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# E-Learning Satisfaction by Self-Efficacy in Higher Education[1]

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**Abstract.** This study was to present how self-efficacy affects to the satisfaction of the e-learning classes. Self-efficacy was especially divided into academic self-efficacy, self-regulated self-efficacy, and computer self-efficacy for measuring college students' characteristics in e-learning. For this a study survey questionnaire was developed and a total of 687 college students responded. The results were as follows: 1) the highest satisfaction among the participants' characteristics was male, junior, 3-4 times, 2-3 hours, 2) academic self-efficacy predicted the level of self-regulated learning and computer self-efficacy. Future researches must support the implementation, process, and result of e-learning.

**Keywords**: e-learning, satisfaction, self-efficacy

## 1 Introduction

People avoid activities that they believe they can't handle, but they try and do those they believe they can. [1]. Pajares and Kranzler [2] reported that this perception held true in life and also it influences the perception of the act, the amount of work put into the effort, the degree of choice and lasts and how it affects the what gets done[3]. If learners have low self- efficacy while performing a task, they will experience feeling anxiety and impatience. A key to reversing that viewpoint is to getting learners with low self- efficacy to work harder, to continue on tasks, to work to overcome problems, to take on progressively challenging tasks, and to cultivate interest in academics is for instructors to give learners work at their proper instructional independent levels, and keep to instructional principles expected to improve self- efficacy.

Self-efficacy - in the context of the situation is a concept; it can measure the specific subject [4]. The scale for measuring the specific subject or challenges vary such as academic self-efficacy self-regulated learning, career search self- efficacy, computer self-efficacy so on. In this study, the required variables to success e-learning, it includes 1) academic self-efficacy, 2) self-regulated learning, 3) computer self- efficacy.

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# 2 Methods

## 2.1. Participants

In this study, a total of 687 college students in Chungbuk area who were responding to an email and survey monkey that were sent to the learners who had taken at least one web-based e-learning lecture. Table 1 summarizes the participants' demographic information.

**Table 1.** Subject demographic information (*n*=687)

| Variables | | Number of participants (%) | Total |
|---|---|---|---|
| Gender | Male | 332(48.3) | 687 |
| | Female | 355(517) | |
| Grade | Freshman | 233(33.9) | 687 |
| | Sophomore | 159(23.1) | |
| | Junior | 172(25.1) | |
| | Senior | 123(17.9) | |
| E-learning studying time (weekly) | Less than 1 hour | 215(31.3) | 687 |
| | Less than 1-2 hours | 398(57.9) | |
| | Less than 2-3 hours | 57(8.3) | |
| | More than 3 hours | 17(2.5) | |

## 2.2 Survey instrument

The 'e-learning self- efficacy survey instrument' allows e-learners to complete the survey on their behalf. The survey instrument was composed in four categories with 43 questions as follows; 1) academic self-efficacy, 2) self-regulated learning, 3) computer self-efficacy, and 4) e-learning satisfaction.

## 2.3 Data analysis

In order to analyze the relationship between the variables (gender, grade, e-learning studying hours, etc.), this study utilized SPSS/20.0 statistic program, t-test, ANOVA, Pearson co-relation, multiple regression have been implemented.

# 3 Result

## 3.1 E-learning satisfaction by gender

E-learning based on gender analysis of the results shows to the satisfaction of the total personnel in men is almost the same as the% 51.6% women, 48.3% of the learners are.

 

**Table 2.** Satisfaction based on gender

| Gender | Frequency (%) | Mean | SD | t | p |
|---|---|---|---|---|---|
| Male | 332(48.3) | 3.080 | .587 | 1.884 | .060 |
| Female | 355(51.6) | 2.998 | .550 | | |
| Total / Mean | 687(100) | 3.039 | .568 | | |

*p<. 05

### 3.2 E-learning satisfaction by grade

As you look at the table of the grade 3 descriptive statistics of e-learning satisfaction an average 3.22 most as a sophomore with the lowest e-learning satisfaction 2.90, also the average standard deviation.

**Table 3.** Satisfaction based on grade

| Grade | Frequency (%) | Mean | SD | F | *p* |
|---|---|---|---|---|---|
| Freshman | 233(33.9) | 2.95 | .536 | 11.937 | .000 |
| Sophomore | 159(23.1) | 2.90 | .629 | | |
| Junior | 172(25.0) | 3.22 | .534 | | |
| Senior | 123(17.9) | 3.10 | .522 | | |
| Total / Mean | 687(100) | 3.03 | .556. | | |

*p<. 05

### 3.3 E-learning satisfaction of the credit for F

Academic probation due to the presence of a warning results depending on the presence or absence of satisfaction analysis.

**Table 4.** Satisfaction based on academic probation

| Probation status | Frequency (%) | Mean | SD | t | *p* |
|---|---|---|---|---|---|
| Yes | 80(11.6) | 3.039 | .610 | .236 | .627 |
| No | 607(88.3) | 3.038 | .564 | | |
| Total / Mean | 687(100) | 3.038 | .587 | | |

*p<.05

### 3.4 E-learning satisfaction with e-learning studying time (weekly)

E-learning satisfaction, over time, the weekly average assay higher learning e-learning satisfaction appeared to be high time (average = 3.038), only if more than three times the average e-learning is less than 2-3 hours to 3.014.

**Table 5.** Satisfaction based on e-learning course study time (weekly)

| Study time | Frequency (%) | Mean | SD | F | *p* |
|---|---|---|---|---|---|
| Less than 1 hour | 215(31.2) | 2.897 | .0358 | 6.643 | .000 |
| 1-2 hour | 398(57.9) | 3.102 | .0275 | | |
| 2-3 hour | 57(8.29) | 3.127 | .0871 | | |
| More than 3 hours | 17(2.47) | 3.014 | .217 | | |
| Total / Mean | 687(100) | 3.038 | .021 | | |

*p<. 05

### 3.5 E-learning satisfaction by frequency of e-learning access

The e-learning satisfaction average depend on the number of times to access the e-learning website (1time, 2times, 3times, 4times, more than 5 times) was 3.038. As we look at the table 6, more accessing to the e-learning website, higher satisfaction for the e-learning lecture.

**Table 6.** Satisfaction based on number of accessing e-learning course

| Mean of frequency of access | Frequency (%) | Mean | SD | F | *p* |
|---|---|---|---|---|---|
| 1 time | 314(45.7) | 2.884 | .580 | 14.371 | .000 |
| 2 times | 270(39.3) | 3.113 | .5333 | | |
| 3 times | 81(11.7) | 3.261 | .446 | | |
| 4 times | 16(2.32) | 3.488 | .579 | | |
| More than 5 times | 6(.87) | 3.468 | .667 | | |
| Total / Mean | 687(100) | 3.038 | .569 | | |

*p<. 05

### 3.6 Correlation analysis between the variables

The correlation between three variables (self-regulated learning efficacy, academic self-efficacy, computer self-efficacy) was ranged .392-.590. The highest correlation was between academic self-efficacy and computer self-efficacy.

 

**Table 7.** Correlation between variables

| Variables | Self-regulated learning | Academic self-efficacy | Computer self-efficacy | E-learning satisfaction |
|---|---|---|---|---|
| Self-regulated learning | - | | | |
| Academic self-efficacy | .423** | - | | |
| Computer self-efficacy | .392** | .590** | - | |
| E-learning satisfaction | .413** | .486** | .461** | - |

**p<.01

### 3.7 Prediction of satisfaction between self-regulation learning and academic self-efficacy

The efficacy of the independent variable of the regression model and learning e-learning satisfaction and a sense of self-regulated learning showed that (β = .219). There is also a sense of academic self-efficacy results (β = .402) which produces a higher sense of self-efficacy as well as affecting to e-learning satisfaction.

**Table 8.** Regression between self-regulation learning and academic self-efficacy

| | *B* | *SE* | β | *t* | *p* |
|---|---|---|---|---|---|
| (Constant) | 1.289 | .122 | | 10.604 | .000 |
| Self-regulation learning | .242 | .040 | .219 | 6.047 | .000 |
| Academic self-efficacy | .306 | .028 | .402 | 11.101 | .000 |
| $R^2$=.289, F=139.13, p=.000* | | | | | |

.*p<.05

### 3.8 Regression between the variables

As a result, the regression models, F (3, 683) = 108.819, and p showed statistically significant < .05,. In addition, the efficacy of the independent variables the regression model of academic and computer self-efficacy the sense of e-learning, meaningful predictions showed that (β = .257, β = .253).

**Table 9.** Regression between the three variables

| | *B* | *SE* | β | *t* | *p* |
|---|---|---|---|---|---|
| (Constant) | 1.202 | .120 | | 10.054 | .000 |
| Self-regulated learning | .187 | .040 | .169 | 4.653 | .000 |
| Academic self-efficacy | .196 | .033 | .257 | 5.980 | .000 |
| Computer self-efficacy | .195 | .033 | .253 | 5.877 | .000 |

$R^2$=.323, F=108.879, p=.000*

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