



## **Contributions of physical education teacher's competences to students learning achievements**

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**Abstract:** This study aims to determine whether the competences of Physical Education (PE) teachers make contributions to the quality of elementary school students learning achievements. It was qualitative descriptive research using a reflective explorative approach. The subject of this study was the PE teachers in elementary schools in Yogyakarta Special Region in 2016 and their contributions to the students' learning achievements. The study involved 60 PE teachers who were subjected to have an FGD (Focus Group Discussion) in some stages. The results show that the average score obtained by elementary school PE teachers in Teacher Competence Test (TCT) stage II in 2016 was 61.79 for the pedagogical competences, and 60.07 for the professional competences. These results could exceed the national average score of 53.7. Based on the interviews with several teachers, the results of the competence tests had not indicated that PE elementary school teachers could improve the students' learning quality. The teachers focused more on their preparations to take the TCT as a part of the assignments to the Learning Teacher program they participated in. This study also reveals that the TCT scores did not make a significant contribution to the students' learning achievements in PE subject. Furthermore, TCT was considered by the teachers as a goal and not as an instrument to improve their competences in the teaching and learning processes.

**Keywords:** Physical Education (PE) teachers, Teacher competences, Pedagogical, Professional, Learning Teacher.

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### **INTRODUCTION**

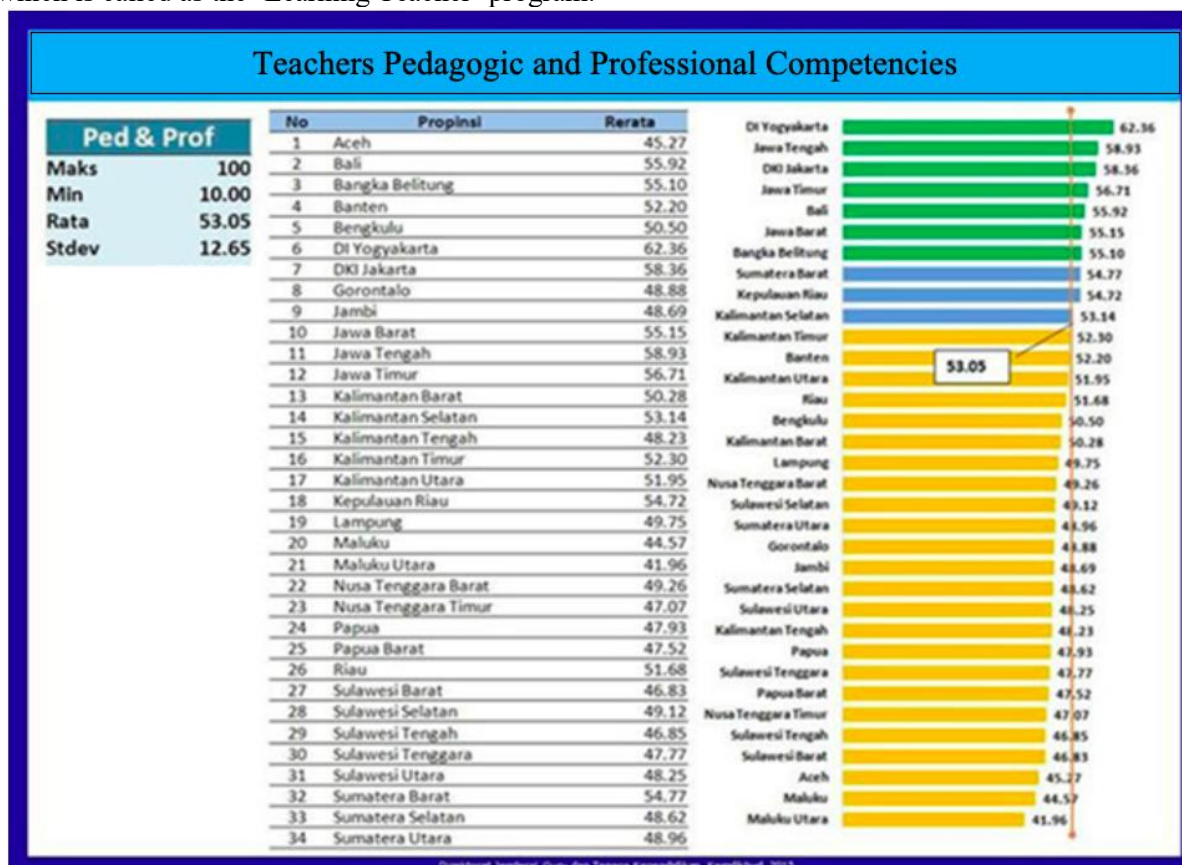
The important roles of Physical Education (PE) teachers in realizing the implementation of quality education as described in Regulation of the Minister of Education and Culture of the Republic of Indonesia No 22 Year 2016 are to plan, implement, and evaluate learning processes in their education unit. PE teachers with their professional roles become one of the important elements in planning and designing learning activities in and/or outside the classroom. This implies that they need to be positioned as workers in professional qualifications of competence, professionalism, performance, commitment, and accountability in carrying out their duties. Research in the field of sport and physical education (PE) has suggested that one of the key functions of organized team sports is the production of a conservative form of masculinity among boys and men (White & Hobson, 2017). Regarding this, to be able to carry out their duties properly, PE teachers have to be given guarantees for the fulfillment of their basic needs as a professional worker through a career and professionalism development, protection in professional dedication, appreciation, and protection for performance achievements, and welfare. Under these conditions, the government is obliged to carry out a planned and systematic development of policies and programs to improve the professionalism quality of the PE teachers.

In 2015, there were 131.983 PE teachers in total taking the Teacher Competence Test (TCT). The results showed that the average score of 40.76 they gained was not satisfactory enough. The highest average score (46.04) was achieved by the teachers in Yogyakarta Special Region. This average score shows that the pedagogical and professional competences of elementary school teachers need to be improved. The following is the 2015 Teacher Competence Test (TCT) result of PE teachers.

The results of the 2015 TCT showed that the national average score achieved was 56.69. This was higher than that of the previous year (47). It also exceeded the 2015 national average score (55) as set



in the Ministry of Education and Culture's strategic plan. Even so, The Ministry of Education and Culture of the Republic of Indonesia, specifically the Directorate General of Teachers and Educational Personnel, was try harder to pursue the target score of 65 set in 2016 (Kementerian Pendidikan Nasional Republik Indonesia, 2016). For this reason, the Directorate General of Teachers and Educational Personnel develops a program based on the 2015 TCT results aimed to improving teachers' competence which is called as the 'Learning Teacher' program.



Source: Directorate General of Teachers and Educational Personnel, the Ministry of Education and Culture of the Republic of Indonesia (2016)

Figure 1. Results of the Teacher Competence Test in 2015

The learning teacher program is an effort to improve teachers' skills that involves government and public participations. The parties involved in this program include local governments, professional associations, universities, industries, community organizations, and students' parents. The public can be involved in various ways such as by supporting the implementation of the Learning Teacher program and facilitating face-to-face, online, and mixed learning.

Learning teachers will always learn and make efforts to upgrade themselves at anytime and anywhere. They continue to learn and develop themselves not for the government or the principal's sake; instead it is because every educator or teacher is a learner in nature. Only from teachers who always want to study and dedicate will a generation of lifelong learners emerge to continuously make contributions to the society and environment. Also, the teacher will continue to learn as long as devotes to the world of education. Therefore, when a teacher decides to stop learning, means stops being a teacher or an educator.

The learning teacher program has been implemented since 2016 in various provinces and regencies throughout Indonesia. It costs a large amount of state budget. Even so, until now there has not been much research of the program in improving the teacher's competences and contributions to the learning quality in schools, particularly in the PE lessons in elementary schools.

The education of students within a PE subject, presents the teacher a range issues beyond the context of a classroom setting including the physical nature of the activities, the use of specific areas and equipment, and the dynamics involved in grouping and organizing students within physical activities (Qi & Ching Ha, 2012).

The problems explored in this study are mentioned as follows: (1) What is the empirical description competences (pedagogical and professional) level of PE elementary school teachers after participating in the Learning Teacher program in Yogyakarta Special Region? (2) What is the empirical description of the students' quality learning achievements? (3) Are there any significant contributions of the PE teachers' (pedagogical, personal and professional) competences to the quality of student's learning achievements?

To know the teacher's competences, a test should be done, intended to obtain information on the teacher's ability to carry out the learning process. Teacher Competence Test (TCT) measures the basic competences on the field of study (subjective and pedagogical matter in the domain content).

The basic competences tested are in accordance with the field of the certification study (for teachers who are certified) and the teacher's academic qualifications (for teachers who have not been certified) (Minister of Education and Culture, 2009). The approach used is a test of mastery on the subject matter taught at the teachers' education unit. Based on the results of the competence test, the teachers' competence profile is formulated according to a certain level which also determines the feasibility of the teacher. Thus, the aim of the competence test is to assess and determine whether the teacher is competent or not based on the tested competence standards.

TCT aimed for mapping the competences as a basis for continuing professional development activities, and as a part of the performance assessment process to get a complete description of the implementation of all competence standards. The functions of TCT are to (1) develop teachers' professionalism standards, (2) be an indicator in selecting teachers, (3) classify teachers, (4) be used as reference materials in a curriculum development, (5) support teacher development, and (6) develop activities and improve learning achievements (Mulyasa, 2013). TCT, which has been implemented in stages since 2012, targets all teachers in schools, both certified and uncertified teachers. The TCT materials are emphasized on the test of pedagogical and professional competence tests. (1) Pedagogical competences include the ability of teachers to explore the students' potential, design and carry out learning, evaluate learning achievements, and develop the students' various potential. The pedagogical competence standards include (a) recognizing the students' characteristics and potential, (b) mastering learning theories and effective learning principles, (c) planning and developing curriculum, (d) implementing effective learning, and (e) assessing and evaluating learning. (2) Professional competences are the ability of teachers which includes knowledge, attitudes, and professional skills. These competences reflect an ability to master the learning material in depth and allow the teachers to guide students to meet the competence standards set in the National Education Standards. In the field of study, professional competences include: (a) mastering the materials, structures, concepts, and mindset of science that support the subject matter, (b) developing professionalism through reflective actions, and (c) showing a consistency in mastering the teachers' materials of the content and performance (texts, contexts, realities, facts, principles, concepts, procedures, and completeness regarding the mastery of philosophy, origin, and implementation of science) (Peraturan Pemerintah Republik Indonesia No 19 Th 2005 tentang Standar Nasional Pendidikan, 2005).

The activities carried out in the teacher competence improvement program are based on strong rational and empirical considerations, so that they can be academically, morally, and professionally accounted. In addition, a competence test is one of the main bases for the design of the teacher competence improvement program. This test focuses on the four aspects that must be owned by a teacher: pedagogical, personal, social, and professional competences. However, in the online TCT, only two competences were tested, namely pedagogical and professional competences.

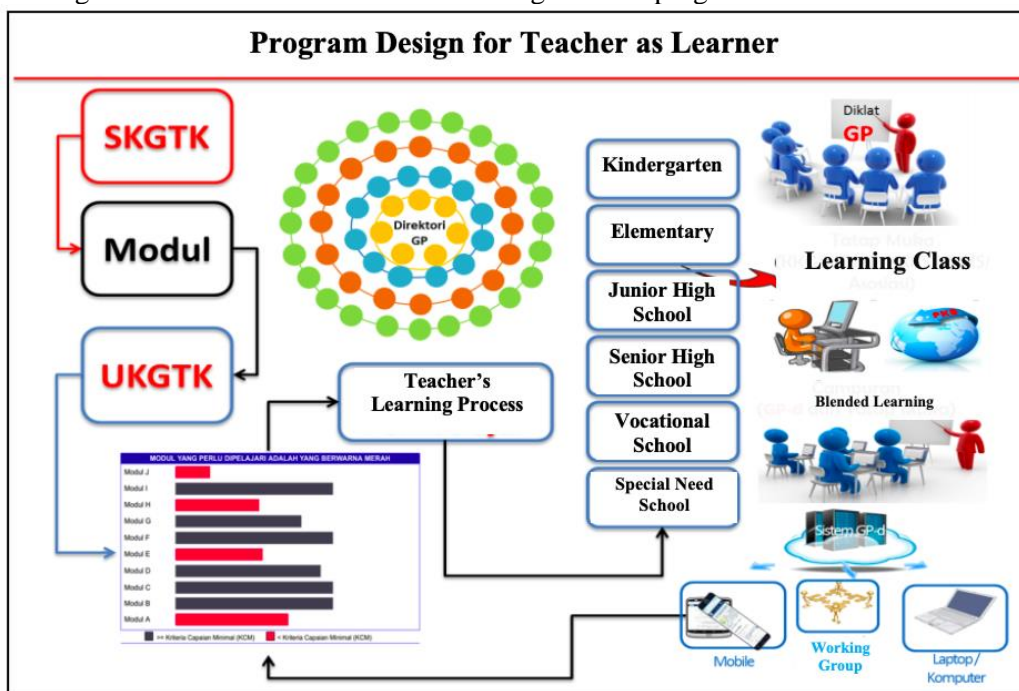
A teacher is a role model for the students so that the impression of a teacher is very influential on the sustainability on the students' learning. A teacher can present a learning process that is interesting, motivating, and inspiring based on teacher knowledge and experiences, that are constantly updated with a variety of positive inputs obtained from various learning resources such as books, television, cyberspace/the Internet, seminars, or education and training. In the learning process, a teacher produces enlightening works and innovations to applied in the learning process. The teacher does not only teach but also educate. As an educator, teachers must have various skills as competences that must be possessed as professional educators (Kementerian Pendidikan Nasional Republik Indonesia, 2016).

The Learning Teacher program involves a process of implementing teaching and learning activities in order to enhance the teacher's ability and competence in carrying out their professional duties. The capacity building includes activities aimed to improve and develop abilities, attitudes, and

skills. It is expected that these activities will positively change the teachers' behaviors which later will give positive impacts on their performance in the teaching and learning process.

This program is designed based on the Teacher Competence Standards which refers to the Regulation of the Minister of Education and Culture of the Republic of Indonesia No. 16 Year 2007 on Academic Qualification Standards and Teacher Competences; No. 27 Year 2008 on Academic Qualification Standards and Counselor Competences; No. 32 Year 2008 on Standards of Academic Qualifications and Competences of Special Education Teachers; and No. 137 Year 2014 on National Standards for Early Childhood Education.

The TCT results become a reference in a self-assessment for teachers related to their competences so that the authority can develop modules to improve their competences, and these results are later regarded as a guide for administrators of the Learning Teacher program to conduct a needs analysis.



Source: Directorate General of Teachers and Educational Personnel, the Ministry of Education and Culture of the Republic of Indonesia (2016)

Figure 2. Path of the Learning Teacher Program

The Learning Teacher program can be conducted through three modes: face to face, online, and mixed modes. Teachers have many ways to get students' attention during the teaching and learning process. They can use a variety of specific skills in certain situations so that the students will focus on the learning materials. The situation as described above is in accordance with the opinion of Ianovici and Weissblueth (2016) stating that “an interaction between different learning levels and the learning practices that are being implemented by the teacher in the learning process. Therefore, individual differences among students must be taken into consideration. These interpersonal differences may be expressed in variables such as the learning level and the student’s motivational level”.

Cuellar-Moreno (2016), claims that “the choice of teaching style is an important decision for teachers because it affects their relationship with the various elements of the didactic act, encouraging the acquisition of cognitive and social skills for configuring various types of subjects. Based on this statement, it can be interpreted that when teaching, a teacher should perform their pedagogical competences in order to help the students learn better.

Along with the teacher's professional responsibility in the learning process, in carrying out teaching and learning activities, teacher is required to always prepare everything related to the learning process. Regarding this, Glow in Van Rossum and Hamer (2010, p. 9) describes a teacher as “To the sleeper, the teacher is the wake-up call of birds at sunrise. To the clay, the teacher is potter, sculptor, and trainer in self-shaping. To the wanderer, the teacher is a knowing guide. To the developed mind, the teacher is colleague, listener, and friend.” these are the things that make teachers must have good

competency standards, because teachers must be able to adjust not only to the content of their learning, but also the various conditions of students as subjects of learning (Richardson, 2012; Van Rossum & Hamer, 2010).

Learning provides activities that are carried out to create an atmosphere or to provide services so that students are able to learn successfully. It can also be viewed as a system if learning consists of objectives, materials, strategies, approaches, and follow-up activities, such as remedial activities. As a process, learning is a set of activities designed by teachers in order to make the students learn. It can be actualized by planning teaching programs and preparing learning instruments (Capel & Whitehead, 2015, p. 160).

The teacher performance quality in the teaching and learning process is determined and influenced by various internal and external factors, such as: education level, experience, quality of personality, environment, and so on. In addition, the teachers in carrying out their duties do not stand alone; instead they interact with other elements that are bound through an atmosphere of partnership to achieve goals that have been set by the institution for cohesiveness. It is very important to improve the effectiveness and efficiency of the teacher group.

Professional teachers are not only required to master the fields of science, teaching materials, learning methods; motivate students; and perform good skills and broad insight of education, but are also required to have a deep understanding of the nature of human and society. For the professional and pedagogical competences, the government conducts a national competence test. This is because these two are the main competences in learning, while personal competences and social competences are the performances that are in the domain of the assessment conducted by the principal.

Likewise in the learning process, teachers must develop a culture and climate of learning organizations which are meaningful, creative, dynamic, passionate, dialogical, and fun for both the students and teachers. Competent and professional teachers are expected to improve the students' learning achievements. Regarding these conditions, it is necessary to conduct research on the contribution of the teachers' professionalism in the subject of Physical Education to the quality of the students' learning achievements. It is assumed that there are positive and significant effects of the professionalism on the improvement of teacher performance as indicated by the students' learning achievements. Academic achievement: The extent to which a student, teacher or institution has achieved their educational goals, commonly measured by examinations or continuous assessment (Donnelly et al., 2016). The more professional and competent a teacher is, the better their performance will be in improving the students' learning achievements.

**METHOD**

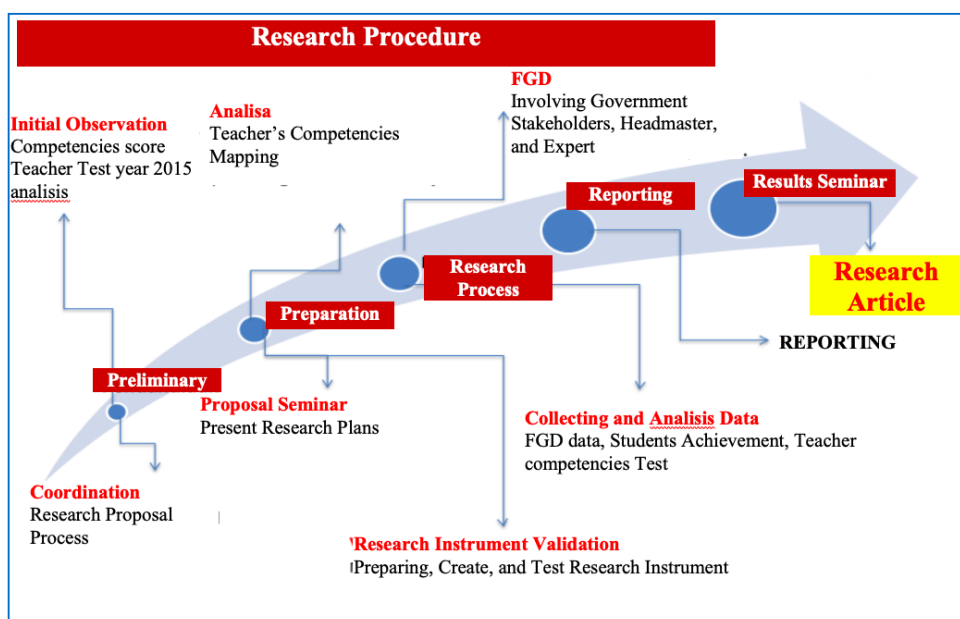


Figure 3. Research Procedure

The use of Educational research and development (R&D) model has the potential to bridges the gap between educational research and practice (Ardiyanto & Fajaruddin, 2019). This research method was a qualitative descriptive study, employing a reflective explorative approach. The subject in this study was the PE teachers in elementary schools in Yogyakarta Special Region in 2016 and their contributions to the students' learning achievements. The study involved 60 PE teachers representing Yogyakarta Special Region as the subjects who conducted an FGD (Focus Group Discussion) in stages to obtain the completeness of the research data. The research procedure is illustrated in the Figure 3.

**RESULT AND DISCUSSION**

**Result**

The data obtained from the results of TCT in 2016 which later became stage II TCT score data in 2016 are presented in the Table 1.

**Table 1.** Results of the 2016 Teacher Competence Test

Sources	Analysis Results		
	Pedagogical Competence	Professional Competence	Total score
Highest Score	84.33	77.75	81.04
Lowest Score	21.75	19.33	20.54
Mean Score	61.79	60.07	60.93
Standard Deviation	11.58	9.81	8.78

The data (Table 1) show that the 2016 stage II TCT had fairly complex variants of data. This is indicated by a fairly high range between the lowest and the highest score. Consequently, the difference between the highest score and the average score of the competences is quite high. Regarding this, it can be concluded that the elementary school teachers' competences in Yogyakarta are very heterogeneous and require special guidance to make it more specific or homogeneous.

When the same sample is compared to the 2015 TCT score, the data obtained are shown in the Table 2.

**Table 2.** A Comparison on the Results of TCT in 2015 and 2016

Sources	Results of Data Analysis					
	Pedagogical Competence		Professional Competence		Total score	
	2015	2016	2015	2016	2015	2016
Maximum Score	96.3	84.33	90.48	77.75	90	81.04
Minimum Score	22.22	21.75	30.16	19.33	28.89	20.54
Mean Score	60.93	61.79	60.30	60.07	60.49	60.93
Standard Deviation	14.69	11.58	11.40	9.81	11.41	8.78

From the comparison of these data (Table 2), can be explained that generally there had been no significant increase in score since 2015, even the highest score tended to fall. The maximum score had an average decrease of 9 points for the average TCT score. The decrease also happened to the lowest score in the different years.

It is also concluded that there is no improvement in competences even though the teachers have attended the Learning Teacher program. The PE teachers in particular are well aware of this fact that there is no increase in their competencies after joining this program. This is caused by the difficulty they encountered in managing their time between teaching and participating in the program.

Although these data cannot be used to measure the effectiveness of the program in a valid way, it can be said that the Learning Teacher program has not been able to improve the PE teachers' scores in elementary schools in Yogyakarta. It is evidenced by the comparison of TCT scores between 2015 and 2016. These were then explored through an FGD by inviting the 2016 TCT participants, education experts, and officers in the Education Department in the regency/city.

Based on these data (Table 3), it can be explained that the TCT scores in those regencies/city were varied although these results were similar in averages except for Bantul regency in which the score in pedagogical competences was significantly higher than that in professional competences. The difference of the scores was 7.61. The data also illustrate the levels of PE teachers' competences which were relatively homogeneous. The PE teachers' TCT scores in the Yogyakarta Special Region was the highest compared to the other provinces. This indicates that the development of competences in Yogyakarta

Special Region can be said to have been well conducted even though the expected results have not been achieved.

**Table 3.** The Results of the 2016 Teacher Competence Test by Regency/City

No.	Regency/City	Pedagogical Competence	Professional Competence	Total Score
1.	Bantul	63.56	55.95	59.75
2.	Gunung Kidul	58.83	59.26	59.23
3.	Kulonprogo	63.95	60.46	62.09
4.	Sleman	50.61	55.71	53.10
5.	Yogyakarta	61.91	59.56	60.74

### Discussion

Contributions in the realm of education cannot be merely judged from the results of the correlation between TCT scores and the students' learning achievements. The meaning of each process in education should be carefully explored. By considering the TCT scores which are fairly high on average and the learning achievements that are quite satisfactory through a correlational quantitative perspective, it can be concluded that there is a significant relationship between the two aspects. However, there seems to be something unexplained. The correlation merely shows results in the form of numbers, so that in other contexts tracing back and discussing further are needed to reveal the problem.

It is common knowledge that physical activity leads to numerous health and psychological benefits. However, the relationship between children's physical activity and academic achievement has been debated in the literature. Some studies have strongly stated about positive relationships between physical activity and cognitive outcomes, while other studies have reported small, negative associations (Fedewa & Ahn, 2011).

In fact, so many sub-competences summarized in both pedagogical and professional competences that are tried to be explored through the FGD activities reveal data that tend to be ironic. Most teachers do not master the details of the competences well, whereas the competence problem should be related to the challenges of future education which do not merely focus on the competence score. Preparing students to face a complex life is also prominent. This is also stated by Hagger and McIntyre (2006, p. 14): there are two important elements in future learning, firstly, the importance of a belief that learning can improve human quality and success in an economic development, and secondly, the importance of an assumption that the learning quality in school is very dependent mainly on the teachers' quality and how they teach.

Furthermore, the results of the discussion process raise a phenomenon that most teachers do not care about the importance of knowing the students' initial abilities. In general, they have assumed that the student admission process with all its indicators is an effort to standardize the quality, so the teachers do not have to consider the students' skills in learning activities. In contrast, Tisch et al. (2011, p. 6) opinion stating that *"integrating physical education instruction into the elementary classroom can take many forms. It can be as simple as the elementary classroom teacher directly providing physical education instruction in class or physical education instruction by the elementary classroom teacher into the core curriculum"*. This opinion suggests that even though physical education has many forms, its implementation must be adjusted by the teacher to suit the students' characteristics and to meet the objectives of the curriculum.

In fact, the teacher has also realized that in the student admission process, there is no physical skill indicator that is used as one of the selection consideration. As expressed by a respondent who stated, "Yes ... we only accept students who meet the specified selection criteria. For example, the students can write their own names, father's and mother's names, and perform simple counting. Such a selection is mostly applied by elementary schools in the process of accepting prospective students. It is different from schools that are relatively short of the number of students. Without considering how many students register and any condition, as long as the students' ages have met the standard and shown learning reports from their kindergarten, they will be accepted." In other words, it can be understood that the students' initial learning abilities related to physical conditions are likely to vary because there is no standard used in the admission process.

The different skills in learning are not an essential problem as long as the teacher understands and is able to provide an effective learning approach to accommodate the existing differences. However, the

problem is when the teacher does not carry out the preliminary evaluation on the students' initial skills. It surely impacts on the learning process that will not be able to meet the individual needs that are possibly diverse. It can be said that the conception of learning as stated by Van Rossum and Hamer (2010, p. 13) should be interpreted as follows: (1) *Learning as the increase of knowledge*, (2) *Learning as memorizing*, (3) *Learning as the acquisition of facts, procedures etcetera, which can be retained and/or utilized in practice*, (4) *Learning as the abstraction of meaning*, and (5) *Learning as an interpretative process aimed at the understanding of reality*.

The largest and probably most significant contribution social psychology has made to research on physical education over the past 30 years has been in relation to motivation (Van den Berghe et al., 2014). Based on this theoretical proposition, the purpose of the present study was to test the effects of a training program for three physical education newly qualified teachers on the aforementioned teachers' overt behaviors and students' psychological needs satisfaction, self-determined motivation and engagement in sport-based physical education (Tessier et al., 2010). There has been growing concern in recent years about the low level of young people's participation in physical activity (PA). Significantly, there has also been a substantial increase in studies investigating students' motivation to participate in Physical Education (PE) and other types of PA, we may speculate therefore about possible links between levels of motivation and participation (Hein et al., 2012).

As a person engaged in an academic world, the theory mastery is an absolute prerequisite that must be understood by someone before entered the realm of praxis. Mastery and comprehension of theories will provide confidence and guarantee for what will be practiced in the field. Moreover, in educational areas, there should be balances between practical and theoretical aspects. In other words, a teacher who claims to be able to present effective learning can certainly be captured from the theoretical mastery of teaching approaches and learning principles.

This is supported by Hagger and McIntyre (2006, p. 31) who state that professionalism of a teacher is an actualization of competences in teaching and shows the capacity to develop learning through innovative actions. This has implications on the teacher training that are directed at an understanding of the learning practices. Ironically, through the FGD activities, it was revealed that most of all teachers involved as respondents did not master the learning theories and learning principles they had ever received in universities as the preparation to become teachers. Furthermore, through some prompts on learning theories and implementations, the teachers finally could mention that they have applied them in teaching processes. This indicates that the ongoing professional improvement which should be the follow up of the post-TCT activities is not well implemented.

In the competence of planning and developing a curriculum, apart from what is being implemented, one surprising thing is revealed in this study. A lot of teachers have never directly read the formulation of the physical education curriculum. Mostly, they read the curriculum from some of the core competences exposed in textbooks, syllabus, and lesson plans that are copied from their colleagues'. "Honestly ... I have never even read the curriculum completely, both the School-Based Curriculum and the 2013 Curriculum", said one respondent who implies a relatively similar thing to some other respondents. From the statements of these respondents, it can be concluded that the curriculum is like the burden that must be carried out in learning and is not considered as a guide in learning. This is in line with Calderhead and Shorrock's statement (1997) that "... *in some countries, there are strong pressures to view teachers as technicians and implementers of a curriculum devised by others, the rhetoric of teachers as reflective practitioners-educators with a purpose, able to take control over their own futures ...*" (Calderhead & Shorrock, 1997, p. 22). Similarly, in our country, understanding a curriculum is a mere rhetoric and the teacher is only limited to be the technicians or curriculum implementers who should be the controller of the curriculum and should design it by referring to future needs.

Various problems such as old ages, complicated administration, or the inability to operate a computer are the classic reasons to run a random and instinctive learning process of PE subject. Moreover, if the lesson plans are only copied from colleagues' or obtained through the Teacher Working Group/Teachers Association, the learning will not be effective. The lesson plan should be made by not only referring to the curriculum and syllabus, but also adjusting to the conditions of the school. If the lesson plan is only copied, it will never be practically appropriate when applied in other schools with different conditions. If it is not, will be impossible to obtain optimal learning goals and other related factors. The association between physical activity, fitness, fatness and academic achievement provides



a unique opportunity to intervene and provide programs that both improve health and academic performance (Donnelly et al., 2016).

Both the quantity and quality of studies on PA and academic achievement have increased markedly in the past 5 years. The experimental studies used stronger study designs and larger sample sizes, and more studies used valid and standardized measures of PA exposure and cognitive and academic outcomes. Despite these gains, however, several research gaps remain (Howie & Pate, 2012).

Games have been recognized as being a good tool to promote learners to actively participate in learning activities. Researchers have indicated that game-based learning could be the best way to trigger students' learning motivation (Yien et al., 2011). In physical education literature, researchers have posited that the strength and quality of students' achievement outcomes (e.g., effort, persistence, performance) are closely linked to their beliefs about their own competence and goal perspectives. According to achievement goal theorists, dispositional achievement goals and perceptions of the motivational climate have been found to interact and affect patterns of motivated behaviors. Generally, achievement goals reflect how individuals evaluate their personal competence in achievement settings and are either self-referent or other-referent, thus formulating two distinct goal states of involvement (Gao et al., 2011).

### CONCLUSIONS

The results show that the stage II TCT scores in 2016 obtained by elementary school PE teachers reached a mean score of 61.79 for the pedagogical competences and 60.07 for the professional competences. This result indicates that the score of the PE elementary school teacher in Yogyakarta Special Region exceeded the national mean score of 53.7. However, these results have not been able to encourage the PE elementary school teachers to improve the learning quality. They focus on preparing themselves to face the TCT as a part of the assignments to the Learning Teacher program they participate in. This study also reveals that their TCT score does not make significant contributions to the students' learning achievements. TCT is regarded by the teachers as a goal and is not considered as an instrument to improve their competences in the teaching and learning process.

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