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# Factors that affect the avidity for learning behavior of the undergraduate students at King Mongkut's Institute of Technology Ladkrabang (KMITL): The path analysis*

# ปัจจัยที่ส่งผลต่อพฤติกรรมการใฝ่รู้ของนักศึกษาสถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง : การวิเคราะห์เส้นทาง

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**Abstract**

This research aimed 1) to study the avidity for learning behavior and factors that affect the avidity for learning behavior of the undergraduate students at KMITL and 2) to analyze the path of factors that affect the avidity for learning behavior of undergraduate students at KMITL. The sample consisted of 392 undergraduate students at KMITL in the academic year 2013 by stratified random sampling according to the faculties. The research instrument was the questionnaires of the avidity for learning behavior which had the overall reliability of 0.94 and the factors which had the overall reliability of 0.96. The data analysis of this behavior level and factors was analyzed by the descriptive statistics; in addition, the analysis of factors that affect the avidity for learning behavior was analyzed by the statistics of path analysis.

The results found that; the samples had the avidity for learning behavior at a high level (as mean equal to 3.63), and the factors that affect the avidity for learning behavior were at a high level of all variables by were sorted in descending as follows; the support of family, the learning motivation, the learning resources and the support of curriculum and teaching activities (as mean equal to 4.26, 4.00, 3.93 and 3.88 respectively).

The result of path analysis found that the factor model which affected the avidity for learning behavior of the undergraduate students at KMITL was able to describe the variance of

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students' behavior equal to 69.5 percent. Moreover, the factor that affected the highest on the avidity for learning behavior is the learning motivation equal to 0.45. The subordinate factor was the learning resources that there was the direct effect value equal to 0.26 and the indirect effect value through the learning motivation equal to 0.05.

The support of curriculum and teaching activities, there was the direct effect value equal to 0.12 and the indirect effect value through the learning motivation equal to 0.18. In addition, the support of family, there was the indirect effect value through the learning motivation equal to 0.12.

When considering the internal variable as the mediator variable that was the learning motivation, found that all of external variables affected this factor directly. The curriculum support and teaching activities, there was the influence through the learning motivation at the highest effect value equal to 0.40. The subordinate factors were the family support at the effect value equal to 0.26, and the learning resources at the effect value equal to 0.11 respectively.

**Keywords:** Avidity for Learning, Learning Motivation, Path analysis, Undergraduate students

**บทคัดย่อ**

การวิจัยครั้งนี้มีวัตถุประสงค์ 1) เพื่อศึกษาพฤติกรรมการใฝ่รู้และปัจจัยที่ส่งผลต่อพฤติกรรมการใฝ่รู้ของนักศึกษาสถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง และ 2) เพื่อวิเคราะห์เส้นทาง (Path Analysis) ปัจจัยที่ส่งต่อพฤติกรรมการใฝ่รู้ของนักศึกษาสถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง กลุ่มตัวอย่างเป็นนักศึกษาระดับปริญญาตรี สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง ปีการศึกษา 2556 จำนวน 392 คน โดยสุ่มแบบแบ่งชั้นตามคณะ เครื่องมือที่ใช้ในการวิจัยเป็นแบบสอบถามเกี่ยวกับพฤติกรรมการใฝ่รู้ มีค่าความเชื่อมั่นในภาพรวม 0.94 และเกี่ยวกับปัจจัยที่ส่งผลต่อพฤติกรรมการใฝ่รู้ มีค่าความเชื่อมั่นในภาพรวม 0.96 การวิเคราะห์ข้อมูลระดับพฤติกรรมการใฝ่รู้และปัจจัย ใช้สถิติเชิงพรรณนา และการวิเคราะห์ปัจจัยที่ส่งผลต่อพฤติกรรมการใฝ่รู้ใช้สถิติการวิเคราะห์เส้นทาง ผลการวิจัยพบว่า

กลุ่มตัวอย่างมีระดับพฤติกรรมการใฝ่รู้อยู่ในระดับมาก (ค่าเฉลี่ยเท่ากับ 3.63) และมีปัจจัยที่ส่งผลต่อพฤติกรรมการใฝ่รู้อยู่ในระดับมากทุกตัวแปร โดยเรียงลำดับจากมากที่สุดได้ดังนี้ การส่งเสริมจากครอบครัว, แรงจูงใจใฝ่เรียนรู้, แหล่งการเรียนรู้ และการส่งเสริมจากหลักสูตรและกิจกรรมการเรียนการสอน (ค่าเฉลี่ยเท่ากับ 4.26, 4.00, 3.93 และ 3.88 ตามลำดับ)

ผลการวิเคราะห์เส้นทาง พบว่าแบบจำลองปัจจัยที่ส่งผลต่อพฤติกรรมการใฝ่รู้ของนักศึกษาสถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง สามารถอธิบายความแปรปรวนของพฤติกรรมการใฝ่รู้ของนักศึกษาได้ร้อยละ 69.5 และปัจจัยที่ส่งผลต่อพฤติกรรมการใฝ่รู้มากที่สุดคือ แรงจูงใจใฝ่เรียนรู้ มีอิทธิพลทางตรงต่อพฤติกรรมการใฝ่รู้ เท่ากับ .45 รองลงมาคือ แหล่งการเรียนรู้ มีค่าอิทธิพลทางตรง เท่ากับ .26 และ

มีค่าอิทธิพลทางอ้อมโดยผ่านแรงจูงใจใฝ่เรียนรู้ เท่ากับ .05 การส่งเสริมจากหลักสูตรและกิจกรรมการเรียนการสอนมีค่าอิทธิพลทางตรง เท่ากับ .12 และมีค่าอิทธิพลทางอ้อมโดยผ่านแรงจูงใจใฝ่เรียนรู้ เท่ากับ .18 และการส่งเสริมจากครอบครัว มีค่าอิทธิพลทางอ้อมโดยผ่านแรงจูงใจใฝ่เรียนรู้ เท่ากับ .12

และเมื่อพิจารณาตัวแปรภายในที่เป็นตัวแปรคั่นกลาง (Mediator variable) คือ แรงจูงใจใฝ่เรียนรู้ พบว่าตัวแปรภายนอกทุกตัวมีอิทธิพลทางตรงต่อแรงจูงใจใฝ่เรียนรู้ โดยที่การส่งเสริมจากหลักสูตรและกิจกรรมการเรียนการสอนมีอิทธิพลต่อแรงจูงใจใฝ่เรียนรู้มากที่สุด มีค่าอิทธิพลเท่ากับ .40 รองลงมาคือ การส่งเสริมจากครอบครัว มีค่าอิทธิพลเท่ากับ .26 และแหล่งการเรียนรู้ มีค่าอิทธิพลเท่ากับ .11

**คำสำคัญ:** การใฝ่รู้, แรงจูงใจใฝ่เรียนรู้, การวิเคราะห์เส้นทาง, นักศึกษาระดับปริญญาตรี

**Introduction**

Obviously, Thailand has followed the trend of capitalism for several decades. It has caused the destruction of self-sufficiency, no thinking and no doing by their own which is regarded as the most important values of life. Moreover, we often embraced the consumer culture and the culture of knowledge receiving. (Paitoon Sinlarat, 2007). These trends have affected Thai people to lack the avidity for learning behavior because they have followed the foreign cultures. Thus, the self-creation culture and self–production did not be applied in the various processes such as the education sector and major production sector of the country.

The amendment will focus on the education system due to it is a concept that the knowledge should only study in schools that it would be appropriate. As a result, the education system was determined to educate the people in the country directly by expanding educational opportunities, extending compulsory education, the establishment of technical colleges and the establishment of the universities in the local centers. The following problem was caused by breaking the connection of all educational levels and separated the students to focus on learning in the institutions only. Furthermore, they just desired to get knowledge for their profession mainly (Aurasri Ngamwittayapong, n.d.). It showed the increasing rate of students from the academic year 2007 onwards such as the high schools, the vocational schools and higher education levels. In case of, there are more expansion of educational opportunities that affect the unavailability of local schools and the new educational institutions, including a shortage of quality instructor (Office of the Education Council, 2010)

The definition of knowledge based on educational institutions to meet the labor market, which increasing the value of diplomas or certificates. In addition, the unavailability and lack of quality affect the students have to get a high GPA for their graduation as soon as possible. It implies that the students have to compete with other students to get the top rank

of schools. However, the elementary and secondary pupils may not have an obvious effect from the social feedback because all of them have not entered into the profession yet. There is the reflection of a large number of tutorial schools that were established all over the country more than 30 years. This reflects the quality of the school system and the competition which like as the entrance to famous universities due to the students expect to have a good opportunity of career and improve a quality of their life (Ministry of Education, 2010: online). Therefore, it is important to cultivate students about the avidity for learning behavior. Specifically, the undergraduate students in higher education who are the majority group to take the knowledge for social development as the workers. Moreover, a part of them will work as the teachers in the schools. In case of, the teachers do not have the good quality that means it hard for them to produce the good pupils by themselves. One of social problem shows that "Thai graduates have a good vocational knowledge actually, but all of them lack of thinking skills such as the analysis, the synthesis and the avidity for learning behavior" (Amornwich Nakornthap, 2001: 15-22). That means the avidity for learning behavior is very important to develop the quality of Thai graduates because it is the beginning of an intellectual process that continuously help them to question and solve the problems. Furthermore, they should be able to find out the answers by a variety of tactics, select the data sources through the reasonable consideration and know how to analyze and get the appropriate answers. Due to the avidity for learning behavior is the intellectual strength that the persons do not have a congenital, so, it need to cultivate the learning method continuously which the students can adjust their body and mind to meet the rapid changes of society and can be applied to self-development and social afterwards.

King Mongkut's Institute of Technology Ladkrabang (KMITL) has defined the identity of students that "Being honest, having the avidity for learning behavior and doing hard work". Thus, the researchers need to study the factors that affect the avidity for learning behavior of undergraduate students at KMITL to achieve the empirical knowledge and the complexity of factors that accord with the change of society, including, the conclusion as the guideline to support the avidity for learning behavior that is the identity of institutes afterwards.

**The research objectives**

1. To study the behavior and factors that affect to the avidity for learning behavior of undergraduate students at KMITL.

2. To analyze the path model of factors that affects the avidity for learning behavior of undergraduate students at KMITL.

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## The research methodology

### The populations and samples

The population in this research consisted of 20,341 undergraduate students at KMITL in the academic year 2013.

The sample consisted of 392 undergraduate students at KMITL in the academic year 2013 which were determined by Yamane's table (1967: 886 refers to Ong-Art Naiyapatana, 2008: 125), the reliability of 95% including the tolerance range of ±5% by the stratified random sampling. The proportion of determined samples and real returned questionnaires from each faculty as follows:

| Faculties/ College | Determined samples | Real returned questionnaires |
|---|---|---|
| 1. Faculty of Engineering | 113 | 113 |
| 2. Faculty of Architecture | 46 | 65 |
| 3. Faculty of Industrial Education | 40 | 89 |
| 4. Faculty of Agricultural Technology | 50 | 8 |
| 5. Faculty of Science | 97 | 67 |
| 6. Faculty of Agro-Industry | 15 | 5 |
| 7. Faculty of Information Technology | 9 | 25 |
| 8. College of Nanotechnology | 3 | 16 |
| 9. College of Administration and Management | 15 | 2 |
| 10. International College | 2 | - |
| 11. College of Data Storage Innovation | 1 | - |
| Total | 392 | 392 |

### The research instrument

The research instrument was the questionnaire consists of three parts as follows:

Part 1: The questionnaire that inquires about the general information of the undergraduate students as the checklist.

Part 2: The questionnaire that inquires about the avidity for learning behavior as the five-point rating scales.

Part 3: The questionnaire that inquires the factors that affect the avidity for learning behavior as the five-point rating scales.

The second part that inquires about the avidity for learning behavior and the third part inquires about factors that affect this behavior. Both of them were verified the face validity by the experts who taught in Educational Psychology Course. The result, they agreed in the content of the questionnaire and have already been edited some items, afterward, the researcher was taken to trial with the 60 undergraduate students at KMITL in academic year 2012.The second part has the reliability of 0.94, and the third part has the reliability of 0.96 respectively.

**The procedures and data collection**

The researchers collected the data from the undergraduate students of all faculties at KMITL in academic year 2013. The total number of returned questionnaires was 392 which was 100 percent rate of return. The details of the research procedures are as follows;

The first step: studying from the documentary research to analyze the variables that relate to the avidity for learning behavior and issue the questionnaire that inquires the behavior and factors that affect this behavior of students.

The second step: developing the model of the path of factors that affect the avidity for learning behavior by LISREL program and using the path analysis statistics.

The third step: presenting the guidelines that support the avidity for learning behavior of students, according to the value of variables of this research.

**The conceptual framework**

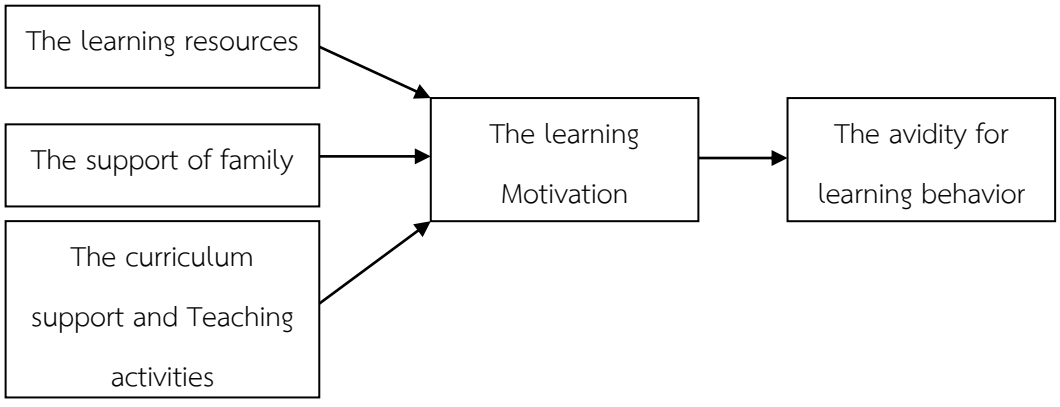



**Figure 1:** The conceptual framework

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**The results of data analysis**

**1. The general information**

**Table 2:** The general information of the samples

| List of Items | No. of Persons | Percentage |
|---|---|---|
| **Gender** | | |
| 1. Male | 203 | 51.8 |
| 2. Female | 189 | 48.2 |
| Total | 392 | 100 |
| **Age** | | |
| 1. 18 Years old. | 5 | 1.3 |
| 2. 19 Years old. | 28 | 7.2 |
| 3. 20 Years old. | 69 | 17.6 |
| 4. 21 Years old. | 126 | 32.2 |
| 5. 22 Years old. | 133 | 34 |
| 6. 23 Years old. | 28 | 7.2 |
| 7. 24 Years old. | 2 | 0.5 |
| Total | 391 | 100 |
| **Missing | 1 | |
| **Year** | | |
| 1. 1st | 24 | 6.1 |
| 2. 2nd | 69 | 17.6 |
| 3. 3rd | 136 | 34.7 |
| 4. 4th | 160 | 40.8 |
| 5. 5th | 3 | 0.8 |
| Total | 392 | 100 |
| **Grade Point Average: GPA** | | |
| 1. Lower than 2.00 | 3 | 0.8 |
| 2. 2.01 – 2.50 | 92 | 24.6 |
| 3. 2.51 – 3.00 | 160 | 42.8 |
| 4. 3.01 – 3.50 | 111 | 29.7 |
| 5. 3.51 – 4.00 | 8 | 2.1 |
| Total | 374 | 100 |
| **Missing | 18 | |

| List of Items | No. of Persons | Percentage |
|---|---|---|
| **Faculties/ College** | | |
| 12. Faculty of Engineering | 113 | 29 |
| 13. Faculty of Architecture | 65 | 16.7 |
| 14. Faculty of Industrial Education | 89 | 22.8 |
| 15. Faculty of Agricultural Technology | 8 | 2.1 |
| 16. Faculty of Science | 67 | 17.2 |
| 17. Faculty of Agro-Industry | 5 | 1.3 |
| 18. Faculty of Information Technology | 25 | 6.4 |
| 19. College of Nanotechnology | 16 | 4.1 |
| 20. College of Administration and Management | 2 | 0.5 |
| Total | 390 | 100 |
| **Missing | 2 | |

The table 2 shows the details of sample as follows:

The gender of students is 51.8% of male and 48.2% of female. The majority of students are 22, 21 and 20 years old as the percentage of 34.0%, 32.2% and 17.6 % respectively. The majority of students are studying in $4^{th}$, $3^{rd}$ and $2^{nd}$ years as the percentage of 40.8%, 34.7% and 17.6% respectively.

Most of the students have got GPA at 2.51-3.00, 3.01-3.50 and 2.01-2.50 as the percentage 42.8%, 29.7% and 24.6% respectively. The last one, the majority of undergraduates are studying at the faculty of Engineering, the faculty of Industrial Education and the faculty of Science as the percentage 29.0%, 22.8%and 17.2% respectively.

**2. The behavior and the factors that affect the avidity for learning behavior**

**Table 3:** The level of behavior and the factors that affect the avidity for learning behavior

| Behavior and factors | Mean | SD. | Meaning |
|---|---|---|---|
| 1. The avidity for learning behavior | 3.63 | 0.49 | high |
| 2. The learning motivation | 4.00 | 0.48 | high |
| 3. The support of family | 4.26 | 0.55 | high |
| 4. The curriculum support and the teaching activities | 3.88 | 0.55 | high |
| 5. The learning resources | 3.93 | 0.57 | high |

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The table 3 shows the sample group that there is the avidity for learning behavior at mean as a high level equal to 3.63. In addition, there are the factors that affect the avidity for learning behavior at a high level of all variables by descending order as follows: the support of family, the learning motivation, the learning resources, and the curriculum support and teaching activities at mean as equal to 4.26, 4.00, 3.93 and 3.88 respectively.

**3. The path analysis**

**Table 4:** The value of Direct Effect: DE, Indirect Effect: IE and Total Effect: TE

| External variables/ Internal variable | Internal variables | | | | | |
|---|---|---|---|---|---|---|
| | The learning motivation | | | The avidity for learning | | |
| | DE | IE | TE | DE | IE | TE |
| The support of family | .26* | - | .26* | - | .12* | .12* |
| The support of curriculum and teaching activities | .40* | - | .40* | .12* | .18* | .30* |
| The learning resources | .11* | - | .11* | .26* | .05* | .31* |
| The learning motivation | - | - | - | .45* | - | .45* |

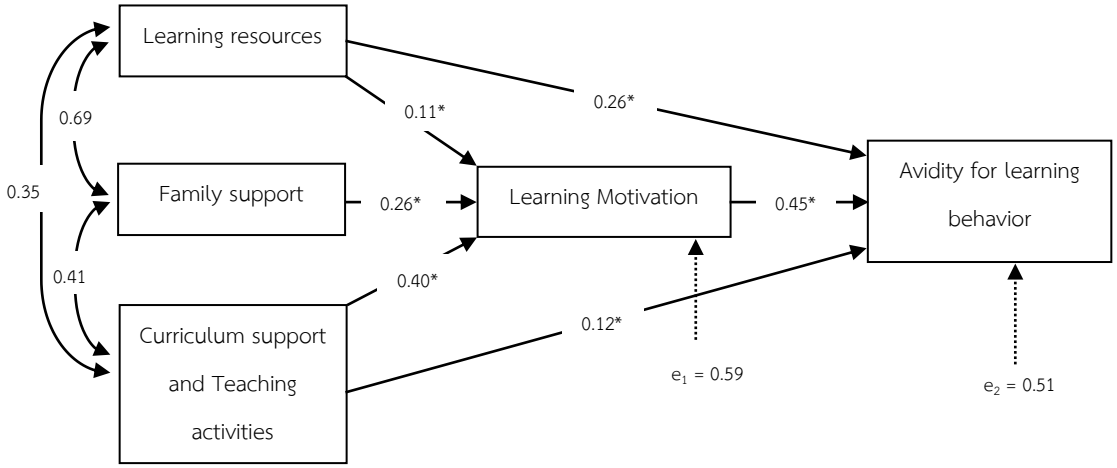
*As a significant statistic at the level of 0.05.

The table 4 shows the structural equation of 1st model that there is the learning motivation as this variable, found that all independent variables including the support of family, the support of curriculum and teaching activities, and the learning resources are the direct effects which are all positive. The support of curriculum and teaching activities influences to the learning motivation at the highest effect value as equal to 0.40. The subordinate variables are the support of family at the effect value as equal to 0.26 and the learning resources at the effect value as equal to 0.11 respectively.

The structural equation of 2nd model that there is the avidity for learning behavior as this variable, found that all independent variables including the support of family, the support of curriculum and teaching activities, and the learning resources are both direct and indirect effect values which are all positive. The learning motivation (mot) influences the avidity for learning behavior at the highest direct effect value as equal to 0.45. The subordinate variables are the learning resources there is the direct effect value as equal to 0.26 and indirect effect value as equal to 0.05. The support of curriculum and teaching activities, there is the direct

effect value as equal to 0.12 and indirect effect value as equal to 0.18. The support of family, there is the indirect effect value as equal to 0.12 respectively.

In addition, the structural equation of these models can explain the variance in the avidity for learning behavior of undergraduate students equal to 69.5%. As the factor model that affects this behavior of students at King Mongkut's Institute of Technology Ladkrabang and shows the path-coefficient as figure 2.




$X^2$=3.40, df=1, P-value=0.06507, RMSEA=0.079

**Figure 2**: The model of factors that affect the avidity for learning behavior of undergraduate students at KMITL and Path-coefficient

**The conclusion and discussion**

In this research found that the sample has the avidity for learning behavior at mean as a high level equal to 3.63. Due to, this sample has been promoted by various factors, as well as, obviously, the result of factors analysis that affect the avidity for learning behavior at a high level in all variables by sorting out the most are as follows: the support of family, the learning motivation, the learning resources, and the support of curriculum and teaching activities (mean as equal to 4.26, 4.00, 3.93 and 3.88 respectively).

The result of path analysis found that the factors that affect the avidity for learning behavior at the highest direct effect value are the learning motivation as equal to 0.45. The subordinate factors are the learning resources, there is the direct effect value as equal to 0.26 and the indirect effect value through the learning motivation as equal to 0.05; the support of curriculum and teaching activities, there is the direct effect value as equal to 0.12 and the

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indirect effect value through the learning motivation as equal to 0.18. The support of family, there is the indirect effect value through the learning motivation as equal to 0.12.

When considering the internal variable as the mediator variable that is the learning motivation and found that all external variables, there is the direct effect value toward the avidity for learning behavior at the highest effect value as equal to 0.40. The subordinate factors are the support of family at the effect value as equal to 0.26 and the learning resources at the effect value as equal to 0.11. This result shows that all factors as above are important and affect to students to have the avidity for learning behavior and the learning motivation finally.

The result accord with the article of Prajak Kuecharoen (2003: 20-23) as mentioned, that the role of family can support the avidity for learning behavior of children. It also is consistent the article of Bang-on Kertdam (2006: 46-47) and Ansari Changlek and Thanyapa Palanukulwong (2015: 23-38) as mentioned, that the variables affect the avidity for learning behavior of students such as learning motivation, reading habit, rearing, self-control, and learning activities. All factors that affect to students to pay attention their learning, especially, learning motivation and learning activities including the rearing of family that help to cultivate this behavior for them as well.

This accord with Affan Jete and others (2006: 184-199) found that in case of there is the learning management to high school students as according to science concept, technology and social, it will expand the basic education opportunities for them. They will pay attention and try to find the knowledge by themselves. Furthermore, they will have the creativity and join to learn in group process like as co-learning. They can learn together and take their knowledge to adapt and use in everyday life.

In addition, this is consistent the article of Pirun Chinachot and Thirawat Chantuk (2015: 864-876) mentioned that the proposal of teaching and learning management in order to reduce boredom in study of students, there are three elements of knowledge management as follows:

1. The development of learning processes, instructional media and tools, the assignment that has the objectives and easy to understand.

2. The activities that help to develop and adjust the attitude and behavior, making the good understand in the group, the seminar, the field trips, the relationship activities and the group recreation activities.

3. The activities of mental development, creating motivation, driving force of learning confidence, honoring, admiration, create encouragement and giving a reward.

It accords with Atreyi Kankanhalliand and others (2001: 123-134) mentioned that the role of technology as a learning source which found that if someone has time and opportunity to access the data source. It will affect to use that data source as well.

## Recommendations

### 1. The recommendations for applications

The result of this research found that the support of curriculum and teaching activities, there is the highest influence toward the learning motivation that affects the avidity for learning behavior. So, the researcher would like to offer how to encourage students to be inquisitive. The instructors or the representatives of various extra-curricular activities have to aware of the learning process and providing the activities to students that emphasize to seek the knowledge by their own, they should know the way to search the information more than just getting the knowledge.

This research found that the support of family has got the influence toward the learning motivation and affect to the avidity for learning behavior of students as well. Therefore, the researcher proposes that the family should be a role to support their children to learn, search any information and push them to be intellectual, it will affect them to be successful in learning and they will be the persons who interest to get knowledge all time.

In addition, another result of this research found that the learning resources, there is the influence to the learning motivation and also affect toward the avidity for learning behavior of students. Thus, the researcher would like to propose the opportunity for students to access the learning resources, both within institutions and outside institutions, such as search on the internet appropriately. This is a good way to give the opportunity for them to get new knowledge all time.

### 2. The recommendations toward further research

Conduct the in-depth study or the qualitative research on how to support the avidity for learning behavior, according to the factors that found in this research. It will show the processes or methods more completely.

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