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LEARNING MOTIVATION AND STUDY ENGAGEMENT: DO THEY CORRELATE WITH GPA? AN EVIDENCE FROM INDONESIAN UNIVERSITY

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ABSTRACT

Academic result for Information System students during the first year shows that average GPA for the first semester is 2.1. 47% of the first year students have GPA less than 2.0 and 17.6% have GPA less than 0.5. This problem is faced by the department of Information Systems, Faculty of Information Technology, Duta Wacana Christian University. This problem becomes a concern for faculty members and Information System department head.

In this study, some factors that influence the student motivation and its correlation to GPA is conducted. 315 students are the subject of this study. 92 students are taken as a sample. This study implements clustered sampling from different grade (21 first year students, 34 second year students, 37 third year students). From GPA perspective (scale 4), 38 students have GPA higher than 3.25, 35 students have GPA between 2.5 to 3.25, and 19 students have GPA less than 2.5. Some questions are given to sampling students to discover some factors affecting student motivation and how students spend times outside the campus.

This study finds that students have willingness to increase their GPA (9.2 out of 10). But this willingness are not supported with student's motivation to do the assignment (6.8 out of 10) and prepare the exams (7.6 out of 10). This study also finds that there is a positive correlation between GPA and academic motivation. There is no significant difference motivation among students who have low, medium, and high GPA, except in preparing exams.

Keywords: Student Motivation, Student Engagement, GPA, Information Systems.

INTRODUCTION:

Bahji, et. al. (2013) reported that in emerging countries, there is a decreasing student's motivation to participate learning activity in the classroom. There are some factors that influence findings:

1. The development of Information Technology.
2. The usage of Information Technology in Indonesia.
3. The usage of internet as a learning media tools.

The decrease in student's motivation is also faced by some universities in Indonesia, especially in Department of Information Systems at Duta Wacana Christian University. Starting from 2012, Information Systems Department has been facing this problem. Figure 1 shows the declining GPA in Information Systems Department.

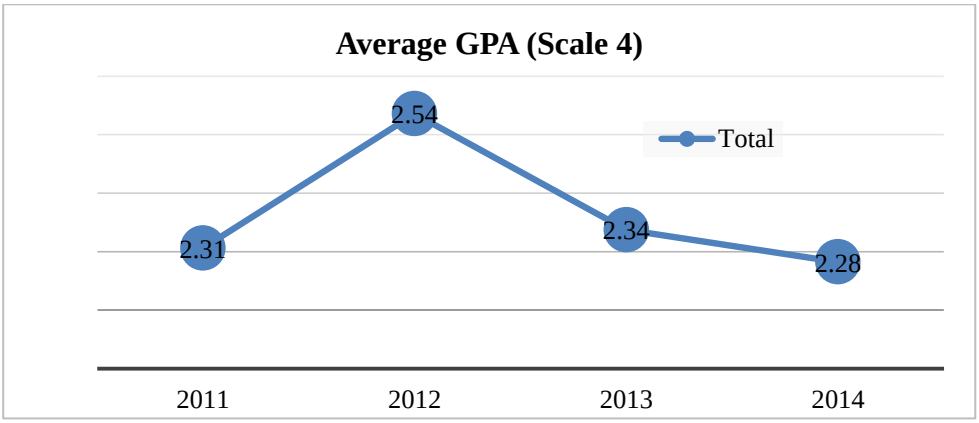

Figure 1: Average GPA for every students

From figure 1, it is shown that there is a significant decline of GPA in every year. In 2012, student's GPA is 2.536 whereasin 2013, Information Systems students have an average of 2.337. And in 2014, Information Systems students have an average of 2.282. And from figure 2, it is reported that students who have GPA between 1 and 2 is increasing. It means that students face problems with their study.

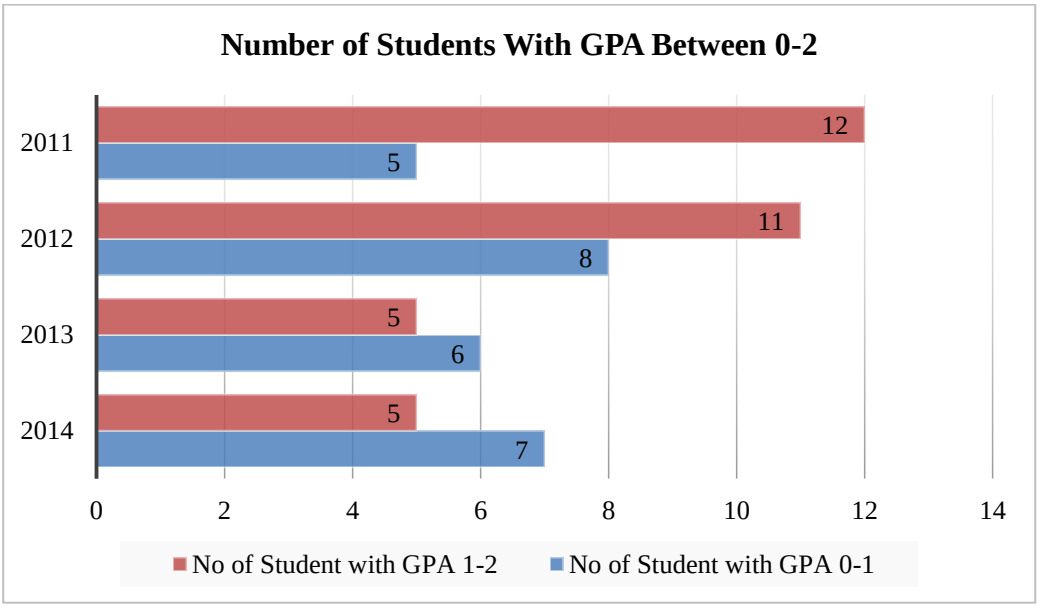

Figure 2: Number of Students with GPA between 0 - 2

Based on those problems, it is an interesting topic to conduct research in student's motivation, especially in Information Systems Department. Researchers have three research questions, as follows:

1. To acknowledge students' motivation level in Information Systems Department
2. To find correlation between students' motivation and students achievement, especially GPA.

3. To study the relationship between students' engagement in learning process and students' academic achievement.

LITERATURE REVIEW:

Academic achievement is one tool to measure students' academic performance. Based on Center for Research and Development Academic Achievement (CRIRES) (2005) report, academic achievement is a construct to measure student's achievementabout knowledge and skills based on student's age, student's previous experience, and each student capacity related to social, education, and qualification. To measure the academic achievement, educators use different kind of assessment. Assessment is a continuous process that bring some valuable information about learning process (Linn and Gronlund, 1995). Hargis (2003) commented that thegrading are supposed to be motivating and to provide goals to strive for. In other hand, it can give more possibilities to the students to cheat. Combination between score and standard achievement process provides two set of data refers to students achievements. (Haladyna, 1999).

Learning is a process that can bring some changes in human knowledge and behavior, including social, psychology, and other kind of changes (Bahji, et. al., 2013). There are some factors that influence the learning effect. Motivation and engagement are two of factors that influence the process and its result. There is shifting paradigm in learning, from teacher oriented to student oriented. Student oriented paradigm needs higher student motivation than teacher oriented. It needs higher student motivation because motivation is related with competences and relationship with others (Ryan and Deci, 2000).

Motivation is also related with personnel factors, social variable, human thought, and human belief (Steadward, et. al., 2003). So, learning motivation is a kind of individual investment in learning process. Motivation is also related with enthusiasm to do something to be able to bring significant process for specific actions. Zimmerman, et. al. (2014), tells that motivation also related with internal factors that influence, guide, and maintain students to gain specific outcome.

There are two kinds of motivation: (1) Intrinsic motivation; (2) Extrinsic Motivation. Deci and Moller (2005) gives a brief explanation related with this two kind of motivation. Intrinsic motivation comes from internal and extrinsic comes from external. Students will contribute and participate in the learning process if they have intrinsic motivation that helps them to adapt with teachers and subjects. Intrinsic motivation also helps students to behave according to their interest during studying time (Hashmi and Shaikh, 2011).

Trevino and Stacie (2014) reportedthat to increase the intrinsic motivation, some tasks should be done: (1) Positive feedback to students; (2) Parents participation to the students learning; (3) Parents should encourage their children to gain the best academic result; (4) Focus in learning; (5) Actively participate in discussion and learning in the classroom.

Lynch (2006) discussed that external motivation comes from third party rewards to students. This kind of motivation can be a form of reward, gift, and score. To gain this reward, students will try hard. Ryan and Deci (2000) implemented self-determination theory with self-regulation to raise student's self-motivation. Williams and Williams (2011) reported that there are 5 (five) factors that are related with students motivation: (1) Students; (2) Teachers; (3) Subject and Materials; (4) Studying atmosphere; (5) Teaching method.

Students engagement is seen as an arrangement for the students to do something in particular time. It refers to a commitment that converts the motivation into actions. Engagement can be related to efforts, concentration, and verbal contribution in the classroom (Kennedy, 2010). There are two kind of student engagements in the classroom such as emotional engagement and cognitive engagement. Emotional engagement is students' interest, happiness, attractiveness, curiosity, and ownership of something. Cognitive engagement relates to students motivation, either intrinsic or extrinsic, which encourage the achievement of teachers goals in the classroom. Some activities performed by teacher, can help increase the student motivation level : (1). Incorporate possible student anxiety concern; (2) Speak with your students; (3) Choose your vocabulary and tone carefully; (4) Stress the positives of online course; (5) Have resource and contact info at the ready; (6) speak with students.

Brogt and Corner (2013) did the comparative education research between United States and New Zealand University student's engagement scores as measured by Australasian Survey of Student Engagement (AUSSE) and US National Survey of Students Engagement (NSSE). In this study, the researchers found that many items on the NSSE / AUSSE that load on the different engagement scales are biased towards the US Educational and Cultural context, which is no surprise since the instrument was developed in United States. They also reported that student assessment is more spread out over the semester in the United States than in New Zealand, partly owing to longer semesters or more weeks of study in the academic years and partly attributable to a greater emphasis on continuous assessment in the United States.

Brogt and Corner (2013) also found that students in New Zealand have more time to do the written assignment when comparedwith students in United States. This is the effect of the education structure in United States and New Zealand. As the result, there are some points to be noted following this structure difference: (1) Students in New Zealand have more questions comparing with students in United States; (2) Students in New Zealand has less time to present in front of class; (3) Students in New Zealand use less time to study online and discussing the assignment with their friends.

The level of student motivation and engagement makes different level of academic achievement. Academic achievement unites with motivation (Schunk, 1991). Academic achievement can be used as a reference to increase the student perception against self-competences and increase their belief in academic capability. Bandura (1997) tells that academic achievement is perception of teacher ability in educate students by giving specific assignment. Feedbacks play significant roles to increase the academic achievement and helps the students to increase their exam performance level (Bandura, 1997). Positive feedback can bring students to increase their academic performance. Negative feedback can bring some frustration, disappointment, hesitance to the students. Chen and Liao (2013) have different perspective to academic performance. Academic performance is the result of learning strategy implementation. Environment also takes a part in academic achievement result.

RESEARCH METHODOLOGY:

To conduct this research, researchers distributed the questionnaire to the students. There are 142 active students belonging to 1st to 3rd years, among 315 students. To difference the motivation, 3 clusters are made to group the students. First cluster contains students who performs well during their study. It is proved by their GPA (higher than 3.25 with scale 4). Second cluster contains students who get GPA between 2.5 and 3.25 (Scale 4). The last cluster contains students who do not perform well. It is proved by their low GPA (below 2.5).

This research takes sample 65% of the total population. 92 students are taken as a sample. Figure 3 shows sample distribution.

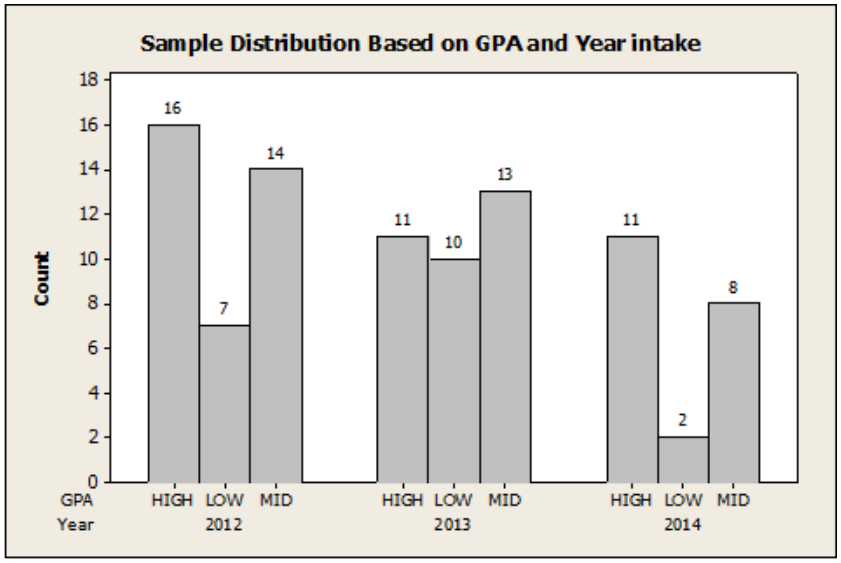

Figure 3: Sample Distribution

This research has some questions based on the study conducted by Tuan, H.L., Chin, C.C, and Shieh, S.H. (2005) and Pintrich (2003). 4 (four) topics are asked to the respondent:

1. How the students participate either in classroom or in laboratory
2. Students motivation to gain more knowledge
3. Learning environment and atmosphere, either in school or in home.
4. Stimulant and retarder factors to finish study.

To answer the questionnaire, students should answer range 1 – 10. Point 1 means they are strongly disagree and point 10 means strongly agree.

DATA ANALYSIS:

In this research, students' motivation level are divided into 4 (four) groups:

1. Attending Class
This group measures student's motivation level to prepare and take part in lectures activity in classroom.
2. Do the assignment
This group measures student's eagerness to do the assignment and do the self-study.
3. Prepare the examination
This group measures student's seriousness in order to prepare and attending the exam.
4. Escalate Students GPA
This group measures student eagerness level to hold the GPA (for students who already have good GPA) and to escalate their GPA (for students who have not had good GPA).

Respondents should give answers for every questions from 0 (not motivated at all) – 10 (very highly motivated). Table 5 gives the general descriptive statistics for every group:

Table 5: Descriptive Statistics

Independent Variable (Group)	Sample	Average	Standard Deviation	Median
Motivation Level in General	92	7.5	1.2	7.7
Attending Classroom	92	7.8	1.4	7.8
Do the Assignment	92	6.8	1.3	7.0
Prepare the Examination	92	7.6	1.1	7.8
Escalate GPA	92	9.2	1.3	10
Spending Time for Out campus activity	92	2.0	1.2	2
Interpersonal Relationship	92	7.5	1.7	7.5

From the table 5, it is inferred that student's motivation to preserve GPA or escalate GPA is 9.2 (0-10 scale). It means that there is student's willingness to preserve or escalate GPA. But this willingness is not turn to be intention and real action. Students wants to get high GPA, but students do not want to do the prerequisite, ie: (1) do the assignment; (2) attend the classroom.
This study also analyze is there any significant motivation differences level between students who have different GPA. Significant differences can be found in factor prepare the examination. Students with higher GPA tend to do the exam well. This kind of students already prepared before the exam. In the field observation, it is also found that students with lower GPA do not attend and do the exam. This complete figure can be shown in Table 6 and figure 4 as follows:

Table 6: Student Motivation Score based on GPA

Independent Variable (Group)	Average Student Motivation Score			
	ALL	GPA < 2.5	GPA between 2.5 – 3.25	GPA > 3.25
All factors	7.5	7.0	7.4	7.7
Attending Classroom	7.8	7.4	7.7	8.1
Do the Assignment	6.8	6.5	6.9	7.0
Prepare the Examination	7.6	7.0	7.6	7.9
Escalate GPA	9.2	8.6	9.1	9.5

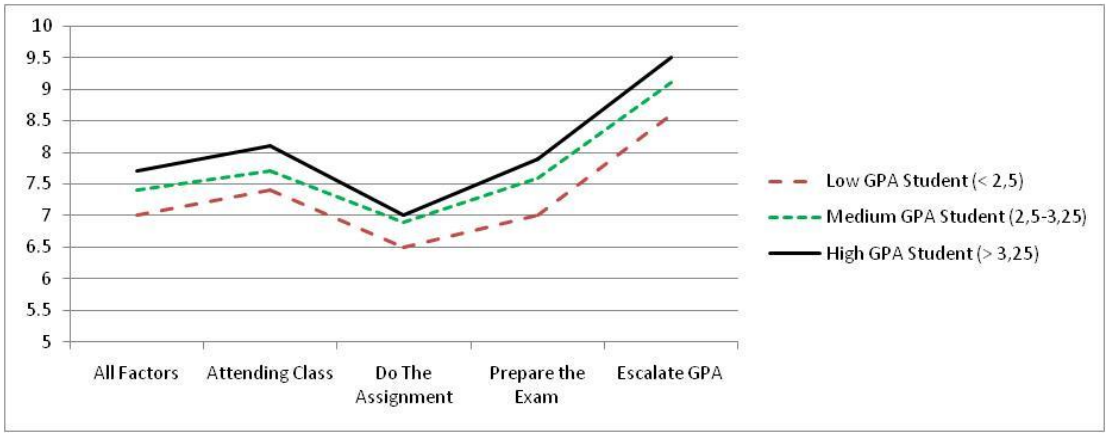

Figure 4: Comparison of Average Motivation Score for Different Level of GPA

Figure 4 shows how student motivation score is different for students with different GPA. Table 6 gives the whole average number. As seen in figure 1, there is no significant difference in doing the assignment. Students with higher GPA didn't have significant difference motivation level with the other kind of students. To test the significant level between this two kinds of variable, ANOVA test is done. The result can be shown in table 7. Table 7 shows that there is significant difference for every students with different GPA in preparing the exam. Complete figure of ANOVA test can be seen in table 7 below:

Table 7: ANOVA Test Result between GPA and Motivation Level

Independent Variable (Group)	ANOVA Test		Conclusion
	F	p-Value	
All factors	1.87	0.16	Not Significant
Attending Classroom	1.82	0.167	Not Significant
Do the Assignment	0.97	0.381	Not Significant
Prepare the Examination	4.19	0.018	Significant
Escalate GPA	2.82	0.065	Not Significant

To test the correlation between GPA and independent variable in group, researchers conducted Pearson correlation test. Complete figure of Pearson analysis is shown in table 8, as follows:

Table 8: Correlation GPA with any Motivation Factors

Correlation GPA with	Pearson Correlation	p-Value	Conclusion
All factors	0.249	0.017	Correlated
Attending Classroom	0.209	0.046	Correlated
Do the Assignment	0.23	0.027	Correlated
Prepare the Examination	0.299	0.004	Correlated
Escalate GPA	0.271	0.009	Correlated
Extracurricular Activity	0.139	0.185	Not Correlated
Interpersonal relationship	0.279	0.007	Correlated

Table 8 shows correlation level between GPA and student motivation level. The result indicates that GPA has positive correlation with every factors. The strongest correlation occurs between GPA and students motivation in preparing and doing the exams. On the other hand, there is no correlation between extracurricular activities with GPA.

DISCUSSIONS:

Based on the findings, there are some discussion point:

1. The average of student's motivation level in general is 7.5 (out of 10). The highest motivation is student eagerness to increase their GPA (point 9.2). But this eagerness is not supported with the effort to achieve it. It can be shown with students have less motivation in do the assignment (point 6.8), prepare the exams (point

7.6), and attending the class (point 7.8). Information System Department head should motivate the lecturer to give more intensive attention to students in doing assignments, attending the class, and preparing the exams.
2. There is no significant difference of student's motivation level between students who have high, medium, and low GPA. In order to give intensive attention to students, the lecturer should give it to the students without give distinction.

CONCLUSION:

There are some points for conclusions:
1. Student has a high eagerness to increase their GPA. But this eagerness is not supported with the effort to achieve it. They have less motivation in do the assignment, prepare the exams, and attending the class.
2. Every factors of student's motivation has positive correlation with GPA, except extracurricular activity.
3. There are no significant differences between students who have low, medium, or high GPA, except preparing the exams.

LIMITATIONS:

This study has some limitations. First, this study is conducted in Information Systems Departments, Duta Wacana Christian University. Some findings in this research are based on condition in Duta Wacana Christian University and does not measure the level of lecturer's motivation. The findings should be tested in other universities with the same Departments. Second, researchers took sample using random sampling method. Before taking the sample, researchers made three student clusters based on students' GPA. This clusters are made to test the correlations for every factors with GPA.

FUTURE RESEARCH SUGGESTIONS:

For future research, there are some topics that can be conducted such as predicting the students GPA to develop early warning systems. This early warning system can help the Information System Department Head to predict which students have difficulties during their studies. The future research also can be in topic how to monitor the students' motivation level for every year and every semester.

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