

## **An Analysis of University Academic Achievements of Students Based on Gender - Focusing on the Department of Computer Engineering –**

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### ***Abstract***

*The purposes of this study were to measure university academic achievement based on gender. We analyzed university academic achievement based on gender. The subjects for this analysis were 322 students from freshmen to seniors who received grades in their first semester in the computer engineering department at a university located in the Chungcheong area. The major findings of this study were as follows. First, the average university academic achievement was 3.01. Second, the university academic achievement of female students was higher than that of male students in the entire curriculum, liberal arts, and major subjects. Students showed higher academic achievement when their grades rose. Male students showed higher rate of rise when their grades rose compared to female students. This paper proposes that it is necessary to develop programs to further adaption to university life for males. Since male students showed significantly lower university academic achievement, various programs like counseling and mentoring are needed.*

**Keywords:** *university academic achievement, entire curriculum, liberal arts, major subjects*

### **1. Introduction**

The Korean Council for University Education announced that the number of freshmen in 2016 would be 365,309, the number of people entering by regular admission would be 240,425 and the number of student entering by special admission would be 124,884[1].

Education has been important in determining one's socioeconomic status. It is a factor that has been influenced by gender because female students have had higher concentration and participation in their classes.

The Ministry of Education devised a plan to cultivate people of talent in the software field. Through 2017, 40,000 students will study programing and algorithms in software academies. They will be able to think creatively and learn problem-solving abilities.

Therefore, we need to study university academic achievement based on gender.

## 2. Research Method

### 2.1 Study Subject

The subjects for this analysis were 322 students from freshmen to seniors who received grades in their first semester in computer engineering department at a university located in the Chungcheong area(see Table 1).

**Table 1. General Feature**

Category	n	Admission type		Gender	
		Regular	Special	Male	Female
n	322	302	20	264	58

### 2.2 Data Collection

The materials of university academic achievement were for students who received grades in their first semester in computer engineering department at a university located in Chungcheong area. They were given by the admissions department who cooperated for this study by offering the materials.

### 2.3 Data Analysis

A statistics program was used for this study and the statistical significance level was set to 5%. The statistical analysis and t-test was carried out for the analysis of the materials.

## 3. Results and Discussion

### 3.1 University academic achievement

The results from of university academic achievement are found in Table 2. The subjects for this analysis were 322 students who received grades in their first semester in computer engineering department in 2014. The average university academic achievement of the entire curriculum was 3.01, that of major subjects was 3.00 and that of liberal arts was 3.10(see Table 2).

**Table 2. Results from University academic achievement**

Category	Total score (n=322)	Major subjects (n=200)	Liberal arts (n=318)
Mean	3.01	3.00	3.10
Standard Deviation	.78	.80	.84

### 3.2 University academic achievement based on gender

The university academic achievement for students from the first year to the fourth year based on gender is shown in Table 3. For males, the university academic achievement of the entire curriculum was 2.91, that of major subjects was 2.91, and that of liberal arts was 3.00, while for females the entire curriculum was 3.46, that of major subjects was 3.33, and that of liberal arts was 3.61. The university academic achievement for

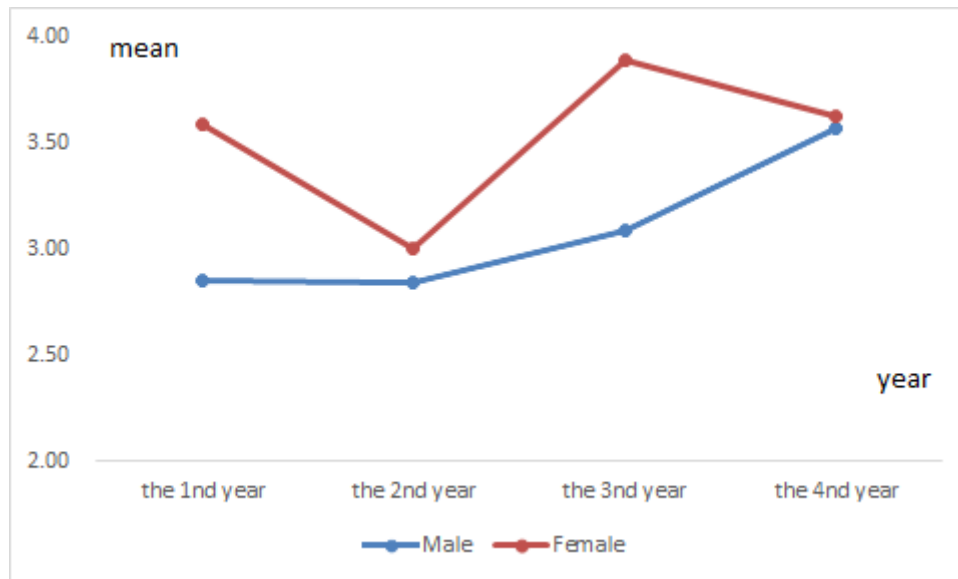
female students was higher than that of male students in the entire curriculum, liberal arts and major subjects(see Table3).

**Table 3. Results from University academic achievement based on gender**

Category	Gender	n	Mean	Standard Deviation	t-test
entire curriculum	Male	264	2.91	.77	-4.998
	Female	58	3.46	.66	
major subjects	Male	160	2.91	.78	-3.002
	Female	40	3.33	.83	
liberal arts	Male	262	3.00	.84	-5.137*
	Female	56	3.61	.65	

\*p<.05

The university academic achievement for students from the first year to the fourth year is shown in Figure 1 and Table 4. For males, the university academic achievement of the entire curriculum of the 1st year was 2.85, while that of the 2nd year was 2.84, that of the 3rd year was 3.09, and that of the 4th year was 3.57. For females, the university academic achievement of the entire curriculum of the 1st year was 3.59, while that of the 2nd year was 3.00, that of the 3rd year was 3.89, and that of the 4th year was 3.62. The university academic achievement of female students was higher than that of male students. Students showed higher academic achievement when their grades were rising. Previous studies showed that the effect on students who had higher academic ability and achievement when their grades were rising was due to increasing self-perception and career maturity[1-5]. As their grades were rising, their university academic achievement increased because they had more time to study and adapt to university situations[3].



**Figure 1. Results from University academic achievement**

**Table 4. Results from University academic achievement based on gender and grades**

Category		n	Mean	Standard Deviation	t-test	
1st year	entire curriculum	Male	107	2.85	.79	-3.512**
		Female	15	3.59	.36	
	major subjects	Male	8	2.69	.70	-
		Female	0	-	-	
	liberal arts	Male	107	2.86	.79	-3.471**
		Female	15	3.59	.36	
2nd year	entire curriculum	Male	95	2.84	.81	-.798
		Female	20	3.00	.68	
	major subjects	Male	90	2.82	.83	.006
		Female	18	2.82	.72	
	liberal arts	Male	95	2.96	.87	-1.399
		Female	20	3.25	.76	
3rd year	entire curriculum	Male	57	3.09	.63	-4.294
		Female	14	3.89	.55	
	major subjects	Male	57	3.03	.68	-3.789
		Female	14	3.81	.73	
	liberal arts	Male	55	3.25	.80	-3.037
		Female	13	3.96	.52	
4th year	entire curriculum	Male	5	3.57	.54	-.166
		Female	9	3.62	.59	
	major subjects	Male	5	3.53	.448	-.339
		Female	8	3.64	.622	
	liberal arts	Male	5	3.80	.83	-.462
		Female	8	3.98	.54	

\*\*p&lt;.01

#### 4. Conclusion and Suggestion

We analyzed the university academic achievement of students from freshmen to seniors who received grades in their first semester in the computer engineering department at a university located in the Chungcheong area.

The research results are summarized below.

First, the average university academic achievement was 3.01. The university academic achievement of

female students(avg. 3.10) was higher than that of male students(avg. 3.00).

Second, for males the university academic achievement of the entire curriculum was 2.91, that of major subjects was 2.91, and that of liberal arts was 3.00, while for females that of the entire curriculum was 3.46, that of major subjects was 3.33, and that of liberal arts was 3.61. The university academic achievement of female students was higher than that of male students in the entire curriculum, liberal arts, and major subjects. For males, the university academic achievement of the entire curriculum in the 1st year was 2.85, that of the 2nd year was 2.84, that of the 3rd year was 3.09, and that of the 4th year was 3.57. For females, the university academic achievement of the entire curriculum of the 1st year was 3.59, while that of the 2nd year was 3.00, that of the 3rd year was 3.89 and that of the 4th year was 3.62. Students showed higher academic achievement when their grades.

This paper proposes that it is necessary to develop programs to further adaptation to university life for males. Since male students showed significantly lower university academic achievement, various programs like counseling and mentoring are needed.

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