

ความสัมพันธ์ระหว่างการพูดกับตนเองกับแรงจูงใจใฝ่สัมฤทธิ์ในการเรียน ของนักศึกษาระดับปริญญาตรี  
มหาวิทยาลัยราชภัฏพิบูลสงคราม

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บทความวิจัย

รับต้นฉบับ: 21 เมษายน 2566

รับตีพิมพ์: 6 มิถุนายน 2566

การวิจัยครั้งนี้เป็นการวิจัยเชิงสหสัมพันธ์ (correlational research design) มีจุดมุ่งหมายเพื่อ 1) ศึกษาการพูดกับตนเองและสภาวะทางอารมณ์ของนักศึกษา และ 2) ศึกษาความสัมพันธ์ระหว่างการพูดกับตนเองกับสภาวะทางอารมณ์และแรงจูงใจใฝ่สัมฤทธิ์ในการเรียนของนักศึกษามหาวิทยาลัยราชภัฏพิบูลสงคราม กลุ่มตัวอย่าง คือนักศึกษาระดับปริญญาตรีที่ลงทะเบียนเรียนในรายวิชามนุษย์สัมพันธ์สำหรับครู และรายวิชาพฤติกรรมมนุษย์กับการพัฒนาตน จำนวน 148 คน ได้จากการเลือกแบบเจาะจง โดยใช้เกณฑ์การกำหนดขนาดตัวอย่างจากการประมาณจากจำนวนประชากร โดยประชากรจำนวนหลักร้อย ขนาดของกลุ่มตัวอย่าง 15% ของจำนวนประชากรทั้งหมด เครื่องมือที่ใช้ในการวิจัย ได้แก่ แบบทดสอบการพูดกับตนเอง แบบวัดอารมณ์ และแบบวัดแรงจูงใจใฝ่สัมฤทธิ์ในการเรียน วิเคราะห์ข้อมูล โดยใช้ค่าเฉลี่ย และ Pearson's product moment correlation

### ผลการวิจัย

1. ผลการศึกษาค่าเฉลี่ยการพูดกับตนเองและสภาวะทางอารมณ์ของนักศึกษา พบว่า นักศึกษามีแนวโน้มที่จะพูดกับตนเองในเชิงกระตุ้นให้มีความตั้งใจ ( $M = 3.66$ ) มากกว่าการพูดกับตนเองในเชิงกดดัน ( $M = 1.92$ ) และพบว่า นักศึกษามีสภาวะทางอารมณ์ด้านบวก ( $M = 3.79$ ) มากกว่าสภาวะทางอารมณ์ด้านลบ ( $M = 1.99$ )

2. ผลการศึกษาความสัมพันธ์ระหว่างการพูดกับตนเองกับสภาวะทางอารมณ์ของนักศึกษา พบว่า การพูดกับตนเองในเชิงกระตุ้นให้มีความตั้งใจ และการพูดกับตนเองในเชิงกดดันมีความสัมพันธ์ทางลบในระดับปานกลางอย่างมีนัยสำคัญทางสถิติที่ระดับ .001 ในขณะที่ลักษณะการพูดกับตนเองมีความสัมพันธ์กับสภาวะทาง

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อารมณ์อย่างมีนัยสำคัญทางสถิติที่ระดับ .001 โดยหากมีการพูดกับตนเองในเชิงกระตุ้นให้มีกำลังใจจะมีความสัมพันธ์ทางบวกกับสภาวะทางอารมณ์ด้านบวก (ความสัมพันธ์ระดับสูง) และจะมีความสัมพันธ์ทางลบกับสภาวะทางอารมณ์ด้านลบ (ความสัมพันธ์ระดับปานกลาง) ในขณะที่การพูดกับตนเองในเชิงกดดันจะมีความสัมพันธ์ทางบวกกับสภาวะทางอารมณ์ด้านลบ (ความสัมพันธ์สูง) และมีความสัมพันธ์ทางลบกับสภาวะทางอารมณ์ด้านบวก (ความสัมพันธ์ปานกลาง) และเมื่อวิเคราะห์ความสัมพันธ์ระหว่างการพูดกับตนเองกับแรงจูงใจใฝ่สัมฤทธิ์ในการเรียน พบว่า แรงจูงใจใฝ่สัมฤทธิ์มีความสัมพันธ์ทางบวกกับการพูดกับตนเองในเชิงกระตุ้นให้มีกำลังใจ (ความสัมพันธ์ระดับต่ำ) ขณะที่มีความสัมพันธ์ทางลบกับการพูดกับตนเองในเชิงกดดัน (ความสัมพันธ์ระดับต่ำ)

**คำสำคัญ:** การพูดกับตนเอง สภาวะทางอารมณ์ แรงจูงใจใฝ่สัมฤทธิ์

## THE CORRELATION BETWEEN SELF-TALK AND LEARNING ACHIEVEMENT MOTIVATION OF BACHELOR'S DEGREE STUDENTS AT PIBULSONGKRAM RAJABHAT UNIVERSITY

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Research Article

Received: 21 April 2019

Accepted: 6 June 2023

This study aimed to investigate the relationship between self-talk and emotional states of students, as well as the correlation between self-talk, emotional states, and learning achievement motivation among students at Pibulsongkram Rajabhat University. The sample for this correlational research consisted of 148 Bachelor's Degree students enrolled in Human Relations for Teachers and Human Behavior and Self-Development courses, selected using purposive sampling. The criteria for determining the sample size were estimated from the population of hundreds, 15% of the total population was selected as the sample. The study employed three research instruments: a questionnaire on self-talk, a questionnaire on emotional assessment, and a questionnaire on learning achievement motivation. Data analysis statistics were mean and Pearson's product moment correlation.

The results revealed mean scores for students' self-talk and emotional states a tendency of students' engagement in more encouraging self-talk ( $M = 3.66$ ) than pressured self-talk ( $M = 1.92$ ). Additionally, the findings indicated that students tend to experience more positive emotional states ( $M = 3.79$ ) than negative emotional states ( $M = 1.99$ ).

The correlation analysis showed that a statistically significant negative correlation exists (at the moderate level) between encouraging self-talk and pressured self-talk ( $p < 0.001$ ). Furthermore, the correlation between self-talk and emotional states also has

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statistically significant ( $p < 0.001$ ). Specifically, when self-talk was encouraged, it was positively correlated with positive emotional states (with a high correlation) and negatively correlated with negative emotional states (with a moderate correlation). On the other hand, when self-talk was pressured, it was positively correlated with negative emotional states (with a high correlation) and negatively correlated with positive emotional states (with a moderate correlation). When the correlation between self-talk and learning achievement motivation was analyzed, the results indicated a low positive correlation between encouraging self-talk and learning achievement motivation, and a low negative correlation between pressured self-talk and learning achievement motivation.

In conclusion, this study highlighted the importance of self-talk and emotional states in students' learning achievement motivation. The results indicated that encouraging self-talk was positively correlated with positive emotional states and learning achievement motivation, while pressured self-talk was negatively correlated with these outcomes. Therefore, educators and counselors should provide guidance to students to cultivate positive self-talk and emotional states, which may enhance their motivation and academic success.

**Keywords:** self-talk, emotional states, learning achievement motivation

## Introduction

The present-day society is characterized by numerous competitions, whether in the workplace or in academic settings. Such competitions stimulate individuals to utilize their competencies, exert effort, and display enthusiasm in order to attain predetermined targets. Achievements, however, are influenced by multiple factors, one of which is motivation. In particular, learning achievement motivation is an important form of motivation that significantly impacts academic outcomes. Students with high levels of learning achievement motivation tend to have a desire to enhance their knowledge and skills, leading to better academic performance relative to their peers. Students who make an effort to improve themselves and strive to achieve their own goals have a greater likelihood of success in their studies and achieve better academic results compared to students with low levels of learning achievement motivation. (Kasetchail el al, 2007 cited in Sujin Permpituk and Tadsaneenad Limsuthiwanpoom, n.d). According to Goetz and Hall (2013), it is possible to compare how individuals can achieve higher learning achievements by considering their educational outcomes in a specific subject. This process involves setting goals to attain higher levels of learning achievement motivation, which, in turn, promotes perseverance, balance, and effectiveness in various activities. Failing to have such ambitious learning goals may result in lower study outcomes. Research conducted in Thailand and foreign countries has found a significant correlation between personal learning achievement motivation and various outcomes, such as personal achievement, group achievement, and economic growth of the country. Individuals with high levels of learning achievement motivation tend to exhibit a superior working appearance across three dimensions: working quality, working endurance, and working achievement expectancy that matches their competencies. (Atkinson, 1978 cited in “The academic training in creating the learning achievement motivation for work”, n.d.) which relates with the statement of Whittaker (1970), cited in Sujin Permpituk and Tadsaneenad Limsuthiwanpoom, n.d). Encouraging learners to exhibit enthusiasm and a commitment to acquiring knowledge is crucial for achieving objectives. Achievement motivation plays a pivotal role in stimulating individuals to engage in activities,

demonstrating perseverance, resilience, and patience when faced with obstacles in task completion. The cultivation of achievement motivation is an acquired skill that can be developed through the organization of the learning process. Creating a conducive environment that fosters self-motivation is a key component in the process of developing achievement motivation for learners (Khamkhunasai, 2014). This, in turn, contributes to the enhancement of learning, as well as future success in academic pursuits, professional endeavors, and overall effective living. Hence, motivation serves as a significant driving force in the behavior of individuals aiming to foster personal growth and effectiveness (Moungpan & Hatthasak, 2017). This is because learning achievement motivation leads to an increased power to compete, exert effort, and concentrate on the work. Various factors can influence the learning achievement motivation of students, including emotional states towards studying, teacher-student relationships, and parental support (Pranee Lumbensa, 2006, p. 3-4). Additionally, research conducted by Paul C. Burnett (1999, p.195) revealed that a teacher's positive speech towards a student was directly correlated with the student's positive self-talk and self-concept in mathematics and learning. Moreover, a teacher's positive speech towards a student was indirectly correlated with the self-concept in the student's reading subject, as the teacher's positive speech directly affects oneself. Self-talk is another important factor that can influence personal motivation.

Self-talk is a cognitive process that contributes to the creation of the environment of perception (Oliver, Markland, Hardy & Petherick, 2008), making it a fundamental factor in personal creation (Fernyhough & Fradley, 2005 cited in Oliver, Markland, Hardy & Petherick, 2008). Self-talk words can be categorized into two types: 1) Internal self-talk, which refers to talking within one's own mind, and 2) External self-talk, which refers to talking without audible voices (Hardy et al, 2005 cited in Oliver, Markland, Hardy & Petherick, 2008). This study focused on two types of self-talk, namely reveal and conceal. Previous self-talk research has primarily examined physical education students, and has found that positive self-talk can have a positive effect on sport skill (Kolovelonis, Goudas & Dermitzaki, 2012). For instance, Hardy, Hall, Gibbs, and Greenslade (2005) found that motivated self-talk had a

positive effect on self-efficacy in athletes performing sit-ups. Moreover, self-efficacy is positively related to performance, which has also been demonstrated in studies across different subjects. For example, Burnett (2003) found that positive self-talk positively affected students' reading and math performance. Psychologically, self-talk is believed to affect personal behavior, particularly in the case of positive or motivated self-talk, which can empower individuals to achieve their goals, concentrate, and remain determined. Conversely, negative self-talk can lead to despair, undermine individuals' ability to use their full potential, and result in failure (Thanaporn Panich, 2011).

Furthermore, engaging in self-talk can impact an individual's emotional state, which exhibits a broad range of diversity and polarity. The structure of emotional states is influenced by the individual's experiential style, resulting in distinct alterations in the flow of mental processes (i.e., mental activity). These changes often reflect aspects of personality, character, vital functioning, and physical well-being. Emotions are an essential part of all kinds of human activity, all kinds of psychological processes and states (Yerkinbekova, M. A., Kasumova, R. S., & Fedorovich, O., 2014).

Emotion exerts a substantial influence on the cognitive processes in humans, encompassing perception, attention, learning, memory, reasoning, and problem-solving. Attention, in particular, is significantly modulated by emotion, as it regulates attentional selectivity and serves as a motivating force for action and behavior. Nevertheless, the effects of emotion on learning and memory are not consistently unidirectional, as empirical studies have revealed that emotion can both enhance and impair learning and long-term memory (LTM) retention, contingent upon a multitude of factors. Given the pervasive nature of emotional experiences and their notable significance in academic contexts, emotions play a crucial and far-reaching role in modulating nearly every aspect of cognition. Consequently, the impact of emotion on learning processes has become the focal point of numerous ongoing investigations. While the influence of emotions on memory retention and retrieval is well-established, the extent to which emotions affect the learning process remains a subject

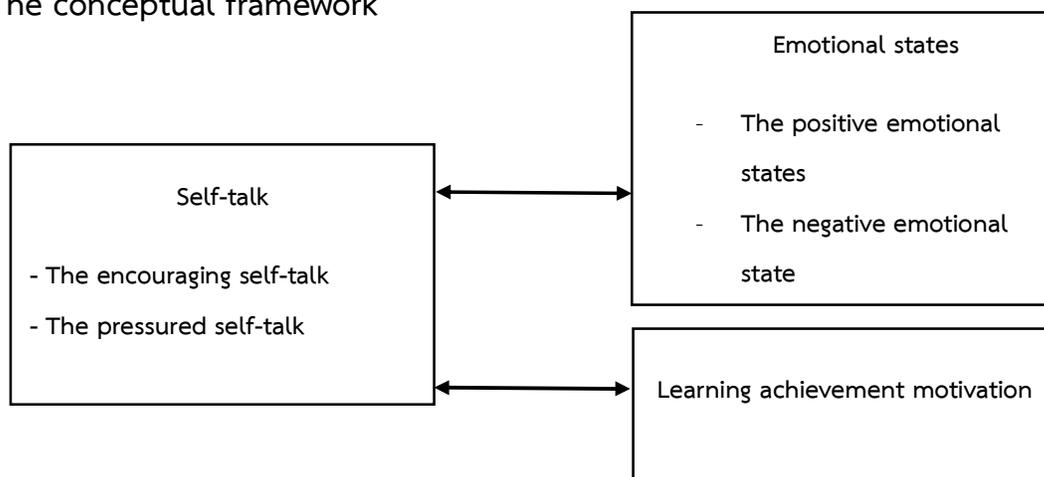
of inquiry (Tyng et al., 2017). Certain studies have reported that positive emotions facilitate learning and contribute to academic achievement, mediated by levels of self-motivation and satisfaction with learning materials (Um et al., 2012).

Based on teaching experiences, it has been observed that students studying the same subject exhibit varying levels of motivation in class. Some students lack intention, arrive late or are absent, and often delay submitting their homework or fail to submit at all. Conversely, other students are enthusiastic, attentive, and actively participate in the study. The researcher believes that the primary reason for this difference is the students' learning achievement motivation. Given that learning achievement motivation is a crucial factor in student achievement, the researcher is interested in investigating the correlation between self-talk and learning achievement motivation among Bachelor's degree students at Pibulsongkram Rajabhat University.

### The Research Objective

1. To study the self-talk and the emotional states of the students at Pibulsongkram Rajabhat University
2. To study the correlation between the self-talk and the emotional states and the learning achievement motivation of the students at Pibulsongkram Rajabhat University.

### The conceptual framework



## The Research Methodology

### 1. The population and sample

The population and sample were the 148 Bachelor's degree registered students in the subject of the Human Relationship for Teacher and the Human Behavior with the Self-Development. The purposive sampling was used in this research. The criteria for determining the sample size were estimated from the population, by the population in the hundreds, the sample size is 15% of the total population (Srisa-at, 1992). The criteria utilized for the sample selection were as follows: (1) inclusion of undergraduate students currently enrolled in both the Human Relations for Teachers course and the Human Behavior with the Self-Development course, (2) assessment results indicating a low to moderate level of achievement motivation in learning, and (3) expressed willingness to participate in the research.

### 2. The scope of the research

#### The research variables

The independent variable in this study is the interpretation of self-talk, which was categorized into two types: 1) encouraging self-talk and 2) pressured self-talk.

The dependent variables in this study included:

1. Emotional state, which was further divided into two types: 1) positive emotional states and 2) negative emotional states.
2. Learning achievement motivation.

### 3. The research tool

3.1 The self-talk test of Oliver et al (2008) which was translated by Hatsadin Keawwichit (2013) by divided into 2 parts as follows: Part 1 is the sample's general information. Part 2 is the 11 items of the self-talk questionnaire which are consisted of the pressured content and the motivated content.

3.2 The emotional measure form was tested by the validity for the positive emotion at .829, and the negative emotion at .762.

3.3 The rating scale measure form of the 20 items in learning achievement motivation which was adapted from Sujin Permpituk and Tadsaneenad Limsuthiwanpoom

are consisted of 5 scales which are the completely agree, mostly agree, moderately agree, slightly agree.

#### 4. The data collection

4.1 The researcher clarified the research objectives with the samples, and explained the details in the procedure of the self-talk and the learning achievement motivation test.

4.2 The 7 weeks of the teaching, the researcher asked the sample to do the 11 items of the self-talk test and the 20 items of the learning achievement motivation measure form.

4.3 The 14 weeks of the teaching in each subjects, the sample did the test again as the week 7.

4.4 When the self-talk and the learning achievement motivation test at the second times were completed, the researcher collected the data and bring the result to analyze for the next step.

#### 5. The data analysis

The data were analyzed by using the mean and Pearson's product moment correlation.

### The research results

1. The study result of the mean in the self-talk and the emotional states of the Bachelor's degree students at Pibulsonkram Rajabhat University which the results are shown in the table 1 as follows:

**Table 1** The mean score of the self-talk and the emotional states.

Variable	N	M	S	Min	Max
The encouraging self-talk	148	3.66	.59	1.67	5.00
The pressured self-talk	148	1.92	.76	1.00	4.00
The positive emotional states	148	3.79	.63	1.33	5.00

The negative emotional states	148	1.99	.70	1.00	4.33
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From the table 1, it was found that the students trended to have the encouraging self-talk (M = 3.66) more than the pressured self-talk (M = 1.92), and found that the students had the positive emotional states (M = 3.79) more than the negative emotional states (M = 1.99).

2. The study result of the correlation between the self-talk and the emotional states and the learning achievement motivation of the Bachelor's degree students at Pibulsonkram Rajabhat University which the results are shown in the table 2 as follows:

**Table 2** The mean, the standard deviation and the correlation between the self-talk and the emotional states and the learning achievement motivation.

	1	2	3	4
1.The encouraging self-talk				
2.The pressured self-talk	-.621**			
3.The positive emotional states	.815**	-.637**		
4.The negative emotional states	-.587**	.755**	-.635**	
5.The learning achievement motivation	.321**	-.186**	.358**	-.218**

\*\* p < .001

From the table 2, it showed the values of the correlation between the variables as the pair which found that both of the 2 self-talk types were negative correlated at a moderate level with statistically significant at 0.01 level. Meanwhile, the correlation between

self-talk and the emotional states were statistically significant at 0.001 level, and found that the encouraging self-talk was the positive correlation with the positive emotional states (High correlation), and it was negative correlation with the negative emotional states (Moderate correlation). While the pressured self-talk was the positive correlation with the negative emotional states (High correlation), and it was negative correlation with the positive emotional states (Moderate correlation).

Analyzing the correlation between the self-talk and the learning achievement motivation found that the learning achievement motivation was the positive correlation with the encouraging self-talk (Low correlation). Meanwhile, the negative correlation with the pressured self-talk (Low correlation).

## Discussion

1. The study result of the self-talk with the students at Pibulsongkram Rajabhat University emotion found that the encouraging self-talk was positively correlated with the positive emotional states, and negatively correlated with the negative emotional states. Meanwhile, the pressured self-talk was positively correlated with the negative emotional states, and negatively correlated with the positive emotional states which relate to the study of Oliver who studied the correlation between the self-talk interpreting towards the emotional states of the 146 Bachelor's degree students of sport science major (The average ages was about 19 years old) by using the self-talk test which was divided into the informational self-talk and the pressured self-talk (Oliver, Markland & Hardy, 2010: 307-323). The emotional states test (The international positive and negative affect scale short form: I-PANAS-SF) was divided into the positive emotion (Awake feelings) and the negative emotion (Resisting feelings). The anxiety test (State-trait anxiety inventory: STAI-Y6) and the assessment of the experiences in classroom and understanding in the study form which found that the informational self-talk was positively correlated with the positive emotional states. Whereas, the pressured self-

talk was positively correlated with negative emotional states and the anxiety. Furthermore, there was the finding of the correlation between the pressured self-talk and the experience in the classroom or understanding in the study towards the anxiety and the negative emotional states.

2. The study result of the correlation between the self-talk with the emotional states and the students' learning achievement motivation in the study found that the positive learning achievement motivation with the encouraging self-talk. Meanwhile, the negative correlation with the pressured self-talk which means the high learning achievement motivation student trended to have the encouraging self-talk in the study which relates to the appearance of the high learning achievement motivation people which means those people should have the endurance, and never give up to the obstacles. Conversely, the more you try to win over the obstacles by yourself, the more you will be proud. (Termsuk Katawanich, 2003). So, the high learning achievement motivation students shall have the encouraging self-talk method while they were studying, even in period of being bored or too difficult to understand, but those students were able to self-talk for creating the encouraging in order to overcome the boring and the difficulty from the study which relates to the work of Kolovelonis, Goudas & Dermitzaki, 2012: 221-235 who studied the result of the self-talk and the targeting towards the self-control in the study of Darts skill of the 85 grade 5 and 6 students, who had no Darts experiences. The samples were divided into 5 groups which were consisted of group 1 was targeting in the process aspect and the self-talk. Group 2 was targeting the process aspect and without the self-talk. Group 3 was targeting in the working result and the self-talk. Group 4 was targeting in the working result and without the self-talk. Group 5 was the controlling group which was trained as normal. The proportional stratified sampling method was used, and the three darts per a person were given, the data were collected through the assessment of the dart-throwing performance, the assessment form of the self-efficacy perceiving, the assessment form of the satisfaction, the assessment form of the enjoyment, and the assessment form of the self-talk manipulation check which found that the self-talk had the good influence towards the student's Darts performance, whether in the process

targeting or the work when compared to the without self-talk group. It showed that the self-talk affected the effective work, and achieved the target which was one of the learning achievement motivation appearances.

## Suggestion

From this study, realized that the self-talk was correlated with the students' learning achievement motivation which if the students have the encouraging self-talk, they will have the high learning achievement motivation. So, the related person should give the knowledge in order to let the students understand that the positive self-talk can increase the study and the work performance including with the study atmosphere which will support the students' self-talk technic development.

For future research, it is strongly recommended to undertake a study aimed at validating the conceptual framework. This can be achieved through the application of Structural Equation Modeling (SEM) in conjunction with the utilization of behavioral variables as dependent measures. Should the findings of the study be substantiated by the structural model, they will serve as a robust basis for the development of activities that effectively foster desired behaviors and enhance students' skill acquisition.

## Reference

- Burnett, P.C. (1999). **Children's self-talk and academic self-concepts: The impact of teacher's statements.** Educational Psychology in Practice, 15[3], 195-200.
- Burnett, P.C. (2003). **The impact of teacher feedback on student self-talk and self-concept in reading and mathematics.** Journal of Classroom Interaction, 38[1], 11-16.

- Goetz, T. & Hall N. C. (2013). **Emotion and Achievement in the classroom**. In J. Hattie & E. M. Anderman (Eds.). *International guide to student achievement*, 192-195. New York: Taylor & Francis.
- Hardy, J., Hall, C.R., Gibbs, C., & Greenslade, C. (2005). **Self-Talk and Gross Motor Skill Performance: an Experimental Approach**. *Athletic Insight The Online Journal of Sport Psychology*, 7(2), 1-13.
- Katawanich, T. (2003). **The general psychology**. Bangkok: SE-ED
- Khamkhunasai, P. (2014). **Integrated Learning Process for Developing Thinking Skills Higher Education Students**. Songkla: Daofilm Graphic.
- Kolovelonis, A., Goudas, M., & Dermitzaki, I. (2012). **The effects of self-talk and goal setting on self-regulation of learning a new motor skill in physical education**. *International Journal of Sport and Exercise Psychology*, 10[3], 221-235.
- Lumbensa, P. (2006). **Factor affecting towards the learning achievement motivation of the grade 3 student at the Private Islamic School in Pattani** (Thesis master's degree). Songkla: Prince of Songkla University.
- Moungpan, N. & Hatthasak, M. (2018). **A Synthesis of Researches on Achievement Motivation in Education Settings between 2005 - 2015**. *Dusit Thani College Journal*, 11(3), 151-167. Retrieved from <https://so01.tci-thaijo.org/index.php/journaldtc/article/view/118618>
- Oliver, E. j., Markland, D., Hardy, J., & Petherick, C. M. (2008). **The effects of autonomy supportive versus controlling environments on self-talk**. *Motivation and Emotion*, 32, 200-212.
- Oliver, E. j., Markland, D., Hardy, J. (2010). **Interpretation of self-talk and post-lecture affective states of higher education students: A self-determination theory perspective**. *British Journal of Educational Psychology*, 80, 307-323.

Panich, T. (2011). **Self-talk**. Sport Psychology Bulletin, 8(55), 8-9.

Permpituk, S., & Limsuthiwanpoom, T. (n.d). **The learning achievement motivation of the first year student**, Faculty of accounting, Bangkok University.

Srisa-at, B. (1992). **Preliminary Research** (3rd ed.). Bangkok, Thailand: Suweeriyasan Press.

The training project of creating the paradigm and the appearance of the new age government officer. **The academic training in creating the learning achievement motivation for working.**

Tyng, C. M., Amin, H. U., Saad, M. N., & Malik, A. S. (2017). **The influences of emotion on learning and memory**. Frontiers in psychology, 1454.

Um, E., Plass, J. L., Hayward, E. O., and Homer, B. D. (2012). **Emotional design in multimedia learning**. J. Educ. Psychol. 104, 485–498. doi: 10.1037/a0026609

Yerkinbekova, M. A., Kasumova, R. S., & Fedorovich, O. (2014). **A Study of Emotional States Students**. International Journal of Humanities Social Sciences and Education (IJHSSE), 1(2), 41-47.