

A Study on the Improvement of Students Academic Ability

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Abstract

Based on a survey conducted on 125 students in the Department of Computer Engineering at K University, the following results were obtained by analyzing ways to improve academic ability. Male students should pay more attention to grade points management than female students before completing their military service. Students with high self-assessed academic ability score higher than students with low self-assessed academic ability. As long as students don't spend too much time, a student's part-time job is not an obstacle to their study. Compared to Seoul, Gyeonggi, and Incheon regions, students from Gangwon and other regions should pay special attention to some pre-classes to understand regular university lectures. In undergraduate education, a student's major aptitude is not a big problem. In order to change major, students need counseling about their major's aptitude only at the beginning semester. In order to get good grades, the achievement of the will to study is more important than the will to study itself. Professors should encourage students to review what they have learned in class after class and always assure students sincerity in their studies through the counseling process.

Keywords: *Grade Points, Self-assessed Academic Ability, Major's Aptitude, Review, Counseling*

1. INTRODUCTION

In order to achieve the university education goal of 'cultivating professional manpower with practical expertise to meet a highly industrialized society', the students' faithful academic ability must be supported [1~3]. However, students from diverse backgrounds and dispositions can have differences in their academic abilities[4~5].

All students complete their studies through a nearly uniform curriculum until high school, but when they enter the university, they study according to the curriculum of their major. There may be several differences between education up to high school, which is compulsory education, and education at a university. In university education, various issues such as the burden of education costs, aptitude for the chosen major, military service issues, academic ability, employment and career paths must be considered. Therefore, it is necessary to know how much these problems affect their academic achievement according to each individual situation. By analyzing the extent to which such problems are actually reflected in the grades acquired by university students, the results can be used as specific data for college guidance and counseling for university students to improve their academic abilities.

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Therefore, in this study, through a survey, we analyze students' academic achievement according to their gender, region, academic ability, academic will, aptitude, amount of review after class, employment, advancement mindset and find the way to improve students academic ability[6~17].

The improvement of students' academic ability is directly related to the development of society as a whole and the creation of benefits through improvement of social and national productivity[18~19]. Individual and accurate guidance for improving the academic ability of various students will be the responsibility of the educator and the reason for its existence. This study was conducted to provide basic data for this purpose.

2. RESEARCH METHOD

Through this research we analyzed ways to improve academic ability based on a survey conducted on 125 students in the Department of Computer Engineering at K University.

Each question of the survey is composed of gender, region, review hours after class, part-time work hours, academic willingness, motivation to improve grades, cause of grade drop, financial support from family, aptitude for major, and willingness for finding a job. The questionnaire was filled out according to the self-evaluation method that the students fill out themselves. With the exception of some questionnaire items, most of the questionnaire items were classified into a five-step(very high, high, middle, low, very low) response scale. The results of each student's responses were analyzed by linking them with the average grade points for each semester of all students by response scale.

3. RESULTS AND DISCUSSION

3.1 Average grade in each semester of male and female students

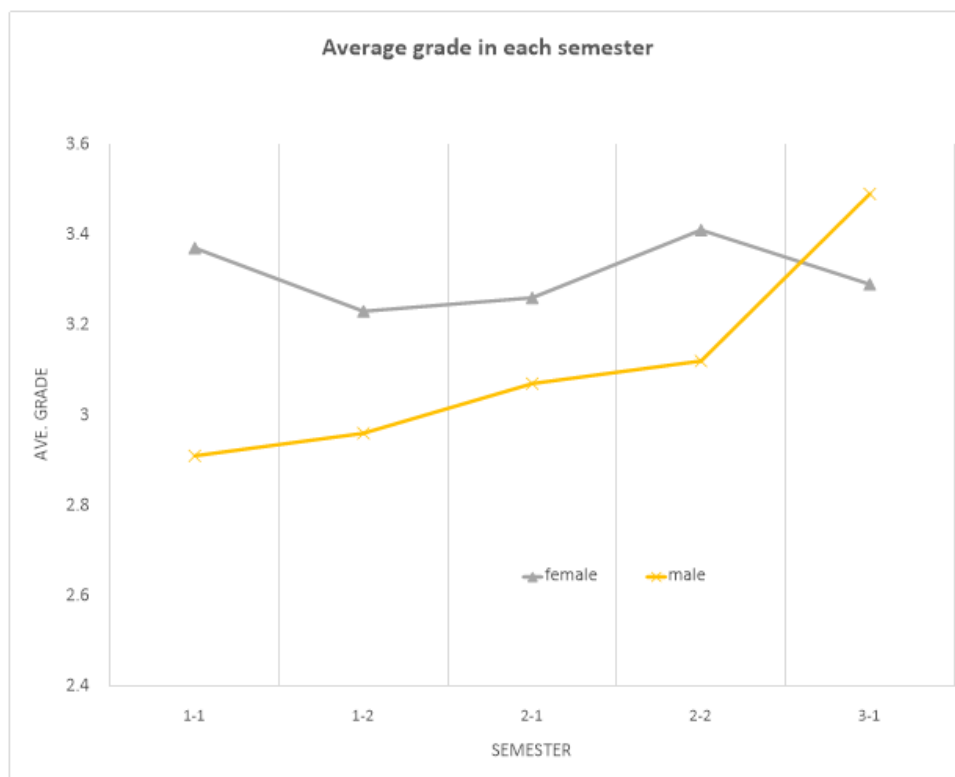


Figure 1. Average grade in each semester of male and female students

In each semester male and female students acquired the average grade as shown in Figure 1. At the beginning the average grade of male students is lower than female students but becomes better gradually as semesters. At the first semester 1-1 the average grade of male students is 2.91 that is lower than the average grade 3.37 of female students. However, in the fifth semester 3-1 the grade of male students is 3.49 that is higher than the average grade 3.29 of female students. This results means that the male students study harder and harder with semesters compared to female students. The average grade of female students does not show any particular change in the range of 3.23 ~ 3.41 at each semester.

3.2 The average grade according to students academic ability

Figure 2 shows the average grade of the students according to self-assessed academic level. In high and middle level the grade range is 3.11 ~ 3.95. However in low and very low level the grade range is 2.57 ~ 3.45. This results shows that the students having higher self-assessed academic ability acquire the higher grade than the students having lower self-assessed academic ability. Also, this results implies that self confidence of academic ability is necessary in order to acquire the better grade.

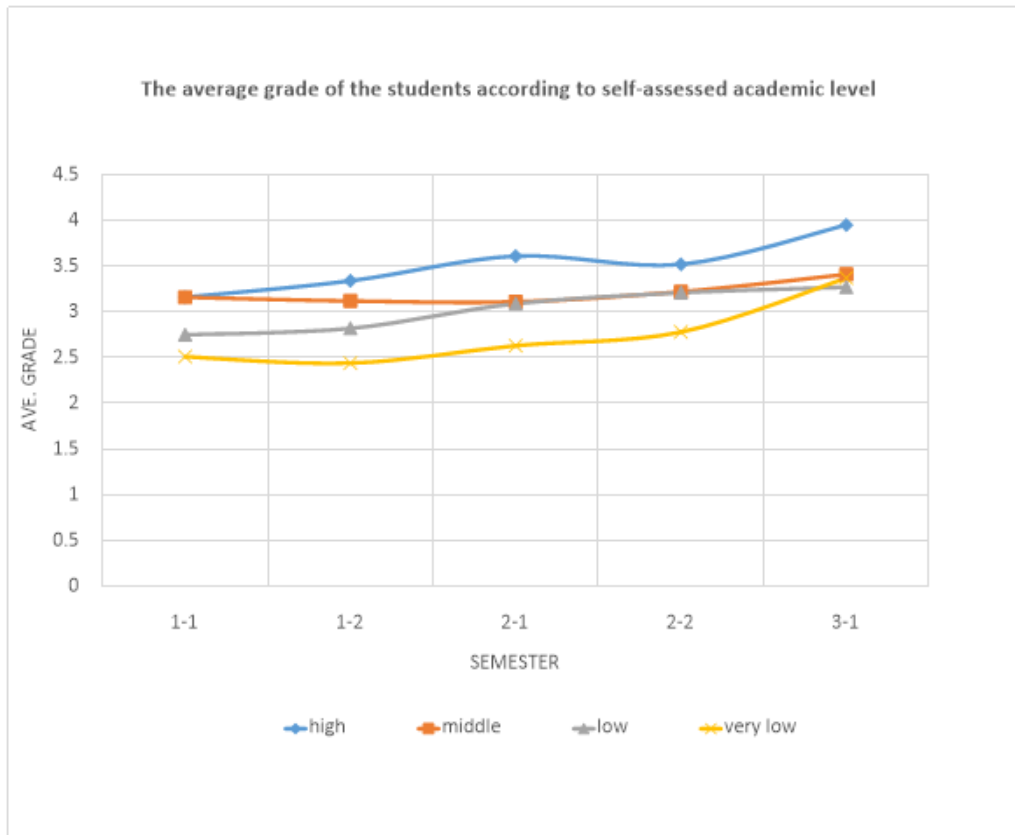


Figure 2. Average grade of the students according to self-assessed academic level

Figure 3 shows the average grade of the students according to the initial academic level. In comparison with self-assessed academic level the average grade lies in the range of 2.46 ~ 3.62 but do not show a special grade difference among each levels. This may indicate that the initial academic ability does not affect the students academic grade in university education.

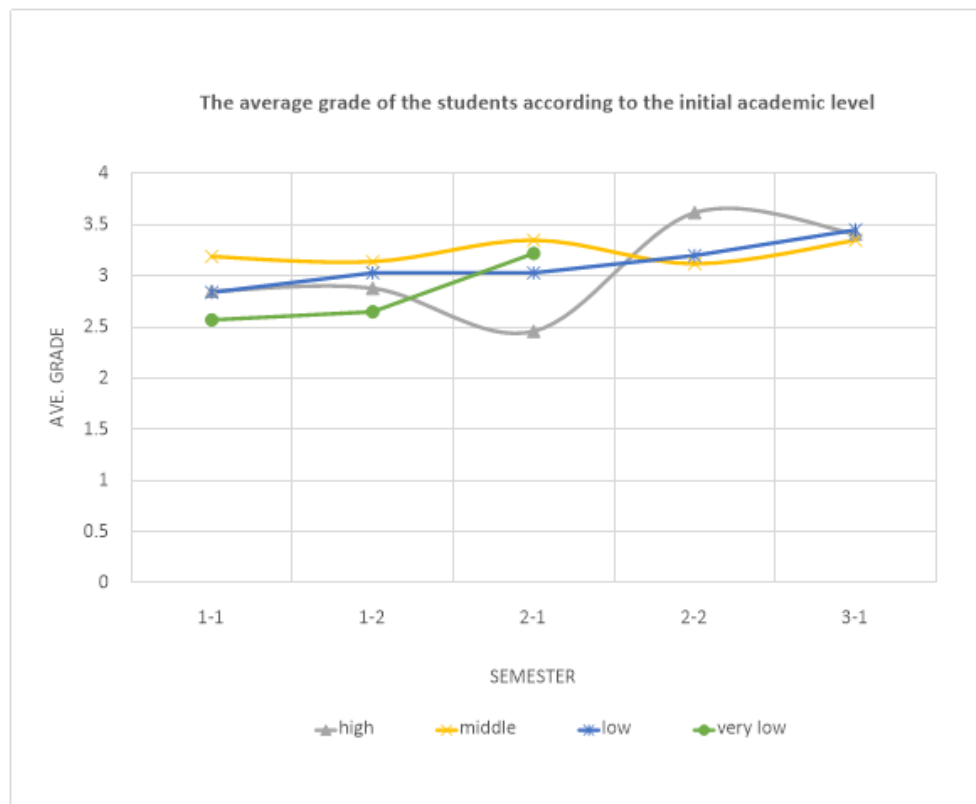


Figure 3. Average grade of the students according to the initial academic level

3.3 Average grade according to part-time work

The effect of part-time work hours a day on students average grade is shown in Figure 4. The students who do not work acquire the better grade on the whole compared to the students who do work. However, in higher semester above the semester 2-1 both students do not big difference regardless of work hours (0 ~ over 4 hours) in their average grade range (3.21 ~ 3.45). This result indicates that daily part-time work affects students' average grade in earlier semesters (1-1 ~ 2-1) in university but does not in later semesters (2-2 ~ 3-1). Therefore, at the beginning of university study it may be recommended that students must take care of the balance in study and part-time work.

Figure 5 shows the effect of part-time work days a week on the grade points of students. In semesters 1-1 ~ 2-1, this result indicates that 5 ~ 6 work days a week obviously let the average grade points fall down compared to 3 ~ 4 or 1 ~ 2 work days. Although there is no data on semesters 2-2 and 2-3 of 5 ~ 6 work days, it may be considered that 5 ~ 6 work days a week is too much to acquire good grade in university study. However, 2 ~ 3 or 3 ~ 4 work days does not affect the average grade of students as shown in the case of no work hours of Figure 4. Therefore, students' part-time work is not any obstacle to improve the grades unless spending too much time.

3.4 Family financial support and average grade

Figure 6 shows how family financial support affects the grade points. In Figure 6, the level of family financial support has nothing to do with overall average grade points of students. However, there are some fluctuations in the grade as the semester changes in low and very low family financial support. Such fluctuations in the grade mean that financially unstable support from family may be an obstacle for stable study of students. In other

words insufficient family financial support is not a big problem in acquiring grade points but may result in study of students unstable in some case.

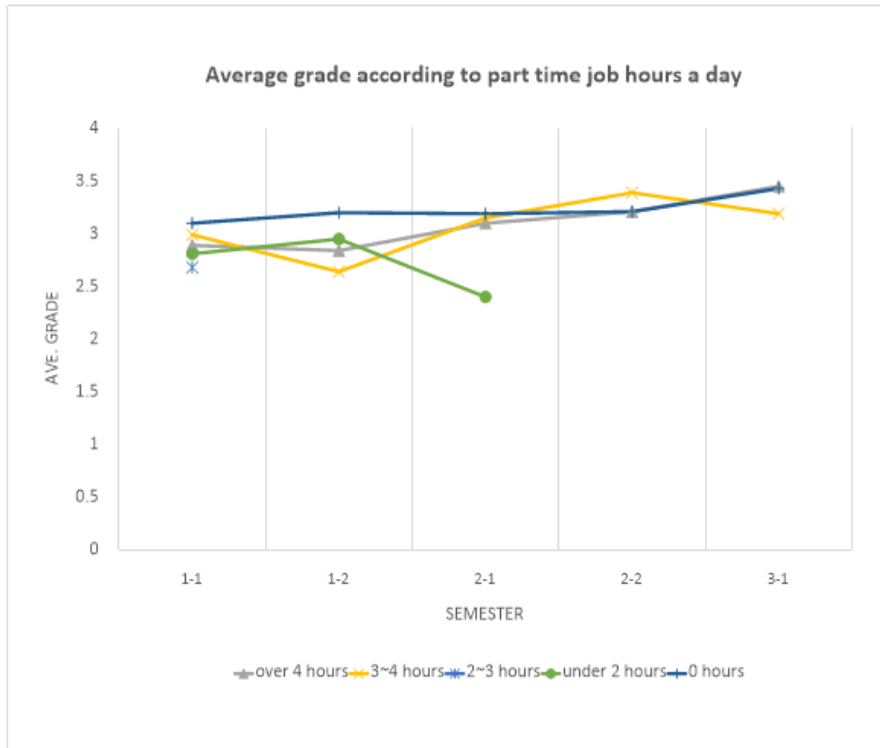


Figure 4. The effect of part-time work hours a day on average grade of students

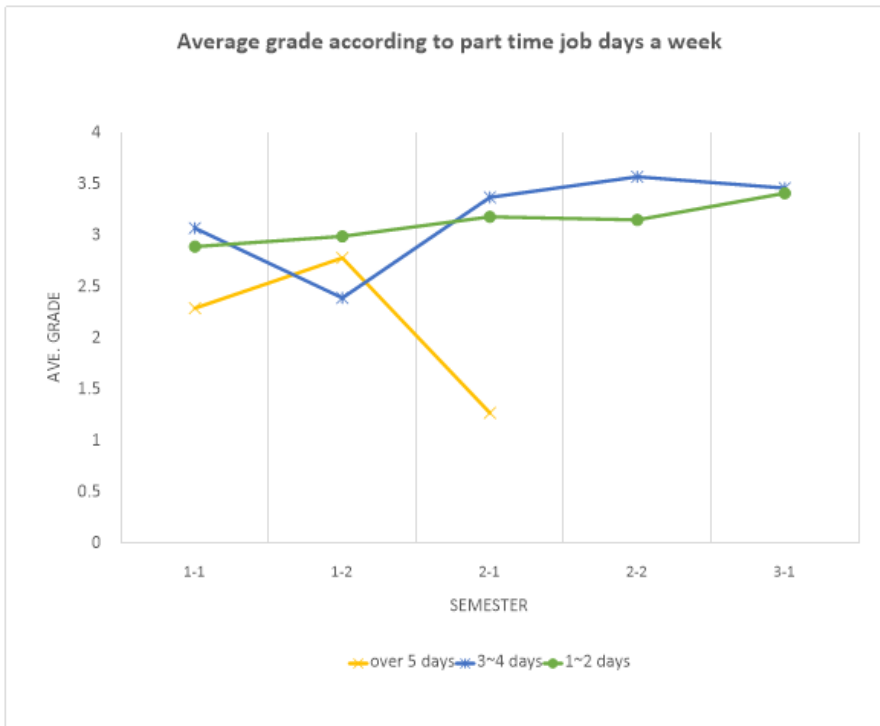


Figure 5. The effect of part-time work days a week on students average grade

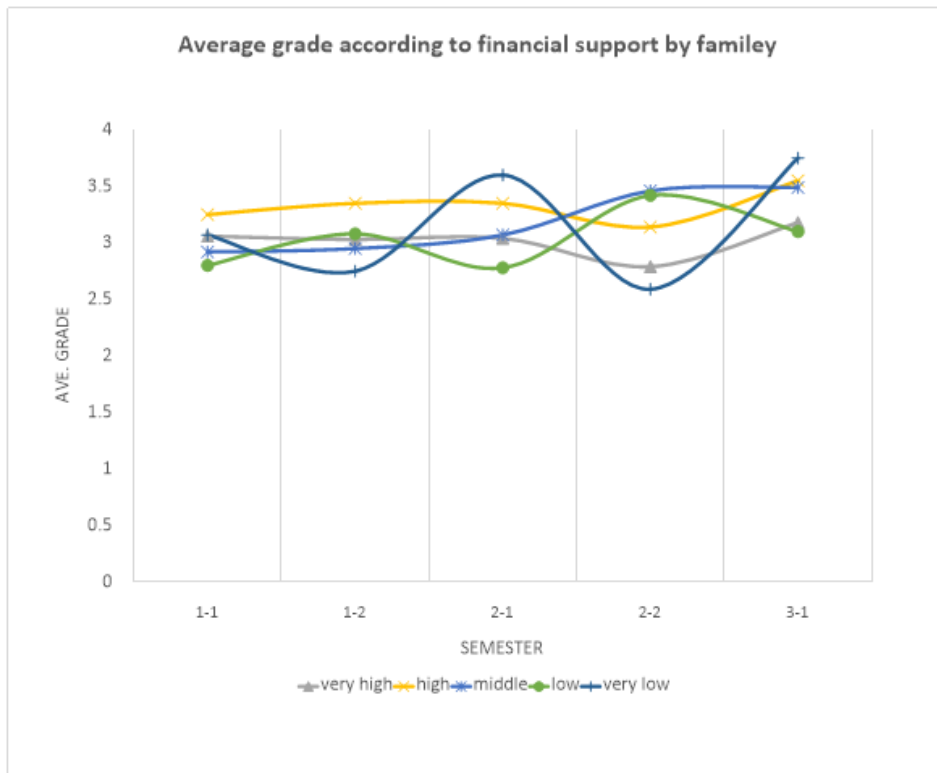


Figure 6. Family financial support and average grade

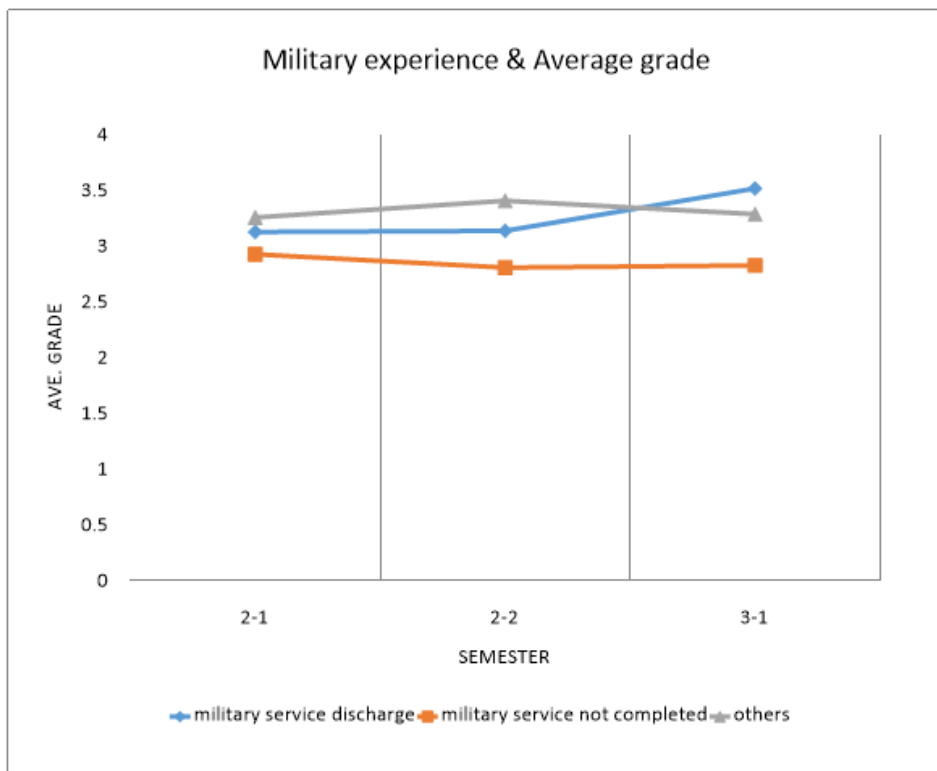


Figure 7. Military experience and average grade

3.5 Military experience and average grade

Figure 7 shows the relation of military experience with average grade points of students. This results indicate that military experience helps the students achieve the better grade points. The military experience students aquired average grades 3.13 ~ 3.52 compared to the average grades 2.81 ~ 2.93 of the group of military service not completed. However others including female students without any obligation for the military service aquired the average grade 3.26 ~ 3.29 similar to the average grade of students having military experience. This result means that in male students the military experience helps a lot to aquire the higher grade points. It is considered that military experience change the life style of students and enhances the study willingness and sincerity. Therefore earlier military service for male students may be recommended to change the attitude of insincere students for university study.

3.6 Average grades of students by region

Figure 8 shows average grades by region of students. Seoul, Gyeonggi and Incheon region students aquired the average grades 2.98 ~ 4.29 without any big difference to each others. However Gangwon and other region students aquired the average grade 1.67 ~ 2.83 that is quite low compared to Seoul, Gyeonggi and Incheon region students. The reason for that may be due to low academic ability of Gangwon and other region students under poor educational atmosphere of local society. Hence it is recommended that Gangwon and other region students take special care in some preclass to follow regular university classes without any difficulty to understand the lectures.

3.7 Average grade by aptitude

Figure 9 shows the relation of average grade with major aptitude of students. Overall average grade for all level does not have any significant feature except for very low level. The average grade of low level in semesters 1-1 ~ 2-2 is within 2.43 to 2.87. In spite of such low average grade their average grade in semester 3-1 is similar to other level. From this results two points must be considered to consult the students about their major aptitude. First is that earlier counseling is necessary to give the better chance to change major of students. Second is that the students should have more confidence to keep their major. Except for special case major aptitude does not cause any big difficulty in undergraduate school. Therefore the major aptitude is not a big issue in general once advisory counseling may help the students solve the difficulty in their academic aptitude.

3.8 Academic willingness and average grades

Figure 10 shows the grade points according to academic willingness. in the high and middle level of academic willingness the average grade is in range 2.93 ~ 3.75 at each semesters. However the grade points is lower in very high and very low level compared to other level. Especially in very high level the low grade points except for semester 3-1 means that academic willingness itself is not always related with good grade points. In other words the more important factor can be performance level for academic willingness to aquire good grade.

Figure 11 is the grade points according to the performance level of academic willingness. The overall grade according to the performance level follows with the level in turn from top to bottom. In very high level the grade of semester 2-2 show abnormal grade points 2.59 that is not understood. Except for this case in general the most important thing to get good grade points is to perform the academic willingness more than academic willingness itself.

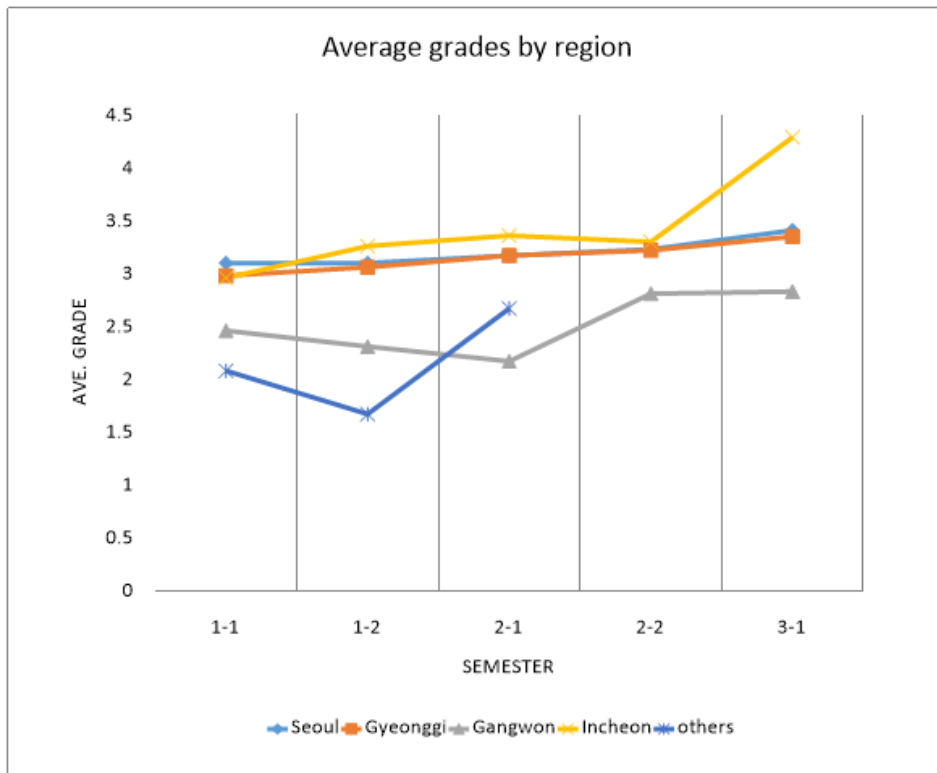


Figure 8. Average grades by region of students

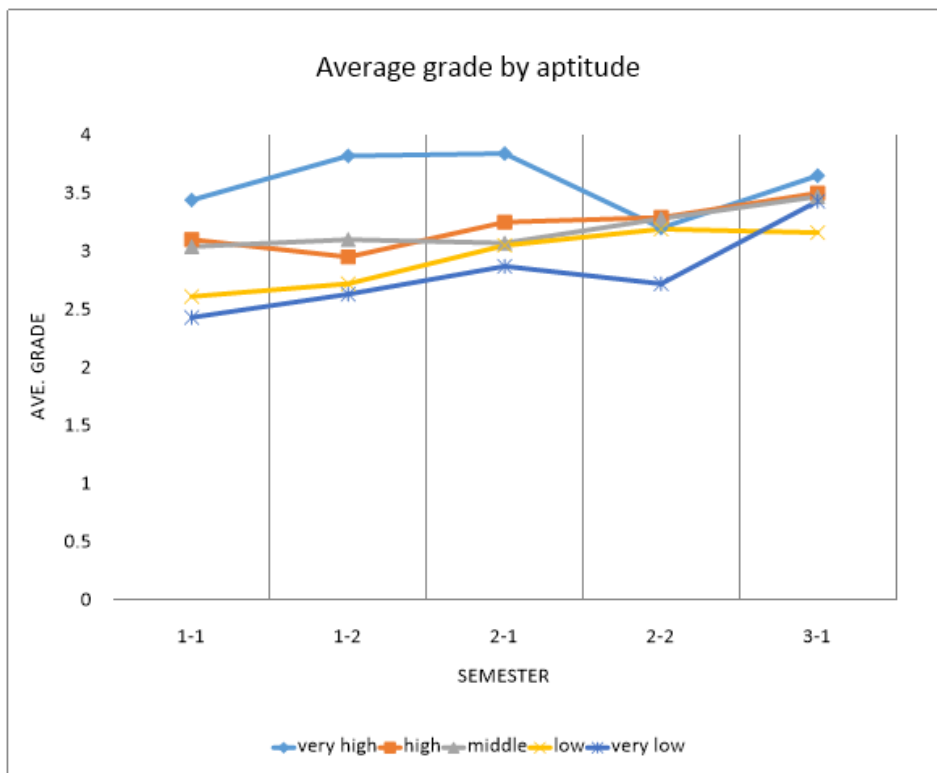


Figure 9. The relation of average grade with major aptitude of students

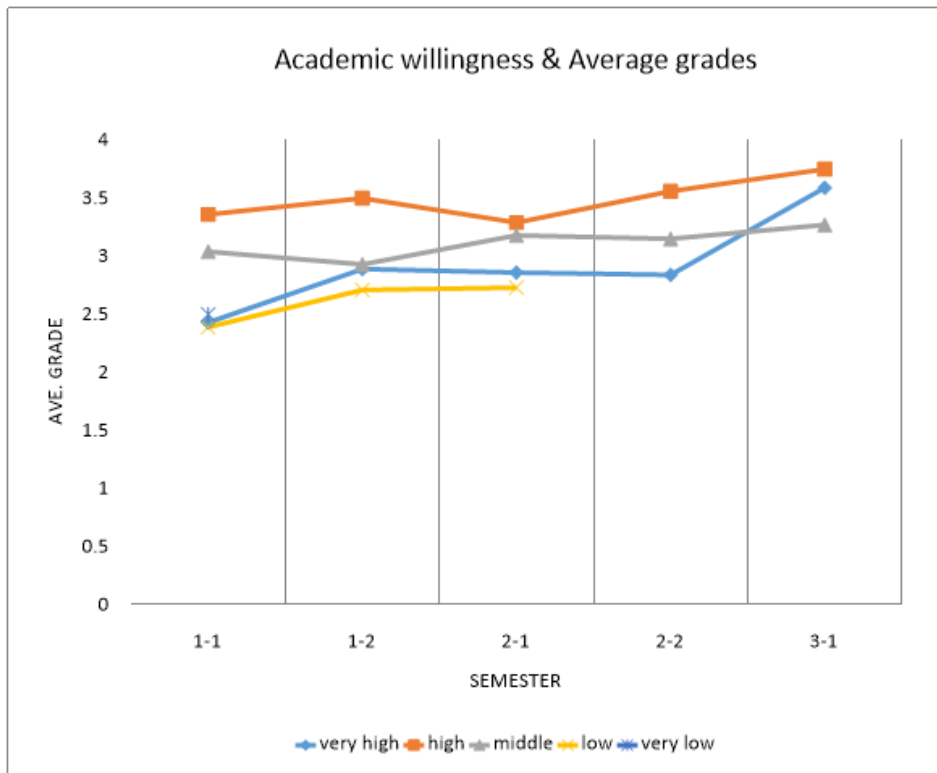


Figure 10. the grade points according to academic willingness

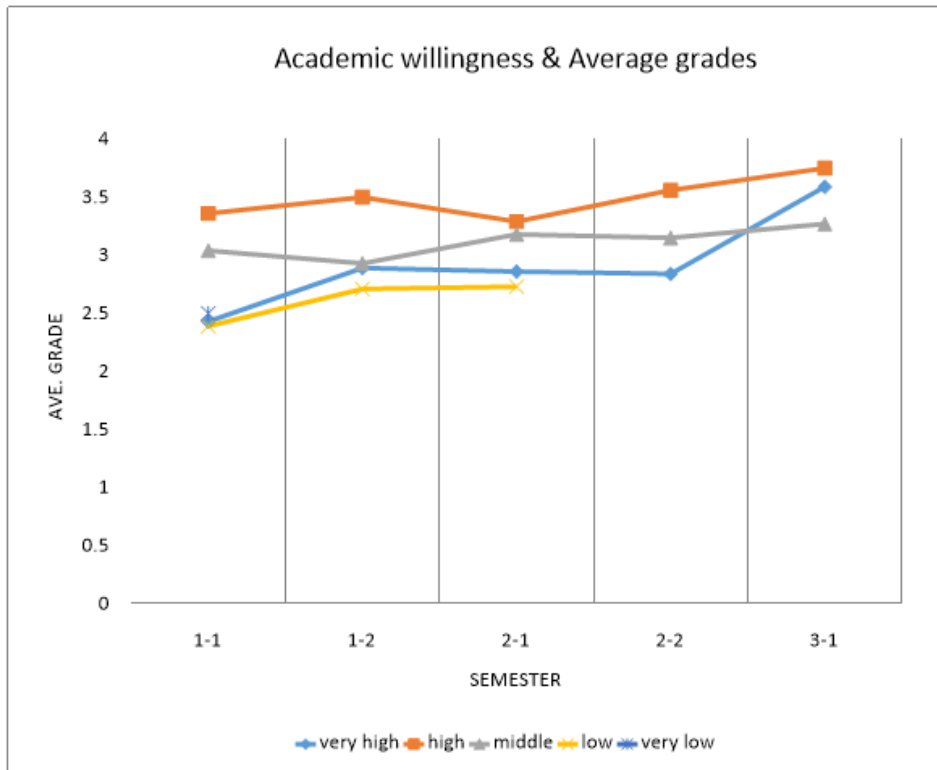


Figure 11. the grade points according to the performance level of academic willingness

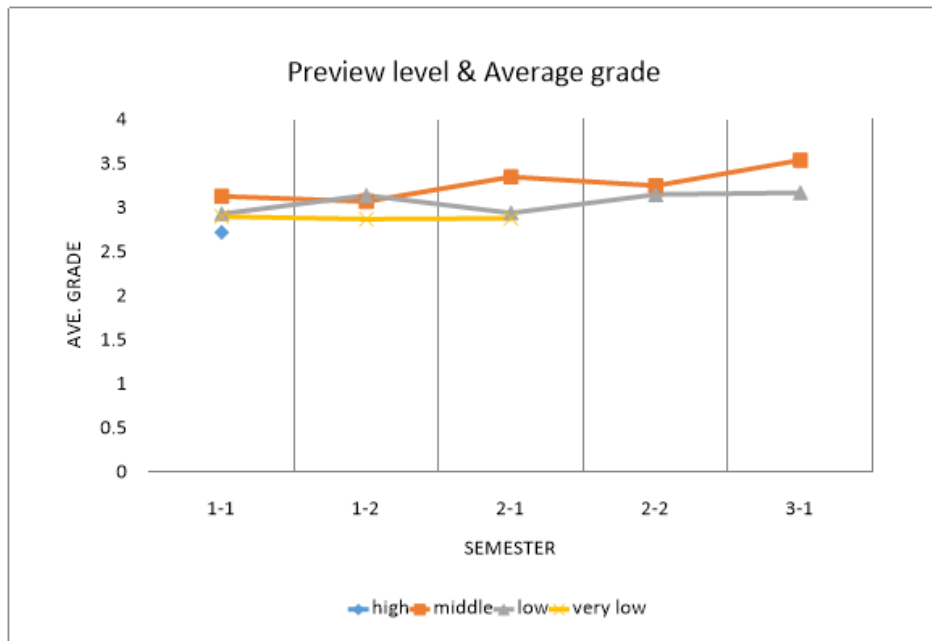


Figure 12. the grade points according to the preview level

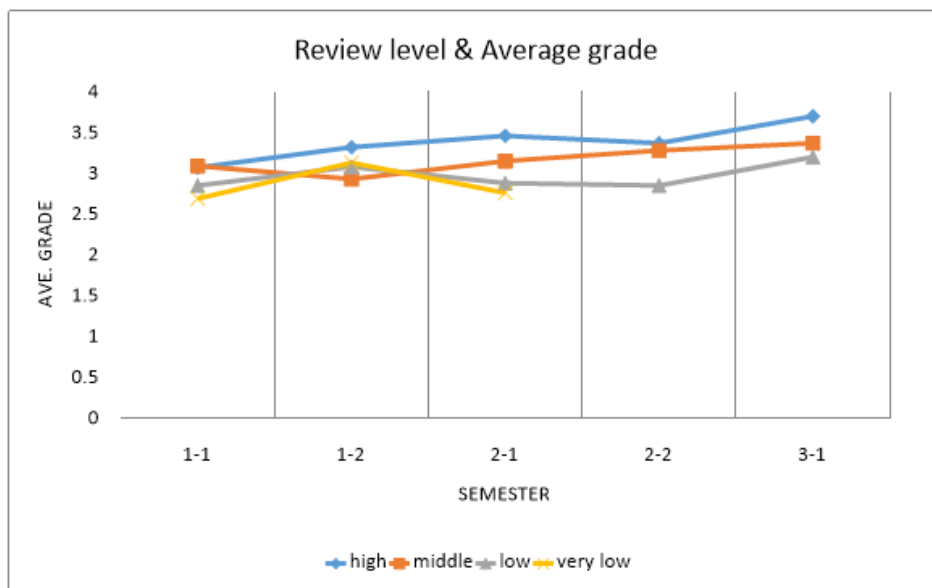


Figure 13. The grade points according to the review level

3.9 The grade points according to the preview level

Figure 12 shows the grade points according to the preview before class. In Figure 12 it is seen that the preview level is not an important factor in the grade points. Although there may be a little fluctuation of the grade points as semester changes, overall grade values of all levels do not show a big difference to each other. However, as expected, in the very low level the grade points are the lowest.

3.10 The grade points according to the review after class

Figure 13 shows the grade points according to the review after class. the grade points follow well with the review level after class. After all, this result say that the most important factor to improve academic grade points is to review well after class. Therefore it is necessary that professors let the students review their study in class after class. Proper homework and problems related to class can be a good method to let the students review after class.

3.11 The main factors behind the decline and rise of grades

Figure 14 shows the distribution of main factors behind the rise of the students grade. Among the factors ‘increased willingness to study voluntarily’ is the greatestist factor with 59% in portion. The next factor is ‘rising interest in major’ that takes 23% in portion. The other factors as shown in Figure 14 do not have any significant feature. To improve the academic grades, therefore, professors must let the willingness of volluntary study increase by giving a proper motivation to the students through counseling process. Also, rising interest in major can be increased as well by the same counseling process.

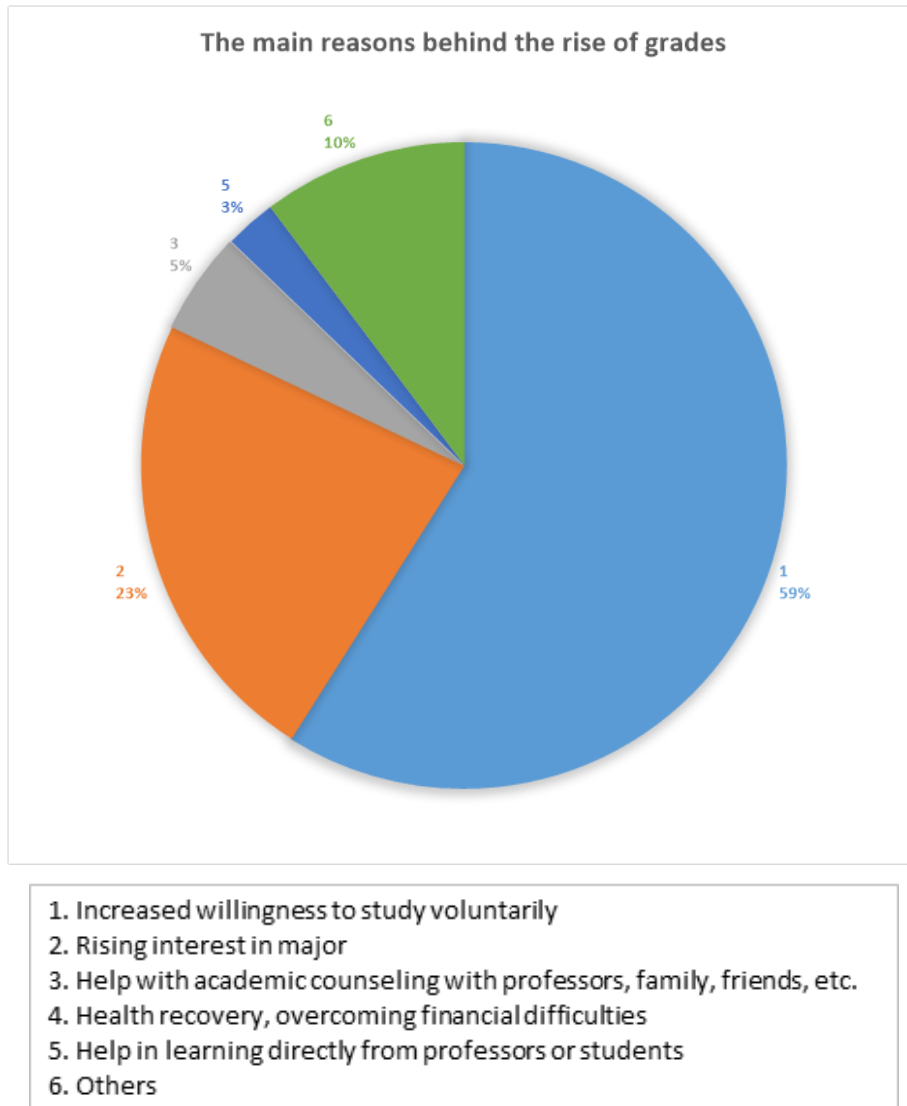


Figure 14. The distribution of main factors behind the rise of grade points

Figure 15 shows the distribution of main factors behind the decline of grade points. Among the factors 'insincerity towards school work' is the first great factor with 50% in portion. The second factor is 'poor academic ability' that takes 28% in portion. The third factor is 'lack of time'. The other factors as shown in Figure 15 do not take any significant portion. Above all, therefore professors must always check the sincerity of the students towards school work and lead them to the right way through counseling process. Also, because 'poor academic ability' takes quite big portion it is needed that professors give the easier lectures to the students in the beginning and push it up to normal level later. 'The lack of time' may be related with part-time work. In earlier analysis too much part-time work was a main reason of low grade points. Therefore to focus on the school work professors must advise the students to do not do too much work or extra activity and keep some sufficient study hours.

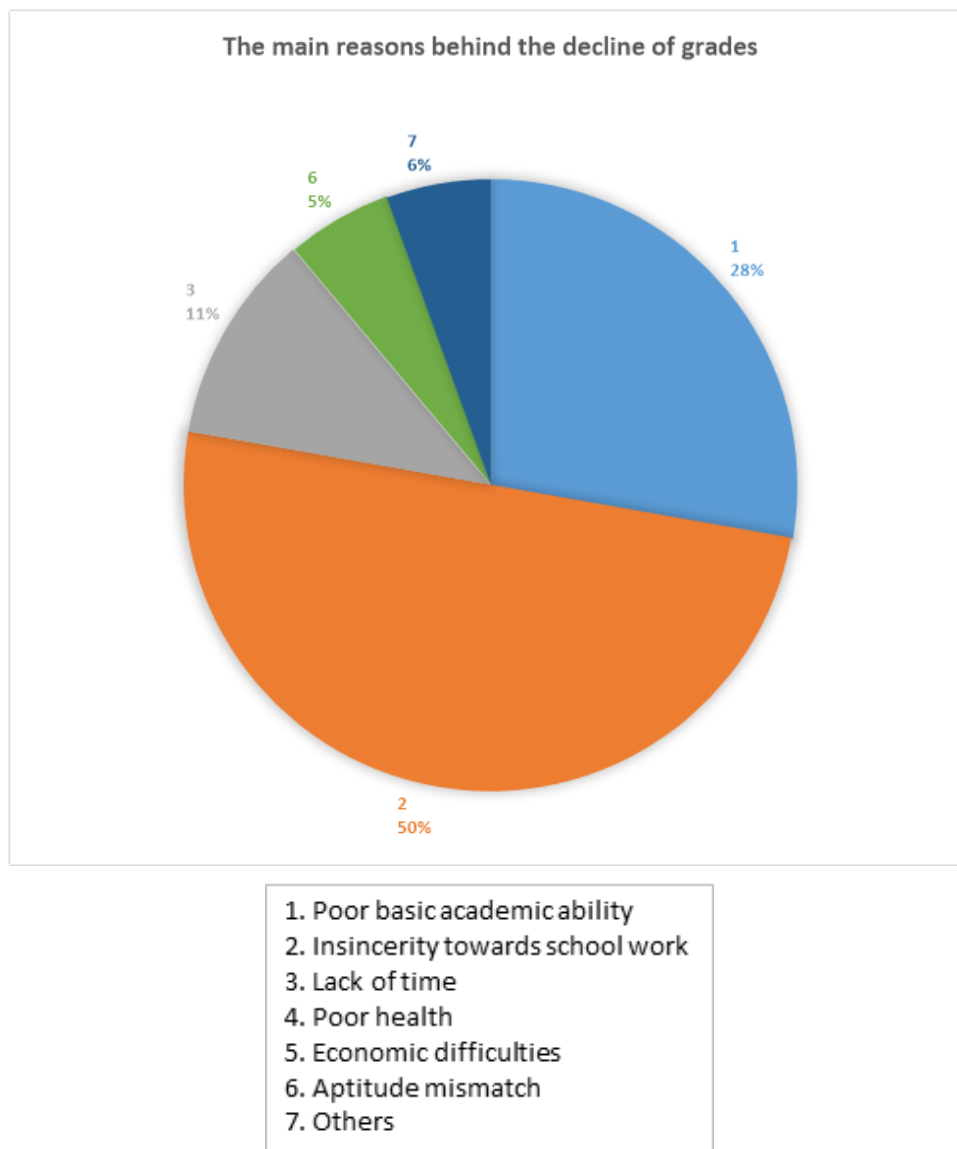


Figure 15. The distribution of main factors behind the decline of grade points

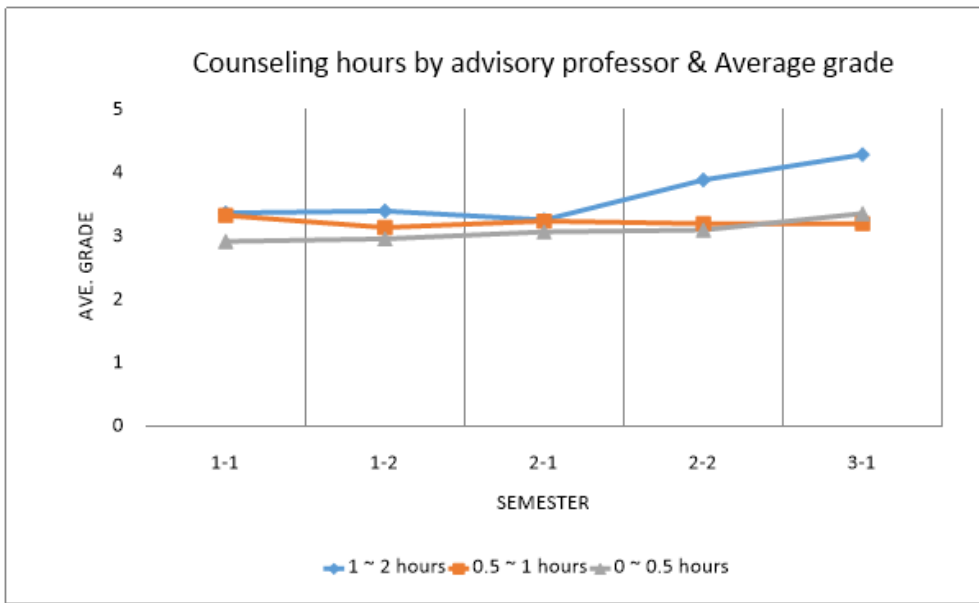


Figure 16. The grade points of students according to counseling hours

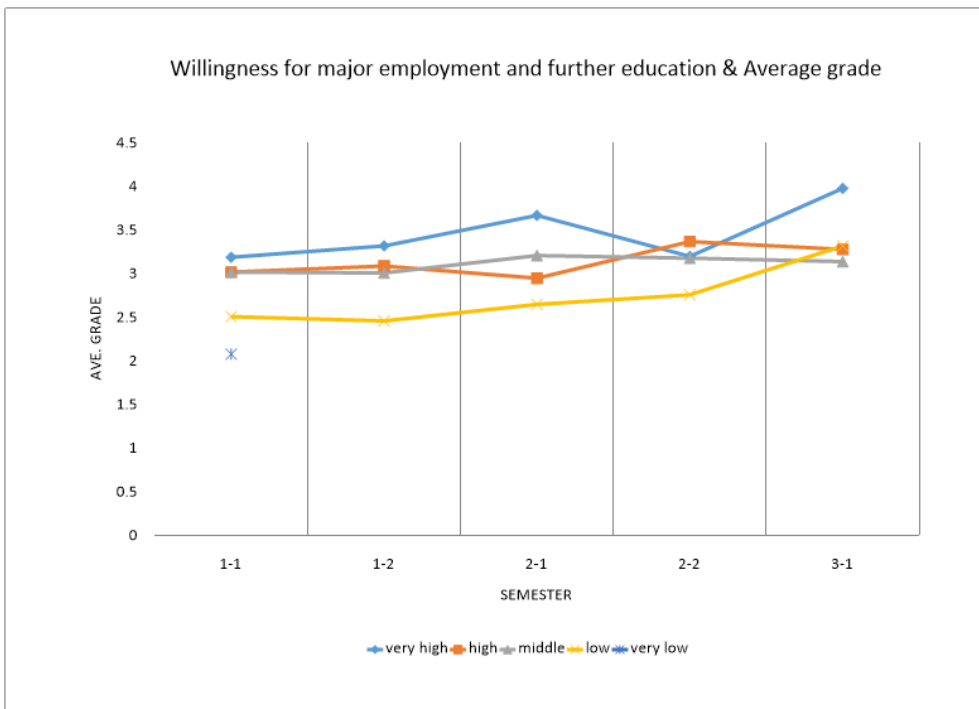


Figure 17. The grade points of students according to willingness for major employment and further education

3.12 Counseling guidance hours and grade points

Figure 16 shows the grade points of students according to counseling hours by advisory professor. In each semester the total counseling hours is within 0 ~ 2 hours for individual students. Although the counseling hours in general do not show any significant difference in the grade points as seen in Fig 16 the more counseling hours help the students acquire a little better grade points. Especially in semesters 2-2 and 3-1 the grade points

of 1 ~ 2 counseling hours show some clearly the better grades compared to 0 ~ 1 counseling hours. This tells that professor counseling is more necessary for the senior students.

3.13 Willingness for major employment and further education

Figure 17 shows the grade points of students according to willingness for major employment and further education. In this Figure 17 it is easily seen that the grade points in the higher level are higher compared to the lower level. This results mean that the students having clear goals such as finding job in major or entering graduate school acquire the better grades. Therefore professors must advise the students to have clear goals to finish their school work more successfully. The major job finding and the graduate school can be good topics in counseling for students.

4. CONCLUSION

In this research it is concluded that a few things should be considered for improving students academic ability and acquiring good grade points as follows.

The first is that male students before completing military service must take special care of the grade points more than female students. Female students show a stable academic achievements through all semesters. However male students show unstable school works that can be due to military service not completed. After completing military service male students acquire the better grade points and stable school work.

The second is that the students having higher self-assessed academic ability acquire the higher grade than the students having the lower self-assessed academic ability. This results mean that improving self confidence of academic ability is necessary in order to acquire the better grade. However the initial academic ability does not affect the students academic grade in university education.

The third is that students part time work is not any obstacle to improve the grades unless spending too much time. At the beginning of university study it is recommended that students must keep the balance in study and part time work.

The fourth is that Gangwon and other regional students compared to Seoul, Gyeonggi and Incheon area must take special care in some preclass to follow regular university classes without any difficulty to understand the lectures.

The fourth is that major aptitude of the students does not cause any big problems in undergraduate education. Only at the beginning stage of university study the advisory counseling about major aptitude is necessary to change the students major.

The fifth is that academic willingness itself is not always related with good grade points. The more important factor is performance level for academic willingness to acquire good grade.

The sixth is that the grade points follow well with the review level after class. Therefore it is necessary that professors let the students review their study in class after class. Proper homework and problems related to class can be a good method to let the students review after class.

The seventh is that professors must let the willingness of voluntary study increase by giving a proper motivation to the students through counseling process. Also, professors must always check the sincerity of the students towards school work and lead them to the right way through counseling process.

After all the key point is that military service problem, self confidence, performance level for academic willingness, review after class and sincerity of the students towards school work must be included in advisory counseling to improve students academic ability.

ACKNOWLEDGEMENT

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