The Relationship between Teachers Motivation and Physical Education Teaching Strategies among Primary School Teachers in Southern Thailand

Singha Tulyakul[1*], Mohd. Sofian bin Omar - Fauzee[2], Fauzi bin Hussin[3] and Hareesol Khun-inkeeree[4]

[1] Postgraduate student, Doctor of Philosophy (Education), School of Education and Modern Language, Universiti Utara Malaysia[*]; Lecturer at Department of Health and physical education, Thaksin University
[2] Professor Dr., School of Education and Modern Language, Universiti Utara Malaysia
[3] Associate Professor Dr., School of Education and Modern Language, Universiti Utara Malaysia
[4] Dr., School of Liberal Arts, Walailak University, Thailand.
[*]**Corresponding author, E-mail:** singha2125@hotmail.com

Abstract

Teacher motivation is a critical factor in physical education (PE) teaching in primary school. However, a previous study on a primary school in Thailand found that teachers generally lack motivation for teaching and ignore their PE classes. In addition, the PE teachers focus more on sports skills and competition and are unable to create new teaching methods. This could then influence their effectiveness in teaching. Thus, there is need to investigate the relationship between teacher motivation and teaching strategies. The instruments used for data collection were two questionnaires, namely The Autonomous Motivation for Teaching Questionnaire (AMTQ) and The Self-Evaluation of Teacher Effectiveness Questionnaire in Physical Education (SETEQ-PE). The survey design was adapted to collect data. The respondents were 269 PE teachers from primary schools in Southern Thailand. The data were analyzed using two statistical software namely, the Statistical Package for Social Sciences (SPSS) version 23 for preliminary data analysis and the Partial Least Square- Structural Equation Modeling (PLS-SEM) version 3 which was used to investigate the structural equation model. This study found that there are significant relationships between external, identified, and intrinsic motivation with teaching strategies. On the order hand, there is no significant relationship between the introjected motivation and the teaching strategies among primary school teachers. This study provides empirical evidence to support the importance of teacher motivation and teaching strategies and to encourage teachers to increase their motivation for teaching in order to develop more effective PE teaching. However, the respondents of the study were teachers in primary schools in Southern Thailand provinces; hence, the scope and context of the results of the study apply only to teachers in those areas.

Keywords: Teacher Motivation, Physical Education teaching, teaching strategy, Southern Thailand

Introduction

Some diseases such as obesity can be prevented by exercise (Booth, Roberts & Laye, 2012; Wang et al., 2017), which students must recognize and acknowledge to enable them to realize the benefits of exercise, which is covered by Physical Education (PE) taught in schools. This is because PE aims for students to exercise and engage in physical activities such as sports. Thus, PE teaching and learning process in schools should be highly effective.

Due to the nature of physical education, general classrooms may include gymnasiums, courts, pools, track and fields, and football fields. Students then have to move to a bigger size classroom, an open field or a big space to enable them to move around based on their needs (Cothran & Kulinna, 2015). Thus, several factors influence the improvement and effectiveness of physical education teaching. One of the main factors is teacher motivation. According to Tulyakul, Omar-Fauzee and Hussin (2018), motivation for teaching is a key influence and has a positive relationship with teaching effectiveness. A teacher who lacks motivation leads to ineffective teaching (Muranda, Ncube, Mapolisa & Tshabalala, 2015; UNESCO, 2015). Moreover, Ofoegbu (2004) argues that teacher motivation is an essential element for an effective classroom. Furthermore, the results from Ofoegbu's study confirmed that most of the respondents agreed that teacher motivation is a necessary element in determining classroom effectiveness. Therefore, encouraging and interested teachers are important in providing effective education (Hornstra, Mansfield, van der Veen, Peetsma & Volman, 2015).

Nevertheless, the Secretariat of Education (2010a; 2010b; 2010c) found that Thai teachers were ineffective, had truancy problems, and lacked the motivation to work. Moreover, physical educators disregard their classroom because they focus on upgrading their position and salary (Kwanboonchan, 2015). They hardly had the incentive to teach. Hence, it is a challenge to investigate their motivation for teaching because high motivation positively affects effective teaching and motivated teachers (UNESCO, 2015).

Not only does teacher motivation affect PE teaching but teaching strategies are very important to develop greater effectiveness in teaching PE. According to Husain, Hasan, Wahab and Jantan (2015), teachers who can create their teaching methods are effective teachers. Moreover, Kyrgiridis, Derri, Emmanouilidou, Chlapoutaki and Kioumourtzoglou (2014) argue that teaching strategies can help evaluate the effectiveness of PE teaching. On the other hand, it has been found that PE teachers in primary schools still focus on developing sports skills for competition (Maieam, 2003). Additionally, Nampai (2015) also found that the teaching approaches of teachers currently do not provide a clear understanding of the importance of physical education, and they also decrease interest and participation in PE classes.

Unfortunately, empirical studies that investigate the relationship between teacher motivation and teaching strategies are limited. Thus, it is necessary to examine the relationship between teacher motivation and teaching strategies in PE classes among primary schools in Southern Thailand in order to develop effective PE teachers and support the efficiency of students' learning in Thailand.

Objectives of study

This study aims to examine the relationship between teachers' motivation and physical education teaching strategies among primary school teachers in Southern Thailand. The study focuses on the dimensions of teachers' motivation aspects, namely external, introjected, identified, and intrinsic motivation in relation to PE teaching strategies.

Research Hypotheses

Ho 1: There is no significant relationship between external motivation and teaching strategies.

Ho 2: There is no significant relationship between introjected motivation and teaching strategies.

Ho 3: There is no significant relationship between identified motivation and teaching strategies.

Ho 4: There is no significant relationship between intrinsic motivation and teaching strategies.

Literature Review

Motivation for teaching

The issue of teacher motivation deserves specific study due to the importance of the teacher's character in the lives of the students and in the society. (Stirling, 2014; UNESCO, 2015). Similarly, motivation can also increase cognitive process. According to Kong (2014), motivation can usually influence what and how the information is processed. Furthermore, motivation, as stated by Bhoje (2015), will result in the enhancement of energy as well as the effort to do things. Consistent with, Suhag, Larik, Tagar, and Solangi (2016) assert that motivation can intensify the commencement and sustainability of events for example, teachers continue with teaching their students during their free time and try to perform other activities concerning their job. Thus, it is essential to study the motivations for teaching because low motivation and ineffective teachers affect teaching negatively.

Autonomous Motivation for Teaching

Self-Determination Theory (SDT) is a theory of human motivation in the organismic or humanistic tradition (Deci & Ryan, 1985). It is suggested that there are three keys principal in SDT namely; amotivation, extrinsic motivation and intrinsic motivation. Firstly, the *amotivation*, in which a person there is no autonomous, without pressure to communicate of, lack of control and is probably struggling to have any of their wishes met. Secondly, there are four elements of extrinsic motivation namely; (a) *External regulation*, in which the motivation that to get the reward, praise or avoid the punishments when to do something. (b) *Introjected regulation,* the individual who has this regulation inspires an individual to enact a behavior is do something because if not do, will fear and shame. (c) *Identified regulation,* refer to behavior that acknowledges and recognize in their activities. The PE teacher is working because she believed that teaching is essential for her. (d) *Integrated regulation* is the person is beginning to be inspired through intrinsic sources and want to be self-aware and act in congruence with his or her core values and feel of self. Lastly, the intrinsic motivation which consist of one regulator; that is intrinsic regulation. The *intrinsic regulation* is driven by internal reason, and when he or she does something it is purely because interest, happy and enjoyment.

The Roth, Assor, Kanat-Maymon, and Kaplan (2007) autonomous motivation for teaching is adapted from the Self-Determination Theory (SDT)'s framework (Deci & Ryan, 1985), which has two dimensions: autonomous and controlled motivation. The autonomous motivation for teachers used all the SDT regulations motivation (intrinsic, external, introjected and identified regulation), except amotivation and integrated regulation. This is because an amotivation was not counted because it is neither autonomous nor controlled motivation. In terms of the integrated regulation was not examined because the previous studies (e.g., Blais, Lachance, Vallerand, Briere & Riddle, 1993; Pelletier, Séguin-Lévesque & Legault, 2002); Roth et al., 2007; Ryan & Cornell, 1989) did not distinguish between identified and integrated regulations.

There are two elements of autonomous motivation for teaching namely; autonomous and controlled motivation (Roth et al., 2007). In particular, the autonomous motivations are intrinsic and identified regulation, whereas controlled motivations include external and introjected regulations. There are differences between autonomous and controlling forms of motivation. This difference is sometimes perceived by reflecting and looking at the basis or root of the behavior of individuals in a given situation (Legault, 2017). According to Roth (2014) autonomous motivation refers to behaviors implemented with a feel of commitment and select. It includes two dimensions, namely intrinsic and identified regulation.

On the other hand, controlling motivation opposes intrinsic motivation in the self-determination continuum. It engages in the behavior induced by external reinforcement such as obtaining a reward or avoiding punishment (Ryan & Deci, 2000). In parallel external regulation lies introjected regulation which reflects behavioral engagement induced by perceived internal pressures, for instance, avoiding shame or guilt or gaining contingent self-worth or pride (Wouters, Verschueren, Briers, van der Kaap-Deeder, Deeren & Vansteenkiste, 2016).

Teaching strategies

Garza, Alejandro, Blythe, and Fite (2014) pose that accomplished teachers ensure students' success by focusing their instructions on students' individual needs and interests. Besides, teachers also demonstrate care and concern for each student. Teachers vary their pedagogical approach strategically to provide students with authentic connections to their content area (Paterson, Dumont, Lafuente & Law, 2018). Additionally, Egeberg, McConney, and Price (2016) emphasize that accomplished physical education teachers should utilize effective teaching practices. As mentors, such teachers develop meaningful relationships with their students to help them overcome difficulties, accept challenges, and achieve previously unattainable goals. Accomplished teachers demonstrate skills and creativity when using instructional tools to target students with varied learning styles including visual, auditory, read-write, or kinesthetic. This thereby supports effective instructions to all students (Gentry, 2013). Physical education teachers thoughtfully determine which approach will assist each student in the most productive way. They differentiate certain instructions to ensure participation and encourage student success at all levels (Whipp, Taggart & Jackson, 2014).

Bevans, Fitzpatrick, Sanchez, Riley, and Forrest (2010) suggest that physical education teachers should employ local resources to engage students in different learning experiences. The teachers may thus conduct a class session at a public golf course. They could also encourage students to participate in a regional fun run. Through physical education associations, alliances, and initiatives, teachers connect their students with other learners worldwide. As a result, students will become more involved in effective and creative programs sponsored by the larger health and fitness community. Moreover, accomplished teachers use different educational strategies and settings in an attempt to motivate and encourage students to participate in challenging physical activities (Eather, Morgan & Lubans, 2013).

Methods

Study Design

This study employed a quantitative method and cross-sectional sectional research design, involving physical education teachers who are teaching the physical education class in primary schools in Southern Thailand as participants. The objectives of this study were to investigate the relationship between teacher motivation and teaching strategies. The instruments include two questionnaires to collect data concerning the purposes of the present investigation.

Population

The population of this study comprises all physical education teachers who teach physical education classes in large government primary schools in Southern Thailand. It is worth noting that there were approximately 699 teachers in 322 large primary schools in all 14 provinces of Southern Thailand in the school year 2017 (Education Management Information System, 2016).

Research sampling, as defined by Bryman and Bell (2003), is “the segment of the population selected for investigation or a subset of the population” (Bryman & Bell, 2003; p. 93). According to Krejcie and Morgan’s (1970) sampling table, the sample size for this study was 248 physical education teachers. Moreover, the researcher had an oversampling of 20 percent which led to 298 overall samples. The justification for oversampling was aimed to prevent losing participants due to unreturned questionnaires, incomplete responses and questionnaires with missing (Vaughan, 2017).

After determining the number of the participants using stratified random sampling, the total number of the respondents who teach in primary schools in the provinces was determined through simple random sampling. According to Berger and Zhang (2005), through this sampling, everyone in the large population has an equal chance of being chosen. The researcher used simple random sampling to select the samples.

Data Collection Method

This study used self-administered questionnaires method and post service to collect data. A total of 298 physical education teachers from primary schools in Southern Thailand responded to the questionnaires. Two hundred and sixty-nine were returned, while 29 sets were not returned. Moreover, two hundred and fifty-eight were completed. However, 11 sets had problems.

Instruments

Two questionnaires were used to collect data in this study. The first one was The Autonomous Motivation for Teaching Questionnaire (AMTQ) adapted from Roth et al. (2007) was employed to collect data on the teacher motivation aspect. The second one, the Self-Evaluation Teacher Effectiveness in Physical Education (SETEQ-PE) questionnaire, was adapted from Kyrgiridis et al. (2014) which was used to collect data on teaching strategies. The questionnaires had the reliability values of 0.86 and 0.89 respectively.

Data Analysis

The data collected from the respondents were analyzed using two statistical software, namely Statistical Package for Social Sciences (SPSS) version 23 used for preliminary data analysis and the Partial Least Square- Structural Equation Modeling (PLS-SEM) version 3 which was used in examining the formation of reflective measurement model and structural equation model.

Table 1 Frequency and Percentage of Respondents based on Gender, Age, Name of Academic Major, Teaching Experience.

Profile	Factors	Frequency	Percentage
Gender	**Total**	**258**	**100 %**
	- Male	203	78.7%
	- Female	55	21.3%
Age	**Total**	**258**	**100%**
	- Less than 25	15	5.8%
	- 26 to 35	73	28.3%
	- 36 to 45	86	33.3%
	- More than 46	84	32.6%
Academic Major (Bachelor's degree)	**Total**	**258**	**100%**
	- Physical Education	171	66.3%
	- Sport Science	30	11.6%
	- Health Education	8	3.1%
	- Elementary Education	11	4.3%
	- Other	38	14.7%
Teaching Experience	**Total**	**258**	**100%**
	- Less than 2 years	34	13.2%
	- 3 to 6 years	40	15.5%
	- 7 to 10 years	53	20.5%
	- 11 to 14 years	40	15.5%
	- More than 15 years	91	35.3%

Results

Assessment of Measure Model

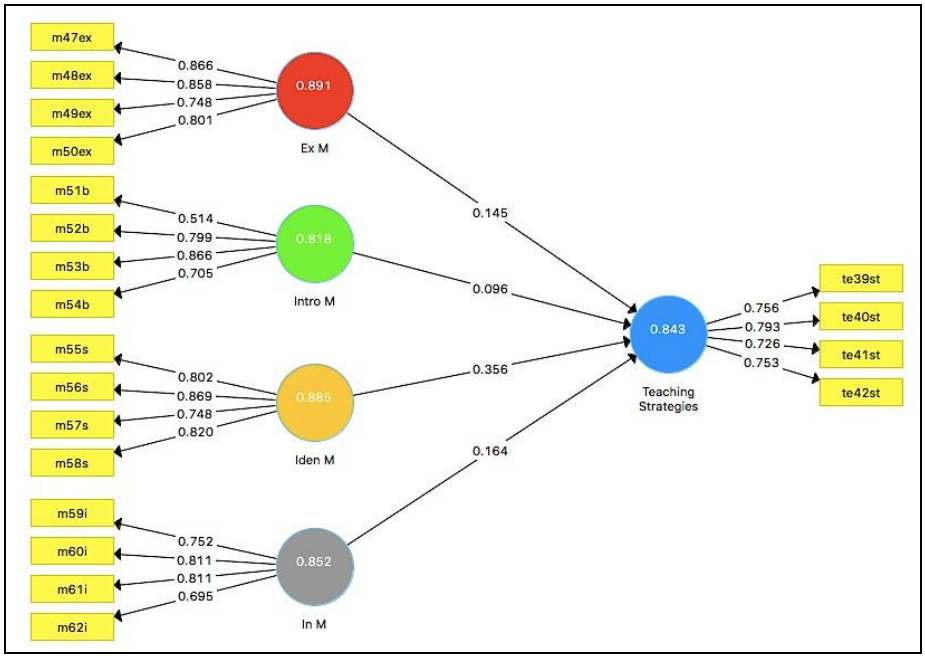

Figure 1 Measurement model using PLS-SEM algorithm.

Model 1

Assessment Model Analysis Result

Figure 1 demonstrates the results of the analyzed data in assessment model. In terms of the evaluated data based on the measurement model, there are four processes to assess, namely internal consistency reliability, reliability of indicators based on external loading values, ascertaining convergent validity, and discriminant validity.

Table 2 Summary of Standardized Loading, Composite Reliability (CR), and Average Variance Extracted (AVE)

Construct	Composite Reliability	Average Variance Extracted (AVE)	Convergent validity
Ex M	0.891	0.672	Yes
Intro M	0.818	0.537	Yes
Iden M	0.885	0.658	Yes
In M	0.852	0.591	Yes
Teaching Strategies	0.843	0.574	Yes

Table 2 shows the results of the measurement model. The composite reliability values for the four constructs were at 0.843 to 0.891. Hair et al. (2017) stated that composite reliability value should be more than 0.7. The AVE values were 0.537 to 0.672, which is in line with the range recommended by Hair et al. (2017) for AVE, that it should be at least 0.5 for each variable to be sufficient. Thus, all the results indicate that the model in this study has achieved the required criteria.

Table 3 The Fornell-Larcker Criterion Analysis for Checking Discriminant Validity of First-order Constructs

	Ex M	Iden M	In M	Intro M	Teaching Strategies
Ex M	**0.820**				
Iden M	-0.002	**0.811**			
In M	0.110	0.544	**0.769**		
Intro M	0.235	0.504	0.387	**0.733**	
Teaching Strategies	0.185	0.493	0.411	0.373	**0.757**

AVE>r^2 (Hair et al., 2017)

Table 3 demonstrates the Fornell-Larcker's measure. The AVE square root values in the first order constructs should be more than the correlations among all the other variables (Fornell & Larcker, 1981), which is evident through the results that found the value of AVE which is greater than the value of all the constructs below it.

Table 4 The Heterotrait Monotrait (HTMT) Criterion for Discriminant Validity

	Ex M	Iden M	In M	Intro M	Teaching Strategies
Ex M					
Iden M	0.096				
In M	0.139	0.679			
Intro M	0.370	0.622	0.518		
Teaching Strategies	0.200	0.610	0.540	0.487	

HTMT <0.85 (Henseler, Ringle & Sarstedt, 2015)

The table 4 shows the Heterotrait Monotrait criterion of correlation (HTMT). Henseler et al. (2015) stated that the HTMT value of correlation should not be more than 0.85. In this study, the HTMT values are less than 0.85.

Structural Model Assessment

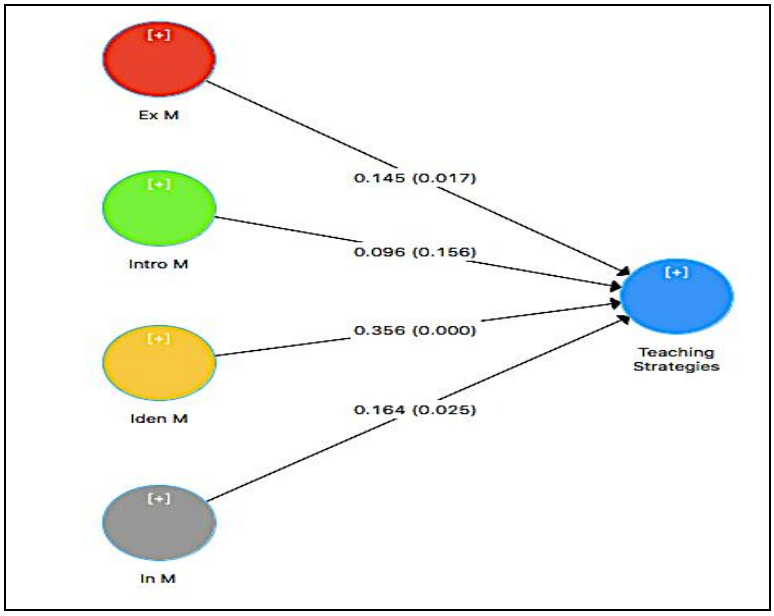

Figure 2 Structure model using PLS-SEM bootstrapping procedures.

Table 5 Assessment of Significant Relationship in First Order Structural Model

Hypothesis	Relationship	Std. Beta (β)	T Values	P Values	Finding
Ho 1	Ex M ⟶ Teaching Strategies	0.145	2.774	0.017	*Significance
Ho 2	Intro M ⟶Teaching Strategies	0.096	1.517	0.156	Not Significance
Ho 3	Iden M ⟶ Teaching Strategies	0.356	5.070	0.001	*Significance
Ho 4	In M ⟶Teaching Strategies	0.164	2.320	0.025	*Significance

Note: * Significance at P<0.05 (2-tailed)

Table 5 illustrates hypothesis assessment using bootstrapping PLS-SEM. The results show that there is a significant relationship between external motivation (Ex M) and teaching strategies (β = 0.145, T = 2.774, P<0.05) and identified motivation (Iden M) and teaching strategies (β = 0.356, T = 5.070, P<0.05), and intrinsic motivation (In M) and teaching strategies (β = 0.164, T = 2.320, P<0.05). Meanwhile, there is no significant relationship between introjected motivation (Intro M) and teaching strategies (β = 0.096, T = 1.517, P>0.05). Therefore, hypotheses 1, 3, and 4 are significant. On the order hand, hypothesis 2 is not significant.

Conclusion and Discussion

The findings confirm that there is a significant relationship between teacher motivation and teaching strategies among primary school teachers in Southern Thailand. The results show that the dimensions of external, identified, and intrinsic motivation have significant relationship with teaching strategies among primary school teachers in Southern Thailand. This is because most of the respondents graduated with a bachelor's degree in physical education (66.3%) and sports science (11.6%).

According to Guajardo (2011), teaching the topic that they are expert in can increase the motivation of the teacher. This is to say, in order to enhance teacher motivation, teachers should be teaching the class which suits their character and in which they are expert (Malouff, Rooke, Schutte, Foster, & Bhullar, 2008). Additionally, Ko (2016) argues that instructors who are expert in their subject are able to impart sufficient knowledge to students. The findings of the present study are consistent with that of Butler and Shibaz (2014); Han, Yin and Wang (2015); Hanson (2011), in that teacher incentive is also correlated with teaching approaches, effective teaching, quality, and students' achievement. Similarly, Tulyakul et al. (2018) found that there is a positive relationship between teacher motivation and teaching effectiveness because if PE teachers had suitable motivation for teaching, it influences positive teaching.

For Hein, Ries, Pires, Caune, Ekler, Emeljanovas, and Valantiniene (2012), internally motivated teachers tend to use more creative teaching designs. Bieg, Backes and Mittag (2011) argue that internally motivated teachers involved in the teaching and learning processes encourage their students. In addition, Mkumbo (2011) stated that interest and desire to help others motivate teachers to be more effective. This is similar to the result of Perlman (2013) who found that motivation toward teaching can be a main construct for the increase of effective teachers. Thus, the school directors or administrators should support their instructors for increased job satisfaction or provide rewards such as extra money and boost their morale.

However, the current study also found that there is no significant relationship between introjected motivation and teaching strategies among primary school teachers in Southern Thailand. Perhaps, this is because the study involved more male than female PE teachers (see table 1). According to Fakhr, Malhan, & Siedaly (2016), the gender of the teacher has an impact on student achievement and teaching approach. Introjected motivation refers to the time when teachers feel guilty, worried, or ashamed when they are teaching. (Anderson, 2016). As a result, the respondents are not worried or ashamed when they are teaching. Instead, the respondents feel happy and have fun in creating new teaching methods in their class. Hence, effective teaching can help

increase teacher motivation. This is because high motivation has a direct influence on teaching effectiveness and is able to increase student achievement (Christopher, 2013).

Even though this study found that there is no significant relationship between introjected motivation and teaching strategies, but should enhance all the other dimensions of teacher motivation. Hence, this study can be helpful for physical education teachers to understand better the methods for increasing teacher motivation in order to improve and develop their teaching strategies. Finally, future research should take into account a greater number of respondents and cover other parts of Thailand so that the results of the study will be more informative. Moreover, the next research should employ mixed methods and include interviews to collect data from teachers in relation to other information such as school budget, school management policy, and job satisfaction.

Reference

Anderson, E. (2016). *5 different types of motivation.* Retrieved from http://www. ehow.com/info_12153839_5-different-types-motivation. html

Berger, V. W., & Zhang, J. (2005). Simple random sampling. *Encyclopedia of statistics in behavioral science*, *4,* 1840-1841. doi.org/10.1002/0470013192 .bsa619

Bevans, K. B., Fitzpatrick, L. A., Sanchez, B. M., Riley, A. W., & Forrest, C. (2010). Physical education resources, class management, and student physical activity levels: A structure-process-outcome approach to evaluating physical education effectiveness. *Journal of School Health*, *80*(12), 573-580. doi: 10.1111/j.1746-1561.2010.00544.x

Bhoje, G. (2015). *The importance of motivation in an educational environment*. India: Laxmi Book Publication.

Bieg, S., Backes, S., & Mittag, W. (2011). The role of intrinsic motivation for teaching, teachers' care and autonomy support in students' self-determined motivation. *Journal of Educational Research Online, 1,* 122-140.

Blais, M. R., Lachance, L., Vallerand, R. J., Briere, N. M., & Riddle, A. S. (1993). The work motivation inventory. *Revue Quebecoise de Psychologie*, *14*, 185-215.

Booth, F. W., Roberts, C. K., & Laye, M. J. (2012). Lack of exercise is a major cause of chronic diseases. *Comprehensive Physiology*, *2*(2), 1143-1211. doi: 10.1002/cphy.c110025

Bryman, A., & Bell, E. (2003). *Breaking down the quantitative/qualitative divide, and combining quantitative and qualitative research.* Oxford: Oxford University Press.

Butler, R., & Shibaz, L. (2014). Striving to connect and striving to learn: Influences of relational and mastery goals for teaching on teacher behaviors and student interest and help seeking. *International Journal of Educational Research,* 65, 41–53. doi.org/10.1016/j.ijer.2013. 09.006

Christopher, N. M. (2013). Teacher motivation as a factor in language teaching and learning in Nigeria. *Journal of NELTA*, *17*(1-2), 14-25. doi.org/10.3126/nelta .v17i1-2.8089

Cothran, D., & Kulinna, P. (2015). Classroom management in physical education. Emmer, E., & Sabornie, E. J. (Eds.). *Handbook of classroom management*, (pp. 239-260). New York: Routledge

Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of research in personality*, *19*(2), 109-134. doi.org/10.1016/0092-6566(85)90023-6

Eather, N., Morgan, P. J., & Lubans, D. R. (2013). Social support from teachers mediates physical activity behavior change in children participating in the Fit-4-Fun intervention. *International Journal of Behavioral Nutrition and Physical Activity*, *10*(1), 1-15. doi:10.1186/1479-5868-10-68

Education Management Information System. (2016). *Education Management Information System.* Retrieved from https://data.bopp-obec.info/emis/index.php

Egeberg, H., McConney, A., & Price, A. (2016). Classroom management and national professional standards for teachers: A review of the literature on theory and practice. *Australian Journal of Teacher Education*, *41*(7), 1-18. doi: ro.ecu.edu.au/ajte/vol41/iss7/1

Garza, R., Alejandro, E. A., Blythe, T., & Fite, K. (2014). Caring for students: What teachers have to say. *ISRN Education*, *2014*, 1-7. doi.org/10.1155/2014/425856

Gentry, R. (2013). *Differentiated instructional strategies to accommodate students with varying needs and learning styles.* Mississippi: Jackson State University Jackson.

Guajardo, J. (2011). *Teacher motivation: Theoretical framework, situation analysis of Save the Children country offices, and recommended strategies.* Ryde, UK: Save the Children Basic Education Intern.

Fakhr, S. M. M., & Malhan, Z. (2016). The effect of teachers gender on emotional and social justment of elementary school male students. *International Journal of Humanities and Cultural Studies (IJHCS).* 783-789

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research, 18*(1), 39-50. doi.org/10.2307/3151312

Hair, J.F., Hult, G.T.M., Ringle, C.M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modelling (PLS-SEM)* (2nd ed.). Thousand Oaks: Sage Publications.

Han, J., Yin, H., & Wang, W. (2015). Exploring the relationship between goal orientations for teaching of tertiary teachers and their teaching approaches in china. *Asia Pacific Education Review,* 16, 1–11. doi:10.1007/s12564-015-9392-7

Hanson, E. M. (2011). *Educational administration and organizational behavior.* London: Ally and Bacon.

Hein, V., Ries, F., Pires, F., Caune, A., Ekler, J. H., Emeljanovas, A., & Valantiniene, I. (2012). The relationship between teaching styles and motivation to teach among physical education teachers. *Journal of sports science & medicine*, *11*(1), 123-130. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3737859/

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science*, *43*(1), 115-135. doi.org/10.1007/s11747-014-0403-8

Hornstra, L., Mansfield, C., van der Veen, I., Peetsma, T., & Volman, M. (2015). Motivational teacher strategies: the role of beliefs and contextual factors. *Learning environments research*, *18*(3), 363-392. doi.org/10.1007/s10984-015-9189-y

Husain, M. Z., Hasan, A., Wahab, N. B. A., & Jantan, J. (2015). Determining Teaching Effectiveness for Physical Education Teacher. *Procedia-Social and Behavioral Sciences*, *172*, 733-740. doi: 10.1016/j.sbspro. 2015.01.426

Ko, J. (2016). *Effective teaching.* University of Oxford; UK. Education Development Trust

Kong, L. C. (2014). *Nurture intrinsic motivation, inspire students in learning: a study on motivating students to learn in the classroom* (Unpublished Master's Thesis). Nanyang Technological University, Singapore.

Krejcie, R. V., & Morgan, D. W. (1970). Table for determining sample size from a given population. *Educational and Psychological Measurement*, *30*(3), 607-610. doi/abs/10.1177/001316447003000308 ?journal Code=ep ma

Kwanboonchan, S. (2015). *Physical education in Thailand.* Retrieved from http://www.Acpe.askit

Kyrgiridis, P., Derri, V., Emmanouilidou, K., Chlapoutaki, E., & Kioumourtzoglou, E. (2014). Development of a questionnaire for self-evaluation of teacher effectiveness in physical education (SETEQ-PE). *Measurement in Physical Education and Exercise Science*, *18*(2), 73-90. doi.org/10.1080/1091367 X.2013.866557

Legault, L. (2017). Self-determination theory. *Encyclopedia of Personality and Individual Differences*, 1-9. doi:10.1007/978-3-319-28099-8_1162-1

Maieam, K. (2003). *Opinions of mattayomsuksa 3 students on learning and teaching physical education in school in Chonburi educational service area, in office 2 academic year 2003.* (Unpublished Master Thesis). Srinakharinwirot University: Bangkok.

Malouff, J. M., Rooke, S. E., Schutte, N. S., Foster, R. M., & Bhullar, N. (2008). *Methods of Motivational Teaching*. Australia: University of New England.

Mkumbo, K. (2011). *Are our teachers qualified and motivated to teach?.* Tanzania: HakiElimu.

Muranda, A. Z., Ncube, A. C., Mapolisa, T., & Tshabalala, T. (2015). The impact of teacher motivation on teacher effectiveness in Bubi district of Zimbabwe. *British Journal of Education, Society & Behavioural Science 7*(3), 202-210. doi:10.9734/BJESBS/2015/14555

Nampai, U. (2015). *Elementary physical educators' perspectives of curriculum and instruction in the United States and Thailand*. (Unpublished Doctoral dissertation). University of Northern Colorado, Colorado.

Ofoegbu, F. I. (2004). Teacher motivation: A factor for classroom effectiveness and school improvement in Nigeria. *College Student Journal*, *38*(1), 81-90. Retrieved from http://www.freepatentsonline. com/article/College-Student-Journal/1150 34778.html

Paterson, A., Dumont, H., Lafuente, M., & Law, N. (2018). *Understanding innovative pedagogies: Key themes to analyse new approaches to teaching and learning (No. 172).* Paris: OECD Publishing.

Pelletier, L. G., Séguin-Lévesque, C., & Legault, L. (2002). Pressure from above and pressure from below as determinants of teachers' motivation and teaching behaviors. *Journal of educational psychology*, *94*(1), 186-196. doi: 10.1037 //0022-0663.94.1.186

Perlman, D. J. (2013). Effective teaching and motivation: application of self-determination theory. *Journal of Research, Policy & Practice of Teachers & Teacher Education, 3*(2), 31-37. Retrieved from https://ro.uow.edu.au /cgi/viewcontent.cgi?article=1459&context=sspapers

Roth, G. (2014). Antecedents and outcomes of teachers' autonomous motivation: a self-determination theory analysis. In *Teacher Motivation* (pp. 58-73). Routledge.

Roth, G., Assor, A., Kanat-Maymon, Y., & Kaplan, H. (2007). Autonomous motivation for teaching: How self-determined teaching may lead to self-determined learning. *Journal of Educational Psychology*, *99*(4), 761-774. doi.org/10.103 7/0022-0663.99.4.761

Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of personality and social psychology*, *57*(5), 749-761. doi: 10.1037//0022-3514.57.5.749

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary educational psychology*, *25*(1), 54-67. doi:10.1006/ceps.1999.1020

Secretariat of Education. (2010a). *Study report on the analysis of educational development process of schools after first round of educational assessment.* Bangkok: Chulalongkorn University Press.

Secretariat of Education. (2010b). *Study report on the research and development on teacher professional development.* Bangkok: Prikwan Graphic Publishing.

Secretariat of Education. (2010c). *Study report on teacher competency and development guideline on changing jurisdiction.* Bangkok: Prikwan Graphic Publishing.

Suhag, A. K., Larik, R. S. A., Tagar, A. A., & Solangi, S. R. (2016). Student academic motivation of secondary schools Khairpur Mir's. *Academic Research International, 7*(1), 100-109. Retrieved from http://www.savap.org.pk/ journals/ARInt./Vol.7(1)/2016(7.1-11).pdf

Stirling, D. (2014). Teacher motivation. *Aichi Universities English Education Research Journal.* 33: 11-28. Retrieved from https://www.research gate.net/publication/309481949_Teacher_Motivation

Tulyakul, S., Omar-Fauzee, M.S., & Hussin, F. (2018). Teaching motivation and effectiveness among trained and untrained physical educators of Southern Thailand. *International Journal of Development and*

Sustainability, 7(7), 2093-2102. Retrieved from https://isdsnet.com/ ijds-v7n7-03.pdf

UNESCO. (2015). *Rapport mondial de suivisur l'EPT 2015*: *Achievements and challenges.* Paris: UNESCO Press.

Vaughan, R. (2017). Oversampling in health surveys: Why, When, and How? *American Journal of Public Health, 107(8), 1214-1215.* doi:10.2105/ ajph.2017.303895

Wang, C., Wei, Y., Zhang, X., Zhang, Y., Xu, Q., Sun, Y., ... & Shou, C. (2017). A randomized clinical trial of exercise during pregnancy to prevent gestational diabetes mellitus and improve pregnancy outcome in overweight and obese pregnant women. *American journal of obstetrics and gynecology*, *216*(4), 340-351. doi.org/10.1016/j.ajog .2017.01.037

Whipp, P., Taggart, A., & Jackson, B. (2014). Differentiation in outcome-focused physical education: pedagogical rhetoric and reality. *Physical Education and Sport Pedagogy*, *19*(4), 370-382. doi.org/10.1080/17408989.2012. 754001

Wouters, S., Verschueren, K., Briers, V., van der Kaap-Deeder, J., Deeren, B., & Vansteenkiste, M. (2016). The pursuit of self-esteem and its motivational implications. *Psychologica Belgica*, *56*(2). 143-168. doi: 10.5334/pb.277