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The Effect of Management Support, Mastery Learning and Learning Transfer on the Learning Success of the First-Year University Students Who Studied in Cambridge School in Jakarta, Indonesia

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Abstract
This article entitled "The Effect of Management Support, Mastery Learning and Learning Transfer on The Learning Success of The First-Year University Students Who Studied in Cambridge School in Jakarta" focuses on the effect of the three variables on the Learning Success of the first-year university students. There is no research recorded on the achievement of the Jakarta Cambridge High School graduates in their first year of University study. The instruments were distributed to 150 alumni of Cambridge High Schools in Jakarta through an online system using proportional random sampling technique. The data analysis consists of descriptive statistical analysis, inferential statistics for linearity test, significance of regression, and path analysis. The results of this research indicate simultaneous positive effects from the management support, mastery learning, and learning transfer to the learning success of the first-year university students; where the mastery learning gives the most significant effect, followed by learning transfer. However, there is no evidence that management support give direct influence to the learning success of the first-year university students.
Keywords: Management support, Mastery Learning, Learning Transfer, Learning Success of The First-Year University Students

1. Introduction

The number of the students enrolled in prestigious local and international Universities portrays the success of a certain secondary education system. It also brings the sense of achievement for the secondary schools. Most of Indonesian secondary students dream of studying in reputable Universities. Based on the survey done by Kompas, most of the respondents felt that they needed private courses and preparation courses to pass the University admission test. The concern was shared not only by students who were studying in public schools, but also the students of private schools which implemented international syllabus with more advanced facilities and more progressive curriculum. This phenomenon emphasizes on the fact that the current secondary students experience insufficient learning process and are less prepared to enter Universities through admission tests compared to secondary students a decade ago. The secondary graduates experience a very significant transitional phase from secondary school life to University life (Osborn, 2017; Sutton, Muller, Langenkamp, 2013; Ishitani, 2008; Wells, 2011; Feldt, Graham, Dew, 2011; Aurel Ion Clinciu, 2013). Researchers argue on the need to build an effective system of student admission to deal with the tight competition among secondary graduates (Sanwidi, 2015; Reyna, Reindl, Witham, Stanley, 2010 ; Ewell, 1983; Matthew J Stillman, 2007; O'Neill, Korsholm, Wallstedt, Eika, & Hartvigsen, 2009; Sevinc, & Gizir, 2014)

Based on the two statements mentioned above, it can be concluded that there is a problem in students academic readiness to face University admission test. In addition, their learning successes in their first year of University study. The concerns include the adaption to life in the new campus, the characteristics of the teachers especially with their teaching approaches, cultural differences, language barrier, and geographical features of the new environment for students who study abroad. The focus of this research is the learning success of the Cambridge secondary school graduates in their first year of University and how the mastery learning, learning transfer, and the management support that they have got in their secondary education affect it. For operational purposes, the focus is broken down into the following hypothetical questions: 1. Do mastery learning, learning transfer, and management support affect the success of the first year University study? 2. Does each of the three factors mentioned affect each other? 3. Which factor gives the most significant effect? 4. Do all factors mentioned affect the success of the first year University study simultaneously?

Mastery learning in this context means a learning strategy aimed to reach a thourough learning which is oriented on the teachers and students' abilities in mastering the lesson through a complex procedure of learning process which include: (1) The understanding of the four main conscious competences (conscious competence learning model) (Broadwell, 1969; Noel Burch,1970; Howell, 1982; Robinson, 1974; Chapman, 2016), (2) quality learning (quality of instruction), (3) detailed and systematic lesson planning, (4) assisting students, (5) mastery

learning criteria, (6) perseverance, (7) ability to understand instruction, (8) time management, (9) opportunity to learn (Bloom, 2004; Guskey, 2012; Anderson, 1994; Guskey & Pigott, 1988; Rosenberg, Guskey, Aderman, Eric, 2014; Kulik, Kulik, & Bangert-Drowns, 1990; Deweesse, & Vincent, 2012; Caroll, 1989; Tomlinson, 2013). Mastery learning can be achieved when a teacher plans the lesson well and gives enough time for the students to comprehend the learning subjects. Adeyemo et. al, (Adeyemo, 2014) states that mastery learning accommodates a better and thourough comprehension compared to traditional learning methods.

The management support from the school administrators also plays an important role in assisting the teacher and students to enforce mastery learning. Management support is the culture developed by the administrators of the school which is influenced by personal mastery, mental model, system thinking, building shared vision, and team learning (Senge, 2003; Sillins, 2002; Murniati, & Usman, 2015; Hessel, 2005; Mulford, 2003; Gallagher, 2013; Korpershoek, 2014). The management support includes scheme and policy to use all the existing materials and resources available integratedly to achieve the definitive goal.

Management support gives a positive influence to the teachers, which then leads to the teachers passing forward the positive influence to the students. Beth-Ann Tek (2014) argues that effective administration is a part of the management support which gives a positive influence to the teachers' contentment in working and thus, gives the same positive influence to the students in their efforts to reach mastery learning. (Phiri,2007; Beth-Ann Tek, 2014)

Learning transfer in higher level education, which is projected to support the learning success in the first year of University study, is enforced by the students' academic and non-academic mastery learning in secondary education (Perkins, Salomon, 1992). The contribution of learning transfer for the learning success in the first year of University study is great for there is relevance in content and study pattern in Secondary school and University, as mentioned by Christoph Guttentag, dan John Barnhill (Biology Cambridge Syllabus, 2016). It is safe to assume that learning transfer is an effective continuous application of prior knowledge and skills from previous learning experience to support present learning process. This is marked by the existence of motivation, readiness, and will (Perkins, Salomon, 1992). The effective and continuous application (Deese, 2001) includes: (1) direction to reach the learning goal, (2) frequency of efforts put to reach the learning goal, (3) perseverance in reaching the learning goal, (4) confidence, (5) commitment, (6) social influence, (7) University study, (8) participation in learning process (Perkins, Salomon, 1992; Haskell; Lane, 2012; Torrey, & Shavlik, 2009; Haskell, 2001). These are important as main fundamentals in leaning which are related to the process and goal. These are also the foundation of continuous learning and the core requirements for education institution in retaining their quality learning.

The learning success of the first year of University study is the commitment of the secondary graduates in their transitional phase from secondary school life and study to University. This phase is marked by the current situation, one's capability and strategy, and supports from the University (Workman, 2015, Holland, 1959). A commitment may include: (1) transition duration, (2) experience with transitions, (3) family support, (4) experience in transitions, (5) demographic characteristics, (6) psychological characteristics, (7) awareness of transition, (8) attitude toward transition, (9) actions planned for transition, (10) supports, (11) support effectiveness (Workman, 2015; Naushaad, 2012; Gredler, 2001; Speras, & Santrock, 2008; Kennedy, Hyland, Ryan; Uwin, & Jenkins, 2001; Bingham, 2012; Praslova, 2010; Eckel, & Kezar, 2015; Hickinbottom, & Burns, 2015). Stephen Adam (2004), in a seminar held in United Kingdom Bologna, Heriot-Watt University (Edinburgh Conference Centre) Scotland, states a similar argument supporting the notion that a student's learning achievement is defined as a set of knowledge, skills, and ability gained as the result of higher education process.

How a school undergoes a "learning" process which involves the five disciplines; systems thinking, personal mastery, mental models, building shared vision, and team learning, is the foundation for the management administrators in giving supports to the school in dealing with the dynamic complexity of the education world which, then, gives positive impacts to the success of mastery learning. Management support contribution which directly affects learning transfer is backed up by Jo Rhodes, et.al (2008) who argues that system thinking, mental model, and team learning are parts of management support which give positive influence to the success of learning transfer.

The result of a previous research states that there is a direct relation between mastery learning and learning transfer. This argument aligns with a theory by Thorndike (1913) which explains the similarity between learning condition and transfer condition. Thorndike hypothesizes that the initial transfer level and the subsequent learning depend on the mutual relation of the elements of both events.

It can be concluded that the first factor which comes from the student's mastery learning of a certain subject amplifies their ability in learning transfer. The level of learning transfer depends on the affinity of the initial knowledge and the subsequent knowledge.

Whilst the management support doesn't contribute directly to the learning success in the first year of University study, it still affects the alumni's learning success, both academic and non-academic through mastery learning and learning transfer.

Mastery learning influences the learning success directly. This is aligned with the result of the research done

by Adeyemo et. al (Adeyemo, 2014) which argues that Mastery Learning approach increases the performance of students exposed to it than students exposed to the regular teaching strategies. Mastery learning system supports the learning success better than traditional learning system, both academic and non-academic, which leads to the learning success of the first year study in University.

Thus, this research is conducted to study the effect of management support, mastery learning and learning transfer on the learning success of the first year in university by the graduates of Cambridge Schools in Jakarta, Indonesia.

2. Research Method

This research uses quantitative methodology on cause and effect relation with the path analysis approach. The research was conducted in September-December 2016 through online survey site, *Survey Monkey,* which was sent to graduates of Cambridge School in Jakarta. The sample targets are graduates of Cambridge Schools Advanced Level year 2011 – 2015 who have finished their secondary education using the Cambridge Syllabus. There were 150 graduates which were selected using proportional random sampling technique. Data analysis technique includes descriptive statistics analysis, inferential statistics for linearity test, regression significance, and multivariate statistics using path analysis. Data processing and analysis use *Microsoft Excel* 2013, *SPSS,* dan *LISREL* 8.72 *full version*.

There are four variables in this research; the alumni's perceptions on management support as the independent or exogenous variable, mastery learning, learning transfer; and the learning success of the first year in university as the dependent or endogenous variables.

The relation of the variables in this research, management support (X_1) as the exogenous variable, mastery learning (X_2), learning transfer (X_3), and the alumni's first year study in university (Y) as the endogenous variables, is presented as follow (see figure 1).

3. Results and Analysis

Based on the analysis, there are 7 items found to be outliers and thus discarded (Pedhazur,1997). The analysis result suggests that management support, learning mastery, and learning transfer indeed affect the learning success of the first year university students who studied in Cambridge School in Jakarta, with the summary of statistical analysis as follow (see table 1):

Based on above digest, the following is the final path analysis (see figure 2).

Based on table 1 and figure 2, we can break down the result of this research as follow: (1) path coefficient (p_{21}) count as 0.760, $t_{value} = 13.74 > t_{table\ (0.05;143)} = 1.9761$, hence, H_0 is rejected and H_1 is accepted. Therefore, path coefficient p_{21} is significant. This finding proves that management support gives a positive influence to mastery learning. (2) path coefficient (p_{31}) count as 0.38, $t_{value} = 4.92 > t_{table\ (0.05;143)} = 1.9762$, hence, H_0 is rejected and H_1 is accepted. Therefore, path coefficient p_{31} is significant. This finding proves that management support gives a positive influence to learning transfer. (3) path coefficient (p_{32}) count as 0.48, $t_{value} = 6.17 > t_{table\ (0.05;143)} = 1.9762$, hence, H_0 is rejected and H_1 is accepted. Therefore, path coefficient p_{32} is significant. This finding proves that mastery learning gives a positive influence to learning transfer. (4) path coefficient (p_{y1}) count as 0.127, $t_{value} = 1.492 < t_{table\ (0.05;143)} = 1.9763$, hence, H_0 is accepted and H_1 is rejected Therefore, path coefficient p_{y1} is insignificant. This finding proves that management support doesn't give a positive influence to the learning success of the first-year study in university. (5) path coefficient (p_{y2}) count as 0.57, $t_{value} = 6.89 > t_{table\ (0,05;143)} = 1.9763$, hence, H_0 is rejected and H_1 is accepted. Therefore, path coefficient p_{y2} is significant. This finding proves that mastery learning gives a positive influence to the learning success of the first-year study in university. (6) path coefficient (p_{y3}) count as 0.19, $t_{value} = 2.38 > t_{table\ (0.05;143)} = 1.9763$, hence, H_0 is rejected and H_1 is accepted. Therefore, path coefficient p_{y3} is significant. This finding proves that learning transfer gives a positive influence to the learning success of the first-year in university.

It can be concluded from the three variables above that the variable that gives the greatest impact on the learning success of the first-year in university in this research is the influence of mastery learning. The percentage of the contribution of mastery learning to the learning success of the first-year in university is 57%**.** Thus, the learning success of the first year in university is more affected by the mastery learning than learning transfer or management support. This corresponds to the result of the research conducted by Adeyemo et. al (Adeyemo, 2014). The mastery learning system increases the learning success better than the traditional learning system, academic and non-academic, to support the learning success of the alumni in their first year in university. Many subjects in the first year in university correlate with the secondary learning. That being the case, mastery learning in secondary education can significantly help students to achieve the learning success in the first year in university.

Nevertheless, learning transfer gives contribution that comes close to mastery learning with the percentage of 19%. Whilst, management support does not directly affect the learning success of the first year in university. Studying using the Cambridge syllabus in secondary schools really helps the alumni to find the relevance of the content and pattern of their previous study in relation to their first year study in university, as argued by Christoph

Guttentag and John Barnhill. This also agrees with a theory by Thorndike (Thorndike, 1913) who states that the major factor which influences the success of learning transfer is the level of mastery learning. Here, however, the learning transfer involves not only the academic achievement, but also effective communication, teamwork, serving leadership, conflict management, decision making, resilience, identifying strength and weakness, adaptiveness, being flexible in thinking and transmitting ideas, planning and organizing, confidence, social skills, as mentioned by Osborn (Osborn, 2015). This is also aligned with the statement of Schlossberg in Workman (Workman, 2015) who explores the first year learning experience in university which in his theory is called 4S (*Situation, Self, Strategies*, and *Support*). It is about how an alumnus is able to deal with new circumstance by using their skills and strategy, and how to get the corresponding supports.

With the percentage of 17.18%, the management support does not directly gives the influence to the learning success, but through the other factors especially the mastery leaning. For an instance, it is proven that the school administrators do influence the success of the alumni in their first year in university. This success include academic and non-academic factors incorporating study pattern and habit, social skills in the campus, engaging with others in organizations, disciplines, and moral etiquette. This suggests that the management support affects the learning success of the first year in university indirectly, but it through other factors.

The influence of the three variables, 1 endogenic variable and 2 exogenic variables, can be broken down as the followings. The management support gives direct positive influence to mastery learning with the contribution count as 76%. The management support contribution is quite influential in selecting qualified teachers and providing the facility. This agrees with the result of a research conducted by Dines Phiri (2007) which argues that management support gives positive influence to the teacher board which leads to the learning success of the students. This is also aligned with a research done by Beth-Ann Tek from a university in *Rhode Island* (2014), which finds that leadership effectiveness at school, which is a part of management support, gives a positive impact to the teacher board's contentment and the students' mastery learning.

In addition, management support influences the learning transfer positively with the contribution as much as as 38%. This concurs with the research conducted by Jo Rhodes, et. al (2008) which states that an effective management support gives a positive influence to the formation of learning transfer.

The analysis shows that mastery learning gives a direct positive influence to learning transfer with a contribution count as 48%. This is backed up by a theory from teori Thorndike (1913)

Early research on the transfer of learning was guided by theories that emphasized the similarity between conditions of learning and conditions of transfer. Thorndike (1913), for example, hypothesized that the degree of transfer between initial and later learning depends upon the match between elements across the two events. The first factor that influences successful transfer is degree of mastery of the original subject.

In other words, the level of understanding of a student towards a learning subject, influence their ability in conducting learning transfer. By all means, it is oriented to the student's ability to master a learning through a complex procedure and a set of learning process.

4. Conclusion

The findings of this research show that there is a correlation between the three variables, management support, mastery learning, and learning transfer to the learning success of the first year in university. The greatest influence impacting the learning success in the first year in university is given by mastery learning, followed by learning transfer, and lastly, management support which influences indirectly. However, management support gives a greater direct influence to mastery learning, compared to learning transfer. Effective management support equips alumni with mastery learning which enable them to perform successful learning transfer, academic and non-academic, in their university study, especially in the first year.

Mastery learning affects directly and positively to the learning success of the first year in university. This explains that alumni who have achieved the mastery learning are more capable of applying their knowledge from the secondary school, academic and non-academic, to support their learning success in their first year study in university.

Learning transfer affects directly and positively to the learning success in the first year in university. The content and pattern relevance from secondary education make it easier for the alumni to perform learning transfer in university. This proves that personal motivation in reaching learning goal, confidence, determination, surrounding, preparation to study in university, and participation in learning process support the learning success in the first year in university.

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In 1987, she began her career as a Mathematics teacher at Sedes Sapientiae, a Christian High School in Semarang, Central Java, Indonesia.

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In July 2012, she was appointed as the Head of the Curriculum and Evaluation Department at BPK PENABUR Jakarta, Indonesia.

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In 1996, she was inaugurated as Professor at the Faculty of Education, Jakarta State University, Indonesia.
She is currently the co-promoter for Kumalasari Onggobawono in her doctoral dissertation.was born in Bandung, West Java, Indonesia in 1938. She is currently the co-promoter for Kumalasari Onggobawono in her doctoral dissertation.

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He started his career as a teacher in Bhineka Karya Vocational School, Surakarta, Indonesia, in 1973. He was the coordinator for Mechanical Drawing in Institute of Teacher Training and Educational Sciences of Padang, Indonesia, in 1979. And in 1980, he became the coordinator of the Engineering Science Teacher Board in Institute of Teacher Training and Educational Sciences of Padang, Indonesia. In 1988, he worked as the secretary of Design and Development Department of Institute of Teacher Training and Educational Sciences of Padang, Indonesia. In 1989, he was appointed as the Head of Testing and Education Evaluation Centre of Institute of Teacher Training and Educational Sciences of Padang, Indonesia. He was also a consultant in Testing System Research and Development Centre in the Department of Education Jakarta in 1992-1993. He was then appointed as the Head of Testing and Education Evaluation Centre in Institute of Teacher Training and Educational Sciences of Padang, Indonesia, in 1994.
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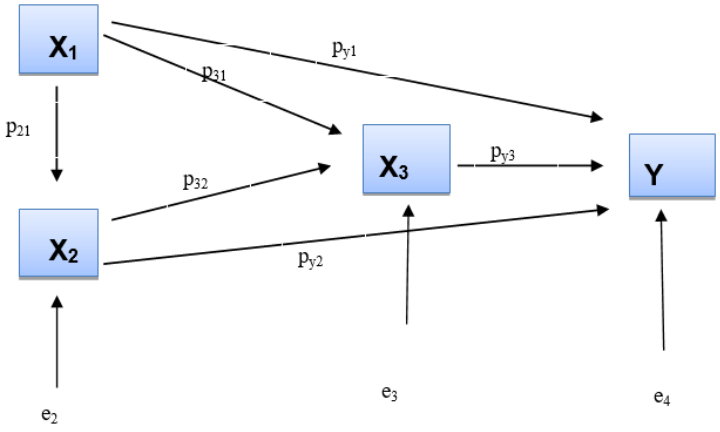
He has participated in many trainings and workshops both in Indonesia and abroad. He has joined a fellowship in England to study Technical Teacher Training of Engineering Science for almost a year. He has also participated in a short course in Minimum Competency Testing, San Francisco, USA. He has been involved in a Mechanical Engineering Training in Bandung.

He was also active in Organizations such as American Educational Research Association in 1984-1988, Research and Scientific Writing Department in West Sumatra, Indonesia, in 1997-2003. And he remains active in some, such as National Council on Measurement ion Education, USA, from 1984-now and The Indonesian Education Evaluation Board from 2010-now.

He has written a number of research writing, published journals, workshop handouts and articles. He has also been acting as dissertations promotor and thesis mentor for many students since 2014. He is currently a reviewer and an advisor for Kumalasari Onggobawono in her doctoral dissertation.

Figure 1. Diagram of the interrelations of the research variables (Hypothetical Model)



Note:

X_1 : Management support variable (exogenous variable)

X_2; X_3, Y are dependent/ endogenous variables

X_2 : Mastery learning variable

X_3 : Learning transfer variable

Y : Learning success of the first-year university students variable

p_{y1} : The effect of management support variable (X_1) to the learning success of the first-year university students variable (Y)

p_{y2} : The effect of mastery learning variable (X_2) to the learning success of the first-year university students variable (Y)

p_{y3} : The effect of learning transfer variable (X_3) to the learning success of the first-year university students variable (Y)

p_{21} : The effect of management support variable (X_1) to the mastery learning variable (X_2)

p_{32} : The effect of mastery learning variable (X_2) to the learning transfer variable (X_3)

p_{31} : The effect of management support variable (X_1) to the learning transfer variable (X_3)

e_2 : residual of X_2 variable

e_3 : residual of X_3 variable

e_4 : residual of Y variable

Table 1. Summary of path coefficient calculation and t value

No	Variable	Path coefficient			result	conclusion
		SLF*	T_{value}	$t_{table\ (\alpha=0,05)}$		
1	X2 over X1	0.76	13.74	1.9761	Ho rejected	Significant
2	X3 over X1	0.38	4.925	1.9762	Ho rejected	Significant
3	X3 over X2	0.48	6,170	1.9762	Ho rejected	Significant
4	Y over X1	0.13	1.567	1.9763	Ho accepted	Insignificant
5	Y over X2	0.57	6.311	1.9763	Ho rejected	Significant
6	Y over X3	0.19	2.627	1.9763	Ho rejected	Significant

Figure 2. t-value Output

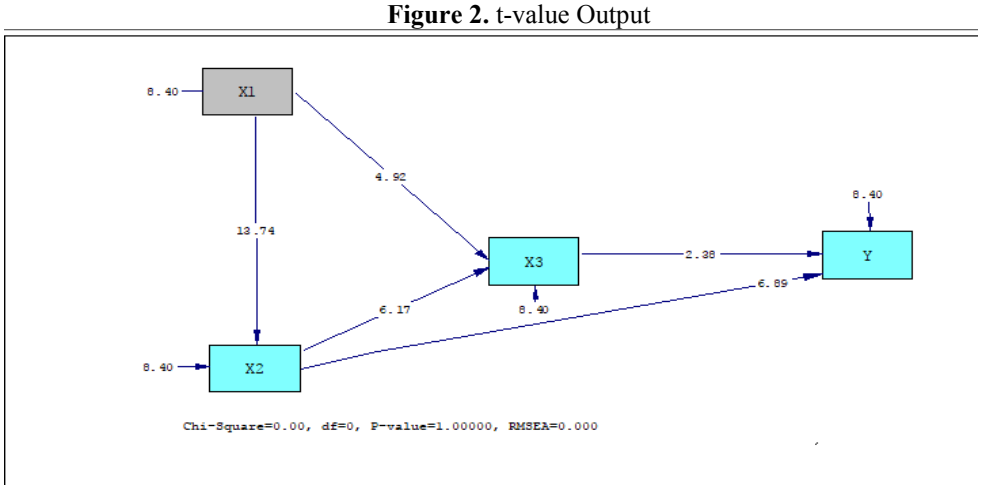


Figure 3. Path Analysis (Standardize Solution)