theory grounding status, three perspectives are not statistically proven with confirmatory factor analysis or regressions. The study focuses more for internal consistency than external validity.

⟨Table 3⟩ Sample characteristics

Characteristics		Number of cases	Percentile
Gender	Male	56	80%
	Female	14	20%
	Total	70	100%
Ages	Teens	1	1.42%
	20s	20	28.57%
	30s	38	54.28%
	40s	10	14.28%
	50s	1	1.42%
	Total	70	100%

3.1 Components of self-directedness

We developed the components of self-directedness in various aspects such as level of participation, learning methods, and the consistency of learning contents. <Table 4> presents the contents of self-directedness. The final component of self-directedness is learning motivation. Where the basic argument of e-learning may be relationship between the motivation and performance, the initial research status hinders to probe this question yet.

3.2 Components of learning participation

Learning participation does not literally mean taking lectures but infers active involvements in various activities related with classes. Moreover,

〈Table 4〉 Components of self-directedness

Pre-class orientation	Participated	Not-participated		
	37%	63%		
Prior study for class	Yes	no		
	29%	71%		
Participation of self-evaluation	Yes	no		
	74%	26%		
Preferred learning methods	Web-based and lecture	Web-based	lecture	
	66%	30%	4%	
Contents understanding	More than 90%	70~90%	50~70%	Less than 50%
	23%	62%	12%	3%
Motivations for learning	Object oriented	Activity oriented	Learning oriented	
	48%	26%	26%	

〈Table 5〉 Components of learning participation

Time for class	Less than 1 hour per say	1~3 hour per day	3~5hour per day	
	24%	70%	6%	
Level of lecture taking	Less than once	2~4	More than 5	
	58%	39%	3%	
Level of extracurricular interactions	More than 90%	70~90%	Less than 70%	No interactions
	10%	9%	16%	65%
Utilizations of Internet resources	Yes	No		
	89%	11%		

the success of self-directed learning lies in the level of participation either on-line or off-line. The classes and other club activities are both considered for learning participation. Peer interactions for knowledge seeking process are getting more important factor for on-line education. <Table 5> presents components of learning participation.

3.3 Components of learning achievement

Cyber education environment needs to consider various aspects for learning achievement. The class grade alone cannot count the achievement of cyber education because most students are nontraditional students who are working in daytime. We consider learning achievement two perspectives. The first part is learner's satisfaction and the intention for recommendation. The second part is students' grade. <Table 6> presents the variables.

3.4 Differences in self-directedness

We believe that three kinds of self-directedness such as object orientation, activity orientation and learning orientation will show different attitude to the behavior of cyber educa-

tion and motivation of study. For example, object oriented self-directedness shows more independent related motivation such as individual grade and less collaborative related motivation such as interactions among peers. Activity oriented motivation students are less interested in evaluations and grades but more interested in interactions. As <Table 7> through 9 shows, the three traits show somewhat different results.

4. Conclusions

The study evaluated the relationship among different self-directedness, motivation, and traits in cyber education environment. The various motivation and performance relation studies refer that the higher motivation will result in a higher performance. However, in this study, we probed that motivation characteristics are related with different traits in cyber education. The result does not show any preferred or 'better' motivation, but shows that different motivation is related with different activities and performances in cyber education.

The result of the study can be inferred that different basis of self-directedness actually demonstrated the different attitude to the cyber

<Table 6> Components of learning achievement

Intention for recommendation to others	Yes	no		
	61%	39%		
GPA	High(A+, A)	Middle(B, B+)	Low(Below C)	
	60%	36%	4%	
Student satisfaction	Very satisfy	Satisfy	Somewhat	Not satisfy
	47%	37%	13%	3%

〈Table 7〉 Traits of object oriented motivation

Preferred class	Web based	Web + lecture
	31.25%	68.75%
Self evaluation	Yes	no
	76.25%	23.75%
Interaction	Yes	No
	71.82%	28.18%
GPA	High(A, A+)	Low
	87.25%	12.75%

〈Table 8〉 Traits of activity oriented motivation

Preferred class	Web based	Web + lecture
	27.27%	72.73%
Self evaluation	Yes	no
	27.27%	72.73%
Interaction	Yes	No
	70%	30%
GPA	High(A, A+)	Low
	72.72%	27.28%

〈Table 9〉 Traits of learning oriented motivation

Preferred class	Web based	Web + lecture
	27.27%	72.73%
Self evaluation	Yes	no
	64.55%	35.45%
Interaction	Yes	No
	50%	50%
GPA	High(A, A+)	Low
	80%	20%

education and different level of motivation. Moreover, different level of self-directedness requires customized treatment for education for better achievement and higher satisfaction.

This study does not provide the rule of thumb methods for cyber education. However, the study will ground theory about educational performance in view of self-directedness. Many researches merely emphasize self-directedness for educational performance. However, cyber universities that teach mostly matured people need to reconsider about self-directedness. In other words, self-directedness does not have single trait but have various ones. Cyber education needs to breed appropriate level of self-directedness that will breed better educational performance.
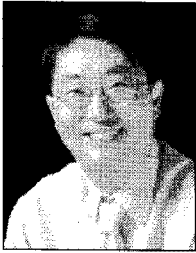
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