Model of Student Development by Chickering Theory

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Abstract: Studying in college is a period of transition towards a higher level of maturity for students. Therefore, a structured and measured pattern of student development is very important to be designed and implemented in campus life. This study aims to describe freshmen' self-development in one of the tertiary institutions in Bandung based on The Seven Vectors of Student Identity Development according to Chickering (1993). This study examined whether the theoretical model expressed in previous studies, between areas of competence, managing emotions, interdependence, and mature interpersonal relationships, contributes to area of identity development, which in turn could increase purpose and integrity. There were 4,857 freshmen of class 2017, 2018, 2019, and 2020 who filled out the student development questionnaire. Descriptive, comparison, correlation, and path analysis analyses were used. Results show the level of student self-development in all areas of development is at a moderate level, hence needs to be developed more. The model fit evaluation showed that the theoretical model regarding the effect of vectors in the Student Development construct on freshmen at "X" Bandung University was suitable (RMSEA = 0.080; TLI = 0.990; NFI = 0.995). Suggestions for universities to provide more focused and effective student self-development programs.

1 INTRODUCTION

Higher education is a higher level of formal education as a continuation of primary and secondary education. Each level of education has a different focus and purpose. Each of these goals must be adapted to an individual's stage of development (Gardner, 1990). Most college students are in transition from the developmental stage of late adolescence to early adulthood stage of development. The main developmental task of an adolescent is to affirm one's identity (Kerpelman et al, 1997; Nakula, 2006). At this stage of development, a teenager is engrossed in exploring his life, and learning to make a commitment to the choices in his life.

The process of affirming this identity or identity is a very important process, because an individual's identity will influence the individual's behavior throughout his life (Marcia, 1980). For students, this self-development process includes the whole self which does not only require internal efforts but also requires support and guidance from the environment. One of the main roles of universities is to provide an environment for students to develop themselves holistically.

Unlike the previous education levels at the primary and secondary levels, the situation at higher education institutions is different. While at the previous level of education, individuals received education in a relatively focused atmosphere and had limited choices for their activities, in college students had more flexibility in choosing activities that supported their self-development. Unlike the elementary and middle school levels, studying in

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college requires a more complex mindset, variety of relationship pattern, and different life orientation.

Student self-development is crucial because after graduating from college, individuals will enter the workplace. In the workplace, individuals will face more demands with less room for mistakes. Therefore, a good university is one that is able to equip its graduates to face the marketplace after students graduate from college. Therefore, students need to be equipped with technical skills (hard skills) and non-technical skills (soft skills). In fact, universities must equip students with holistic self-development

In reality, universities often only focus on the area of intellectual development and pay less attention to the development other aspects, such as emotional, social, and spiritual aspects. Chickering & Reisser (1993) states that universities should have a role in developing student competencies apart from students' intellectual competences, so that the graduates produced will be graduates who have balanced competencies and are able to contribute to society.

This symptom becomes interesting when viewed from the theoretical perspective put forward by Arthur Chickering, namely the Student Identity Development Theory (Chickering, 1993). According to Chickering, there are seven areas of student self-development (referred to as vectors) (1) Competence (2) Managing Emotion (3) Moving from Autonomy toward Interdependence, (4) Mature Interpersonal Relationships (5) Establishing Identity (6) Developing Purpose, and (7) Developing Integrity (Chickering & Reisser, 1993).

In order to help student development, there are two main factors that need to be considered, namely internal factors and external factors. First, the internal factors of the students themselves. Internal factors are related to motivation to study in tertiary institutions, students' attitudes towards studying in tertiary institutions. This internal factor determines the strength of the inner motive to make efforts during college. Students who have a strong motivation to choose and complete their chosen field of study will be more likely to succeed. On the other hand, low motivation and unclear reasons for going to college will have an impact on the academic achievement and self-development achieved by the students themselves. The power of motivation and clarity of purpose will help students determine priorities while studying in college.

The second factor, external factors, is the college environment that supports students' self-development during their studies. In most cases, the learning environment in higher education has not been able to provide a conducive environment in providing and guiding students in forming identity and becoming mature individuals (Chickering & Brasskamp, 2009).

Previous research has revealed that there are contributions from the areas of development of Competence (COM), Managing Emotion (ME), Interdependence (IND), and Mature Interpersonal Relationship (MIR) to the area of Establishing Identity (ID) of the students. Separately, the areas for self-development that contributed the most to affirming student identity were the Competence area and the Mature Interpersonal Relationship area. This means that these two areas have the strongest influence on the appreciation of the clarity of student identity (Rajagukguk & Sinuraya, 2020). The competencies that are owned, either manually, intellectually, or socially, form the identity of the students who are the respondents of this study. Likewise, the maturity of interpersonal relationships is quite strong in shaping the clarity of student identity.

It is necessary to conduct empirical research to test the theoretical model previously disclosed regarding causal relationships involving areas of student self-development. Thus, it will get an overview of the areas of student self-development in tertiary institutions as a basis for providing a more comprehensive student self-development program, not just academic abilities.

Through this research, universities are expected to be able to develop self-development programs that are based on empirical data and in accordance with the self-development needs of all students. Based on the elaboration in the previous section, the research problem to be revealed through this research is whether the theoretical model expressed in the previous research applies to the student population who is the subject of this study, especially those that explain the contribution between areas of competency development, emotional management, interdependence, and the maturity of the relationship with the development of student self-identity and between the development of final year student identity with the area of life goals and the area of integrity.

2 METHODS (AND MATERIALS)

2.1 Research Method

This study used a quantitative approach that aims to test theoretical models of college student self-development. The design used in this study is a causal

relationship (Gulo, 2002) to predict the effect of related variables, namely the effect of Competence (COM), Managing Emotion (ME), Interdependence, and Mature Interpersonal Relationship (MIR) on Establishing Identity (ID), also how Identity affects Purpose (PUR) and Integrity (INT).

2.2 Measurements

The variable of this research is student self-development, which is known through measuring seven development areas based on Arthur Chickering's theory of the Seven Vectors Student Development, namely Competence, Managing Emotion, Interdependence, Mature Interpersonal Relationship, Identity, Purpose, and Integrity. The measuring instrument for student self-development in tertiary institutions is measured through 7 (seven) development areas, namely: competence, managing emotion, interdependence (moving through autonomy toward interdependence), interpersonal relationships (mature interpersonal relationship), identity (establishing identity), purpose of life (purpose), and integrity (integrity).

2.3 Sample

The targets in this study were students at Maranatha Christian University class of 2017, 2018, 2019, and 2020. In this study, the sampling technique was not used because the subjects of the study were all first-year students from four different generations.

2.4 Analysis Method

This study applied some methods to analyse the data. First, descriptive analysis was used to describe how was the student development of each vector in freshmen every year from 2017-2020. Second, the independent t-test was used to check whether there were differences between each vector in freshmen every year. Intercorrelation between the student development vectors for each year were also being provided.

Last, this study also analysed how the first four vectors (COM, ME, IND, and MIR) could predict the students' Identity Development (ID). Then, how students' ID could predict PUR and INT. The contribution of PUR towards INT was also be seen. Therefor, path analysis was used. The model of these seven vectors would be provided in the end included the goodness of fit for the model.

The data processing was carried out using the assistance of the IBM SPSS version 25 and JASP 0.14.1 program.

3 RESULTS AND DISCUSSION

3.1 Participants

The participants in this study were 4857 students who filled the student development questionnaire. Students consisting of freshmen from class of 2017 (N= 1137), 2018 (N= 1549), 2019 (N=1198), and 2020 (N= 973).

The results showed that for freshmen of class 2017, 2019, and 2020, identity development is the vector with the highest average score. For freshmen of class 2018, the vector with the highest average score is interpersonal relationship. Manage emotions is a vector with the lowest average score for freshmen of class 2017 and 2018 while for freshmen of class 2019 and 2020, vector competence has the lowest average score. This shows that freshmen have a different level of self-development when they start studying at the college which is the population of this study.

Other results show that the average value of each vector in the new batch of 2018 students is higher than the new batch students of 2017, 2019, and 2020, except in the managing emotion development area where the highest average value is in the 2020 class. Meanwhile, the test results prove that that there is a significant difference in the average Competence score of freshmen class 2018 with class 2017, 2019, and 2020. ($p < 0.001$). It thus shows that there is one Force that has a higher COM development rate than another generation. The test on the comparison of the average score between self-development shows that there is a significant difference in the average score of Manage Emotions for freshmen class 2017 with class 2018, 2019, and 2020. ($p < 0.001$); there is a significant difference in the average value of Manage Emotions for freshmen class 2018 with class 2020. ($p < 0.05$); There is also a significant difference in the average value of Manage Emotions for freshmen class 2019 and class 2020. ($p < 0.05$).

In relation to the third area of self-development, it was found that there was a significant difference in the mean score of autonomy towards Interdependence among freshmen class 2018 and batch 2019 and 2020. ($p < 0.001$); There is a significant difference in the average score of Autonomy towards Interdependence in freshmen class 2017 with class 2020. ($p < 0.05$), and there is a significant difference in the average

score of Autonomy towards Interdependence for freshmen class 2019 and class 2020. ($p < 0.05$). In the development of the fourth area, it was found that there was a significant difference in the average value of Interpersonal Relationships among freshmen class 2018 with class 2017, 2019, and 2020. ($p < 0.001$); There is a significant difference in the average value of Interpersonal Relationships for freshmen class 2017 with class 2020. ($p < 0.05$). Other results show that there is a significant difference in the average value of Interpersonal Relationships for freshmen class 2019 and class 2020. ($p < 0.05$). Meanwhile, with regard to the fifth self-development area, it was found that there was a significant difference in the average value of Identity Development for freshmen class 2017 with class 2018, 2019, and 2020. ($p < 0.001$); there is a significant difference in the average value of Identity Development for freshmen class 2018 and batch 2019, and 2020. ($p < 0.001$); There is a significant difference in the mean value of Identity Development for freshmen class 2019 and class 2020. ($p < 0.05$). Furthermore, regarding the sixth area of self-development, the test results show that there is a significant difference in the average value of Developing Purpose for freshmen class 2017 with batches of 2018, 2019, and 2020. ($p < 0.001$), there is also a difference in the average value of Developing Purpose. which is significant for freshmen class 2018 with class 2019, and 2020. ($p < 0.001$). The last one is that it is found that there is a significant difference in the average score of Development of Integrity for freshmen class 2017 with class 2018 and 2020. ($p < 0.001$); There is a significant difference in the average value of Development of Integrity for freshmen class 2018 with class 2019 ($p < 0.001$), and there is a significant difference in the average value of Development of Integrity for freshmen class 2019 and class 2020. ($p < 0.05$).

Testing the correlation of the seven areas of self-development in freshmen class 2017-2019 correlated with each other at a significance level of $p < 0.001$. However, it was found that for freshmen of class 2020, only the area of competence has no correlation with the other six vectors. The remaining vectors are correlated with each other at a significance level of $p < 0.001$. It should be noted that the Batch 2020 is the only batch that started college with distance learning, as well as the orientation for new student orientation conducted online so that it affects the measurement results of the Competence.

Table 1: Simultaneous contribution of COM, ME, MIR, IND toward ID Batch 2017-2020.

Model	R	R^2	F	p
2017	0.799	0.638	498.361	<.001
2018	0.789	0.623	638.524	<.001
2019	0.754	0.569	393.070	<.001
2020	0.746	0.557	304.586	<.001

Table 2: Partial contribution of COM, ME, MIR, IND toward ID batch 2017-2020.

Model		B	Std. Error	β	t	p
2017	COM	0.057	0.036	0.054	1.586	0.113
	ME	-0.002	0.021	-0.002	-0.071	0.943
	IND	0.299	0.038	0.296	7.785	<.001
	MIR	0.504	0.038	0.497	15.785	<.001
2018	COM	0.227	0.028	0.242	8.069	<.001
	ME	0.071	0.019	0.091	3.775	<.001
	IND	0.194	0.028	0.208	6.801	<.001
	MIR	0.300	0.017	0.364	17.296	<.001
2019	COM	0.008	0.022	0.007	0.376	0.707
	ME	0.162	0.029	0.167	5.478	<.001
	IND	0.308	0.037	0.282	8.408	<.001
	MIR	0.427	0.033	0.379	13.062	<.001
2020	COM	0.019	0.023	0.018	0.821	0.412
	ME	0.161	0.031	0.169	5.115	<.001
	IND	0.339	0.039	0.323	8.807	<.001
	MIR	0.361	0.035	0.334	10.476	<.001

The final test which is the main objective of this research is testing the contribution of each of the first, second, third, and fourth development areas to the fifth self-development area to test the theoretical models found in previous research. The test results show that for freshmen class 2017-2020, the four vectors or areas of self-development, namely COM, ME, IND, and MIR contribute simultaneously to the area of ID. However, if it is tested partially, only freshmen of the 2018 class, whose four vectors have a contribution to ID. ($n = 1549$). Whereas for freshmen of 2019 ($n = 1198$) and 2020 ($n = 973$), vector COM does not have a partial contribution to ID. For freshmen of class 2017 ($n = 1137$), vector COM and ME were found to have no partial contribution to ID.

Table 3: Simultaneous contribution of IND toward PUR batch 2017-2020.

Model	R	R^2	F	p
2017	0.729	0.532	1290.221	<.001
2018	0.719	0.517	1658.980	<.001
2019	0.747	0.558	1512.182	<.001
2020	0.727	0.529	1090.191	<.001

Table 4: Partial contribution of IND toward INT batch 2017-2020.

Model	R	R^2	F	p
2017	0.689	0.475	1025.441	<.001
2018	0.642	0.412	1085.896	<.001
2019	0.781	0.610	1868.580	<.001
2020	0.730	0.533	1107.017	<.001

Table 5: Contribution of PUR toward INT batch 2017-2020.

Model	R	R^2	F	p
2017	0.641	0.411	1080.481	<.001
2018	0.789	0.623	638.524	<.001
2019	0.815	0.664	2368.688	<.001
2020	0.817	0.668	1956.018	<.001

In all batches of freshmen, it was found that ID has a contribution to PUR and development of INT. Developing PUR also contribute to the development of INT.

Table 6: Goodness of fit of student development model.

χ^2	RMSEA	TLI	GFI	CFI	NFI	PGFI
258.986	0.080	0.990	0.995	0.995	0.995	0.984

In general, Figure 1 shows that the empirical model of student development in "X" University students fits the seven vectors of student development from Chickering (RMSEA = 0.080; TLI = 0.990; NFI = 0.995; GFI= 0.995; CFI= 0.995; PGFI= 0.984).

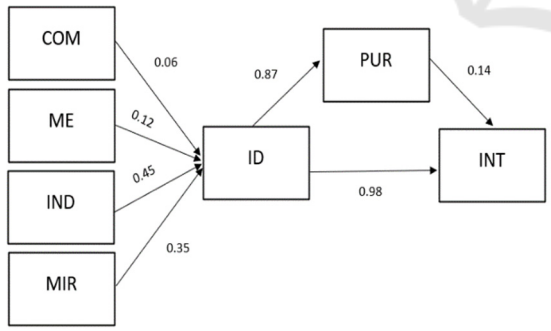

Figure 1: Path analysis model of the seven vector of student development on freshmen from 2017-2020.

This condition shows that student self-development has the same characteristics as other cultures in the context of self-development.

4 CONCLUSIONS

As a conclusion, it can be said that the theoretical model found by previous studies also applies to the student population who is the subject of this study. There were slight variations in different batch, however, in general it can be said that the contributory relationships of the intended areas of development theoretically proved consistent expressing a similar model.

Therefore, it can be suggested that the student affairs office should collaborates with the management of study programs to develop academic and extra-curricular activities which refer to the self-development model based on the self-development theory by Arthur Chickering, because it has been proven to be in accordance with student conditions enrolled in the last four years, with slight variations in the results found.

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APPENDIX

COM : Developing Competence
ME : Managing Emotion
IND : Moving Through Autonomy Towards Interdependence
MIR : Mature Interpersonal Relationship
ID : Establishing Identity
PUR : Developing Purpose
INT : Developing Integrity