Teacher who (cannot) Change: Experimental Processes of Physical Education Teachers by means of Pedagogical Innovations at the time of Their Professional Development *

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Abstract

It is known that innovations in the area of physical education at the beginning of the 20th century did not bring about any changes (Evans, 1985). In the meantime, teacher-centered approaches were preferred more even though there were numerous pedagogical alternatives (Ertan & Çiçek, 2003; Demirhan et al., 2008; Ince & Hunuk, 2010). According to Casey (2013), this situation occurred because new innovations still are a "talked about 'future, rather than an "actioned' in physical education (Casey, 2013). It has been stated that one of the reasons why teachers cannot maintain innovations is their need of support (Bechtel & O'Sullivan, 2007). Therefore, this study aimed to investigate physical education teachers' process of experiencing a pedagogical innovation in company with an expert in their professional development process. This qualitative study was designed in the form of participatory action research in order to support the use of Tactical Games Model (TGM) for one year among 7th grade students by two physical education teachers. In this study; teachers initiated professional dialogues with each other and with expert support, and then change is supported with individual teacher inquiries. Teachers were affected by the pedagogical model when they included TGM in their own practices. As a result, teachers are actively involved in the process of learning an innovation and facilitate the adoption of innovation with the help of other teachers and experts.

Introduction

The need for more innovative approaches to improve the quality of learning experiences continues when the literature on Physical education (PE) teaching and learning is considered. A growing number of studies have offered pedagogical models, participatory action methodologies and critical pedagogies as new innovations in PE (O'Sullivan, 2013). Pedagogical models are the leading applications proposed in the PE literature so that students have quality learning experiences (Siedentop, 1992; Lund & Tannehill, 2010; Metzler, 2011). Pedagogical models that are one of these innovations are the design of teaching performed by teachers in order to achieve selected outcomes in the learning

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domains in compliance with teaching strategies; program and subject focus (Kirk, 2013).The implementation of pedagogical models has been included in the curriculum by the Ministry of Education (MONE) in amendments made during the last 10 years in Turkey and it is expected to be used by teachers. Within the scope of the curriculum of a course provided for 1st and 4th grades, name of which is Games and Physical Activities that was lately revised by the MONE (2018), use of the most suitable pedagogical model is suggested for making primary school students to achieve their learning outcomes. Tactical Games Model (TGM) (Mitchell, Oslin, & Griffin, 2013), which is advised for improving game performance ability of primary school students, comes to the forefront as a pedagogical model that reveals why game strategies and tactics, i. e. a certain skill should be performed, rather than how they are performed. Thus, increasing primarily the capacity of students to play games is at the center of this model. In this study, TGM was implemented at primary school level.

While studies about the use of pedagogical models by teachers in their lessons is gradually increasing (Casey, 2012; Kirk, 2012), still teacher-centered implementations and techniques have been preferred for PE teachers' implementations (Evans, 2013; Kirk, 2012; Quennserstedt, 2013; Tinning, 2010), continuation and profundity could not be provided by means of pedagogical models' use in these implementations (Dyson, Griffin, & Hastie, 2004; Kirk, 2010; Penney, 2013). In the qualitative review study by Casey (2014), it was stated that the attitudes, positive emotions and willingness of teachers who used implementations based on the model improved and teachers needed to be supported in order to change. The same study also revealed that the teachers who wanted to make use of these implementations felt as beginning teachers at the beginning of the process, that they returned back to the traditional approach soon after they learned how to use the model and finally that change took time and was difficult for teachers. Briefly, it is stated in the literature that although innovations have been developed towards physical education since the beginning of the 20th century, change and innovation has not been achieved yet (Evans, 1985).

On the other hand, in the latest studies in the literature, Bechtel and O'Sullivan (2007) have stated teachers do not adopt innovations, while Casey (2014) has pointed out that teachers' experiences of using the pedagogical model are more effective when they do cooperation with the researchers. However, when this cooperation lasts for a long time, educational changes occur in implementations of teachers. Therefore, there is need for long-term studies that reveal teachers' learning processes of a pedagogical innovation. In this study, learning process has been defined with the concept of "professional learning", which enables teachers to achieve change by using their creativity and in which they have the role of active learning and maintain continuity in learning (O'Brien & Jones, 2014).

Teacher as Learner

Within the scope of researches, it is advocated that pedagogical models will be the center of PE field in the future (Goodyear, 2013; Kirk, 2012). Along with this, within the scope of researches they were performed on the basis of using model-based approaches; it was found that despite the fact that teachers are eager, they implement the model for a very short time (Casey, 2012; Goodyear & Casey., 2013; Tinning, 2010) and they cannot adopt on teaching with a model (Bechtel & O'Sullivan, 2007). When the studies that were performed for professional development of teachers are examined, it was seen that educational activities are daily workshops (Ko, Wallhead, & Ward, 2006), only the typical factors of the model are professed to the teachers in a theoretical way and short-term courses are targeted to crowded teacher groups (Groundwater-Smith & Mockler, 2009). Therefore, professional development studies which are implemented in such ways are not able to change in implementations of these teachers (Goodyear, 2013). Bechtel and O'sullivan (2007) suggested that reasons of teachers' inability to adapt these innovations should be revealed and period of change in their implementations should be understood in order to contribute to their professional development.

Mainstay of "professional learning of teacher" studies that are performed by focusing on the change of teachers' implementations is in compliance with the concept of "professional development" (Armour, 2010; Groundwater-Smith & Mockler, 2009). In addition to this, "professional development" frequently consists of academic school-based and extra-scholastic courses and they are short-termed

(Keay, 2006). Focusing on "professional learning" that is a part of implementations of teachers, that is supported by certain researches and implementation-based evident and that are conducted with professional learning communities will be effective for observing a change in the implementations of the teachers (Hastie, MacPhail, Calderon, & Sinelnikov, 2015; Keay; 2006). In this way, teachers' adoptions of using an innovation within the scope of their implementations in a continuous way will be simplified and supported.

In the process of implementing pedagogical innovations, It is important that teachers lead the process not only as one of the variables but as a change agent as well. In the literature, the concepts of teacher as researcher (Casey & Kirk, 2010), practitioner researcher (Casey, Fletcher, Schaefer, & Gleddie 2017) and teacher as facilitator in learning processes of teachers or students (Goodyear & Dudley, 2015; Hunuk, 2016) are used for the roles of teachers in this process. The expression of teacher as learner was used in this study based on the concept of professional learning (Armour, 2010) since teachers combine their own implementations with theoretical knowledge and focus on the learning process.

In this study, how to use pedagogical models in the flow of the process is explained through Fullan's (2007) theoretical framework that focuses on changing process of teachers within the scope of professionalization process of the teachers. This framework consists of certain phases such as teachers' learning of the model, their implementation, and their continuity or rejection. Fullan (2007), within the scope of his discussions in the direction of educational changes, stated that teachers in beginning experience initiation phase in using an innovation (introduction of the innovation and teachers' decision process in the direction of using the innovation in their implementations if they think that it will be beneficial for their students and schools), later they pass to implementation of the innovation (placing a new implementation in structures with an idea, program or activity in order to create the change), and later they experience continuity in the use of innovation (process of making the innovation continuous in an implementation performed by the person or group that conducts the implementation) or they experience rejection of the innovation (decision making process in the direction of not pursuing the implementation of the innovation. Within the scope of this study; we researched the processes of starting the implementation of the innovation, implementing the innovation, and phases of pursuing or rejecting.

 In their study on educational change and professional development, Hargreaves and Fullan (2012) have stated that this change process depends on teachers themselves and it will be realistic when carried out in a unique and practical way. It can be said that professional development (Casey, 2014), which could not go beyond the first stage of the professional development framework of Fullan (2007), is a route map in maintaining continuity for teachers. In Goodyear (2013) study, which was conducted based on the framework of educational change towards maintaining continuity in professional development of teachers by Fullan (2007), it was revealed that teachers continued to implement the innovation when they felt themselves motivated, enhanced their students' learning and met the contextual conditions of school. Therefore, it will be important to know what happens in teachers' process of learning an innovation from the beginning and to know how teachers maintain continuity or why they do not maintain it while regulating the variety and process of professional development programs. Within this context, this study is aimed at discovering the viewpoints of PE teachers towards the process of experiencing pedagogical innovations using the Tactical Game Model (TGM).

Method

Research Design: Participatory Action Research (PAR) (Kemmis & McTaggart, 2008, p. 288) is used as the research design in order to support the TGM learning and using process of teachers and to provide their examination. PAR has become a paradigm within the scope of the social nature of action research by providing collaboration between co-participants and by promoting establishment of dialogues. Moreover, in this study, collaboration and dialogue were established between the teachers and researchers as co-participants, therefore, knowledge and understatement of teachers were developed, certain changes were created in their actions, and social relationships were established with

researchers in a social environment (Kemmis & McTaggart, 2008, p. 276). In this context, PAR was actualized in cooperation with teachers and researchers who are represented as co-participants within the scope of each step of loop spirals that is carried on as planning the changes, acting and observation of the process, reflecting these processes and re-planning. So, teachers and researchers regularly forgathered each week, reviewed the previous week and prepared the plans of the following week during these meetings. In the phases of operationalizing, moreover, teachers recorded their courses. In this way, researchers and teachers questioned the processes of action simultaneously. Participatory action research had continued for an academic year.

Research Context: The school in which the study was carried out is a development foundation school that is affiliated to the Ministry of National Education, located in the central province of Ankara. There are kindergarten school, primary school, secondary school and high school grades on the campus of the school, and physical conditions of each grade (course buildings, sports hall) are separated. The study was carried on within the scope of the primary school. Full-time schooling is provided, and PE courses consist of 2 courses (80 minutes) by means of primary school. There are 20 students per class. Due to the fact that only one sports hall is available due to physical conditions of the school (this hall is used for primary and secondary schools), two different classes receive education in a single hall at the same time. There are totally 7 PE teachers at the school.

Participants: 2 PE teachers (Lale and Recep) who represent the department of primary school (between the ages of 6 – 10), 2 different 2nd grade branches (40 students) and 2 different 3rd grade branches (40 students) were participated in the study that performed innovative implementations during the process. As the aim of the study was to research the experiences of PE teachers when they apply a pedagogical innovation, data which consist of the reflections of the teachers were revealed within the scope of the findings. Mrs. Lale had 10 years of teaching experience (it was her 10th year at the school in which the study was carried) and Mr. Recep had 3 years of teaching experience (it was his 1st year at the school in which the study was carried). They participated in this study in the first year of their cooperation at the school in which the study was carried. Due to the fact that profession of Mr. Recep is Tennis, he had been training the school team and a club team out of the school, and TGM was introduced to him for the first time within the scope of this study. Mrs. Lale, moreover, had been interested in dancing as a profession, and it was also her first TGM experience. Along with this, the teachers previously had no experience in the direction of teaching by basing on another model.

Researcher Positionality:

Boundary Spanner (Primary Researcher): First author of this study has a teaching experience of 7 years as a PE teacher, had received TGM trainings during doctorate and had applied this model in various sports branches, and had become a consultant for the students who receive tutorage implementation courses within the borders of the university. In addition to this, the first author had attended to several researchers as a tutoring researcher at the time of performing the duty as a teacher (Hunuk, Ince, & Tannehill, 2013). Moreover, the first author acted as a boundary spanner within the scope of this study. The concept of "Boundary Spanner" that was coined by Thompson (1962) and Aldrich and Herker (1977) is stated as a person who simplifies the use of information in different organizations by distributing and filtering the information. These persons perform information exchange by sharing the important information of their organization with another group that has a different location or function, and they aim at changing the factors and processes of the institution with which they communicate (Ayrancı, 2010, p. 25) and when these persons act in an effective way, they create an innovation of strategy, product or process at the end of this process (Ansett, 2005, p. 39). The first researcher has a part in this study as a person who supports the use of new theoretical information coming from a different Professional institution (University) within the scope of the researches of the teachers.

Expert (Secondary Researcher): The expert who is the secondary author of this study is a faculty member who had a 7-year PE teacher experience and has been working in Physical Education teacher education program in the university. The secondary author provides university courses such as teacher

education and model-based practice in physical education and training of disabled people. This author indigenized the role of facilitator in this study. This person gathered with teachers on weekly-basis and acted as a factor in the direction of training the teachers about the innovation and facilitating the period of implementation by listening to the ideas of participators and simplifying the specific discussions. In addition to this, participant teachers were the students of expert during undergraduate education. Therefore, this fact had contributed to the communication and collaboration, as well as it created an anxiety for the teachers at the beginning of this study. The expert, on this point, frequently stated that her role is to facilitate the process and gave efforts to prove the fact that she is a participant like them, while commenting on or interfering in the process of the study. After each professional learning meeting, the researcher and the expert reflected to each other in a manner of creating strategies for making the teachers feel more relaxed.

Planning, Acting and Evaluation of Participatory Process

*Identification of Pedagogical Innovation (TGM):*Within the scope of this study, TGM (Mitchell et al., 2013, p. 39) was used as a pedagogical innovation. Despite the fact that Mrs. Lale had attended to a professional development program from which she gained some theoretical information on a different pedagogical model, both teachers had no experience in relation to TGM. TGM that is used for this study is a model that is suggested for increasing the game performance of students by providing tactical awareness before learning the skills of a certain sports branch by means of the sports branches that are played with the use of a ball. In this study, moreover, a model in compliance with the courses that include net and wall games which are prepared for primary school level was implemented (Mitchell et al., 2013, p. 105).

Phase of Initiation to Participatory Process: The first phase of Fullan's (2007) study, which represents the meeting point of teachers with innovation, and their decision-making process in the direction of using or not using the innovation depending on whether it will be beneficial for their own implementations, students and schools, consisted of a two-month period which targeted at the introduction of TGM to the teachers. Within the scope of this period, 2-hour professional learning meetings were held each week. The expert who undertook the facilitator role, the researcher who undertook the boundary spanner role and PE teachers participated in these meetings. The aim of the meetings was to develop teachers' understanding of TGM, to prepare course plans peculiar to the model, and to develop action research usage of the participatory teachers. Written and visual materials in relation to TGM were given to the teachers, and basic features of tutoring with TGM were explained in a detailed way. Following the meetings, teachers provided experimental courses. The teachers recorded the experimental courses with a camera and they had the opportunity of questioning the process with the expert in compliance with the format of "what we did?", "what was the meaning of the thing we did" and "what should be done after this" (Sutherland, 2012, p. 112). Thus, teachers completed the adoption period of using an innovation within the borders of their courses thanks to the support that they received from experts and from each other.

Phase of Implementation of Participatory Process: Within the scope of this period, both teachers decided to implement the teaching process of net games of 3rd grade (between the ages of 8 – 9) students with TGM (Mitchell et al., 2013, p. 105). For a term, they taught the 1st and 2nd levels of net games. They used the sports hall by separating it for two different classes for some weeks, while they used the sports hall by not separating and for teaching the lesson altogether for other weeks. Within this period, both teachers preferred to prepare daily plan in collaboration. When they taught their lessons in an integrated way, they implemented the phases of this lesson respectively, and when they taught their lessons in a separated way, they implemented the same plan for different classes. During the process, guidance of the teacher whose experiences were higher in tennis branch was used for the planning phase. In the phase of teachers' passing to implementation process, teachers and researchers continued attending to their professional learning meetings each week. Therefore, teachers continued to perform their questioning and reflections in relation to the lessons which they had taught during the week in collaboration with the researchers. During this period, teachers prepared their own learning plans without the support of the experts and they received the reflection of their students on their own. The

role of the expert and boundary spanner, moreover, was to support the teachers when they asked for help and was to act as a facilitator when they had difficulties in performing the implementations. Except for these, teachers constructed the whole process on their own.

Data Collection Tools: During this longitudinal period (one academic year) which consists the process of participatory action research process that is a process which is included in the research period of several partners by means of personal and professional development, various data-collecting methods were used. These are the voice records of weekly professional learning meetings (the aim of regular, weekly meetings was to talk about the reflection of TGM on teachers when TGM factors are applied for the lessons, discuss the sections which creates difficulties and to increase the awareness of teachers), field notes that were got down by the researcher (informal conversations between the researcher and the teachers when the researcher was available at school), modified version post-lesson teacher analysis tool (PLTA-Annex-1) (Goodyear, Casey, & Kirk, 2013, p. 24) (the aim is to reveal the reflections of teachers by means of the lessons which they implemented) and the pre-post term interview with teachers.

Data Analysis: Data that were collected from different data sources were analyzed through inductive content analysis (Strauss & Corbin, 1998) and constant comparison (Lincoln & Guba, 1985) methods and a thematic coding was performed. Mutual themes of data were revealed.

Trustworthiness of the Research: Triangulation, peer debriefing (Patton, 2002), member checking (Creswell, 2009) methods were used for proving the validity and reliability of the study. Along with these, model fidelity should be provided in order to understand whether the model-based teaching process is in compliance with model implementations or not (Harvey & Jarrett, 2014; Hastie & Casey, 2014). Hastie and Casey (2014) stated that it is a must to reveal the fact that whether the implementation is in compliance with the model or not, by considering that each model that is used for model-based implementations has its unique properties. When doing this, they defended the fact that following three features shall be specified:

a) <u>Detailed explanation of how the Unit is integrated to the Curriculum</u>: Course program of playing games and physical activities at primary school (MONE, 2018) suggests model-based teaching in order for students to reach to movement skills, movement strategies and tactics. In order to develop object control skills that are one of the basic movement skills, unit of Tennis is placed to the program that is prepared for "net and wall games". The direction is specified primarily with tactical problems and movements which contain certain skills that constitute those problems. Later, daily TGM course plans prepared for each lesson by teachers based on Mitchell et. al (2013) book.

b) <u>Detailed validity of Model Implementation:</u> During TGM implementation, teachers directed daily tactical problem to the students at the beginning point of the lesson (Mitchell et al., 2013, p. 6) and began with the adapted game in order to make them discover the skills or movements for the solution of those problems and created certain conditions for them to solve this problem. These conditions directed the students to the skill or movement which is the lesson focus, and which will enable them to solve this tactical problem. At the end of the game, question – answer section provided the tactical awareness part for discovery of this certain skill / movement and exercising was provided in certain ways such as games, etc. in order to make them perform this certain skill. At the end of the lesson, moreover, game was repeated and the difference between the initial and final performances of the students was shown to the students. During the teaching process, tactical structure of the game branch was focused, and all activities were prepared as game-based. So, in their use of TGM, they ensured that the steps of model (Mitchell et. al., 2013) were present in the process. In order to prove the compliance between the teachers and steps of model-implementation; all lessons were recorded as videos and these videos were evaluated by the researchers, and conclusions were made along with the teachers within the scope of weekly-professional-learning meetings.

c) <u>Detailed description of the program context:</u> The school at which the study was conducted, the participants and position of the researchers were specified in detail within the scope of method section, and the approval of ethical committee of Ankara University was received for actualizing any kind of applications before the beginning point of the study. Later, necessary permissions were received from the Ministry of National Education for conduction of the study. In addition to this, permission was taken from the ethical committee of the foundation to which the researched school was linked, and voluntary-participation approvals from the teachers and parents of the participatory students who would take part in the study. Within the scope of findings, nicknames were used for the participatory teachers.

Teachers firstly have experienced an initiation with model process for two months that involved theoretical knowledge workshops and pilot lessons with different student groups. Then, they experienced an model implementation process that involved first level of net and wall games (fundamental skills with ball and movements without ball) and second level (complex skills and movements) (Mitchell et. al., 2013) that are based of Tennis sport.

Results

Within the scope of this section; viewpoints of teachers in the direction of learning experiences when they learn the use of TGM in their professionalization processes were examined. Professional learning process of teachers was revealed within the framework of Fullan's (2007) educational change. Experiences of teachers in the direction of professional learning were embraced as two sections within the scope of resulting themes; *"phase initiation of the implementation of the model"* and *"phase of model implementation*." Despite the fact that there have been several studies which investigate the perspectives of teachers in relation to TGM implementations and this model in different cultural environments; there is the limited availability of studies what aims at understanding the learning experiences of the teachers (McNeill et al., 2004; Rossi, Fry, McNeill, & Tan, 2007; Wang & Ha, 2013). The first theme which is *"inquiry with professional dialogue is first, individualistic inquiry is second"* revealed the perspectives of teachers in the direction of experiences the lessons with reflections and inquiry. The second theme which is *"from anxiety to cooperative learning"* revealed the contribution of teachers' studying their professional learning processes with an expert and teachers' communicating with their colleagues to the process of learning a new model. The third theme which is "implementation is learnt when applied" examined the viewpoints of teachers in relation to their learning a new model by applying it by the beginning of their learning process.

Inquiry with professional dialogue is first, individualistic inquiry is second

Practitioner inquiry is used as an umbrella for the methods of researcher teachers such as action research, self-study and practitioner research. Inquiry process consists of developing the practitioners' understanding in relation to their implementations and making them discovers the properties of their own studies (Campbell & McNamara, 2009; Orland-Barak, 2009). We, within the scope of this study, concluded that teachers actualize their practitioner inquiry both by reflecting their own implementations and by staying in dialogue with their colleagues (partners) in relation to their own implementations, therefore, an effective and purposive professional learning could be provided in this way.

Teachers periodically examined their implementations through reflecting via PLTA tool, reflecting the lessons after watching the videos of their lessons, and discussions with experts during the weekly-professional-meetings in relation to how TGM processes continued. Along with this, due to the fact that two teachers conducted the lessons in coordination, they also had the chance of observing each other and sharing their tutoring experiences at the leisure times such as during resting or guarding.

The most important property that was revealed in relation to the learning process of teachers through inquiry is that the teachers had adapted to performing inquiry through professional dialogues more easily, especially in earlier periods of the study. Both in phases of reflection that were performed in cooperation with the experts at professional learning meetings and in phases of establishing

dialogues with each other; they realized that they were able to change their implementations and when they began to include individualistic reflections in their processes in the phase of implementation and they stated that they became conscious about their tutoring process when they performed their implementations by watching the recorded videos and this was an effective way of understanding TGM.

Initiation phase of the implementation of the model; teachers stated that they were not able to write about reflections which were made through PLTA right after the end of such lessons due to the fact that they didn't have enough time or due to their secondary duties at school (guarding the students or tutoring idle classes, etc.) and they stated that they were not efficient by this mean because they forgot some points of cases.

> *"At first, I used to write about reflections after 2 – 3 days. Then I used to forget what happened during the lesson (Recep, post-term interview)"*
> *"I attended to the class for 8 hours, yesterday. I also attended to idle classes. Therefore, I was able to write about the reflections at night, at home. Thus, it was difficult to remember some parts…"*
> *(Lale, Professional learning meeting).*

Reflections that had been performed after professional dialogues by the beginning of the process, moreover, were observed as the simplest inquiry method which was seized by the teachers. Due to the fact that teachers thought the lessons in the same sports hall, they had the chance of planning and establishing dialogues at the time of lecturing. In addition to this, they had the opportunity of inquiry their implementations thanks to the dialogues with experts that were established when re-watching the videos which were recorded during the implementations. Professional dialogues were mostly in relation to the implementation of the model and content knowledge. Therefore, teachers had the possibility of inquiry of their teaching experiences.

> *"I do it when someone says that 'this will be thought this week, when someone says, 'you should produce it', I have difficulties (Lale – pre-term interview) … I applied the same plan with Mr. Recep this week because I had difficulties in producing a game. I also spoke with my colleagues in relation to this situation during the week. They suggested games to me (Lale, Professional learning meeting)*

When they came to the phase of implementation of the model; the teachers not only watched the videos of their own lessons at the meetings, they also watched them in their leisure time in order to write about the reflections. They stated that this method created an awareness of their own implementation and they helped them for planning their next lesson, and it was an effective method of understanding TGM. Thus, individualistic inquiry was included in the learning processes of the teachers.

> *"When I watch the videos of my lessons, I realize a different thing I had done at the time of observation. I see that I was not able to ask the student for the thing that I intended to ask. When I asked, 'what is tactic' to the students in the previous week, at the beginning of my lesson; I didn't know what to say when one student said that 'tactic is used during wars', I only told "not that' to that student. I guess I had better prepare alternative questions for the answers that I may receive… (Lale, Professional learning meeting)*
> *Watching the videos that were recorded during the lessons led me to see what I was not able to do. I remedied my deficiencies in the next week… When I prepared plans, I used to watch the video of the previous week." (Recep, post-term interview)*
> *"It had become clearer when I began to write about the reflections right after the lesson… And I used to read the reflections before attending to the next class. This was helping me to plan the lesson (Lale, PLTA).*

It was seen that teachers had difficulties rooting from content knowledge during the inquiry that they implemented for their own. It is important for learning with TGM to have good content knowledge (Mitchell et al. 2013). Teachers had also stated that content knowledge was important especially in the advanced levels of TGM.

"One of the most difficult aspects of teaching with TGM was to learn the concepts. It was difficult to teach through concepts at the beginning. What we knew was in clash with the concepts. We learnt that the things which we taught to students as a rule was actually a condition." (Recep, professional learning meeting)

"Content knowledge should be known after the 3rd level, necessarily not at 1st or 2nd levels. We develop the perception of the child within the scope of the first two levels, and it will be easier to put the next level on it. In the same way, this is valid for us, too." (Lale, post-term interview).

Professional learning process of PE teachers is stated as being effective provided that when a purposive, applicable process and the time that is necessary for reflection are available (Armour & Yelling, 2007). Within the scope of another theme which was included in the study, moreover, it was revealed that collaboration with experts and other stakeholders who participate in study, and continuous communication with those people was an important factor for learning.

From anxiety to learning with cooperation

Teachers had been systematically teaching the elements of net games by depending on TGM model during the process. They used both the time which was spared by school administration and their leisure times for communicating with experts and colleagues that simplified and supported their professional learning process. At the beginning of the process, experts supplied multiple sources for the teachers, helped them for understanding the sources, languages of which were not their mother tongue, made suggestions for the parts which they had difficulties while preparing lesson plans and encouraged them for producing activities. At the beginning of the process, teachers stated that they felt like students when they communicated with experts, so they expressed their anxiety. As the process progress, they felt more comfortable as they continued to find answers to the questions they were asking without being judged by the experts and learn new knowledge with cooperation and that the continuity of learning was facilitated.

The most important communication and cooperation were established between the two teachers who attended the lessons at the same time. They stated that they did not experience the problems which they had experienced with their previous partners, even they had positive contributions to each other's' learning processes.

Initiation phase of the implementation of the model; the teachers stated that they felt like they were students again, when they established a communication with the experts (Casey, 2014). One of the teachers tried to explain his perspective as it follows, which was included in one of the field notes of researcher that was formed during an informal conversation:

" I feel like I am a student, I worry about whether my words would be wrong or not. In lessons which I had been taught until this day, nobody was interested the correctness of the content but I feel uncomfortable by thinking that how well I was able to implement at the times when I talk to you after each class." (Recep, informal conversation)

"We were anxious at the beginning because our knowledge was being revealed." (Recep post-term interview)

"After we made a pre-term interview with the teachers, we told them to record a lesson which was performed as a routine and we told them that we would talk about it within the scope of the following meeting. Mr. Recep, due to the fact that expert was a lecturer of him at the time of his university education, collected theoretical information about tactical game model (student-centered approach) and tried to implement it while recording it. Though, he mentioned that he implements his lessons in a teacher-centered way, with an approach of teaching skills during the pre-term interview. When I asked him why he had studied and implemented the model after the meeting, as an informal conversation, he said that he was abstained from the expert and he gave efforts for not seeming as if he did not know anything." (Researcher field note)

Teachers depicted themselves as "novice teachers" due to the fact that their experiences in model-based implementations were pretty less. Along with this, it was observed that teachers' getting accustomed to the innovations is easier in studies where there is a continuity of collaboration between teachers and researchers (Casey, 2014).

> *"I implemented the lesson plan that you gave me this week as I don't know and cannot produce a game which is special to this sport. In order not to make a mistake, I apply the same. I will need your support in this direction." (Lale, Professional learning meeting)"*

We continued implementing a reflection format which includes the questions of ""*what you did?", "what the meaning was" and "what should be done after this""* (Sutherland, 2012, p. 112) instead of judging their implementation or reflecting the deficiencies of their implementations when conducting the meetings of professional learning on weekly basis. Thus, we made the teachers to realize their implementations and we provided a self-criticism environment for them. In addition, social media (WhatsApp, SMS) was a tool of communication between the researchers / teacher and the teachers had the possibility of reaching to the researcher whenever they needed.

When the phase of model implementation came; communication with the teachers gained continuity without any time or place limitation and they asked questions about their teaching processes and they shared feedbacks without waiting for the meetings. The teachers increased the quality of their lessons in the direction of the suggestions received from the experts in relation to the problems rooting from diversifying the section of answers and questions that were performed with the students in order to create tactical awareness.

> *"Today I went to school for a meeting. Mrs. Lale came beside me at the break time. She made me watch a part of the video which she recorded during the lesson and we talked about a part in which she had difficulties. She stated that she paid attention for the parts in which she had problems in the following week. This was the first time when she asked a question about her own lessons out of the meeting hours. (Researcher field note)*

"Continuous support" between the researcher and the teacher is the most important factor by means of a forming change in the teacher (Casey, 2014). Within the scope of this study, the teachers who were shy about talking about their own implementations at the beginning stated the importance of cooperation between the researcher and the teacher (implementation phase of the model) in the phase of actioned of the innovations.

> *"… I will try to implement TGM in the following year. However, this process had worked well as you (experts) came to our school and were with us. Otherwise, it was very difficult…" (Recep, post-term interview)*
> *"I would like to learn new models in the future, but I am not able to understand them when I try to open and read them on my own. I understand them when I perform the implementation. However, I also need help for implementation, especially about what had I done…" (Lale, post-term interview)*

Teachers are taught two classes together on single gym and supported each other throughout the process. While Lale as a experienced teacher, has come to forefront in classroom management, the conduct of relationships with the administration and the establishment of links with other teachers, Recep as a coaching experience on net games, prepared of lesson plan, carried out the activities and directed the questions of the students.

> *"My compliance with my current partner is very good. I didn't agree with my partner that I worked the previous year. He always complained about my deficient, but now we support each other where we have problems. I most get into trouble when I can't direct the answers given by students but Recep is become a leader of that activity. I support of how to get control on crowded classes. Because students have known me for a long time, they are silent and listen me when I only hold my hand (Lale, professional learning meeting).*

Implementation is learnt when applied

Within the scope of this study; by the beginning of the process of teachers' learning, the focal point was on the course implementations of the teachers. When determining the needs, the courses were recorded with a camera and their needs and lacks were identified in collaboration with the teachers, and all of these video records were evaluated with teachers and experts in order to enable the examination of the aforementioned implementations. In this study, it was concluded that implementation-based learning process has changed the viewpoint of teachers towards PE as it is more effective on teachers, it simplifies learning an innovation and teachers are able to observe the influence on students in a more comfortable way.

Initially, pre-interviews were performed in order to identify the needs, and to understand the perspectives and teaching methods of the teachers by means of PE at the beginning of the study. They mentioned their BE lessons like that:

> "…We give a ball to the children and let them play. Or, if a student says, 'let's play basketball', they are made play basketball. Girls usually want to sit down. If the game that is desired by the student is not played, he / she feels like he / she is punished. My difference is that I play ball with my students. And girls usually sit down". (Recep, Pre-term interview)
> "…I use individually and paired activities during the lesson… Later, I separate the class as groups when we are about to make a group-work, I tell them what to do, and they synchronically do the thing that I said. PE teachers should show the movement by him or her, the students get impressed by this attitude very much. At the same time, my expertise is on football and tennis. I usually begin the lesson with warm-up exercises and continue with skill-based teaching. For example, I make them play tennis after I teach them forehand and backhand hitting." (Recep, Pre-term interview)"
> "My expertise is on dancing and rhythm education. Until now, I have worked with younger children (primary school and preschool students). Within the scope of this, I performed musical and rhythmic games and studies. Therefore, I don't think that I will be able to teach branches which include a ball. (Lale, Pre-term interview)"

As it can be seen, during the pre-term interviews, teachers defined their PE teaching and experiences as teacher-centered by considering the fields about which their content knowledge is pretty high.

Initiation phase of the implementation of the model; the teachers stated that performing an implementation had an influence on transducing TGM lesson structure (starting the lesson with a game, revealing the focal skill by talking about the tactical problem of the day, making activities on this skill and turning back to the first game) and changing their roles within the scope of lessons.

> "I realized at the first weeks of TGM that the lesson plan does not operate as it is planned. I made an adaptation of lesson organization, materials and skill levels. When problems in connection with these factors were removed in the following weeks, participation increased. If I didn't perform an implementation, I wouldn't have realized this situation..." (Recep, post-term interview).
> "With TGM, what I do has also changed. I ask a question; the student implement the skill which will solve the tactical problem and I really get impressed… I wouldn't guess that asking a question is so effective" (Lale, PLTA)

Moreover, when teachers *passed to the implementation phase of the model; they* stated that participation of students increased tangibly. Along with this, they said that the quality of their lessons increased as they planned courses with an predetermined outcomes and they had reached to that outcomes at the end of these lessons and made students reach to certain acquisitions. At the end of the process, moreover, the teachers were transformed into teachers whose using student-centered courses instead of teacher-centered, active participation of students rather than passive approach, priority of loving to moving rather than skill teaching.

"Today, my aim was to make students solve the tactical problem of using spaces. When I saw that a 3rd grade student tried to shoot the ball towards different directions in order to create a space, I felt very happy. Seeing that students are able to do this has motivated me a lot. I could only achieve it with TGM. I asked a question, and students gave me the answer by implementing their answers during a game" (Lale, PLTA).

"In courses that are performed with TGM, all of the students include themselves in the subject and they see it as a game. Participation is higher with TGM. In PE courses, skilled students used to play a lot, but less-skilled students used to play less but with the support of TGM, all of them participate in the course (Recep, PLTA).

Teachers also began to apply the model in different courses in implementation phase of the model. Therefore, they transferred and applied the things that they learnt.

"At the weekend course, we organized a game and the child discovered the solution of the problem. And now I design games at weekend courses, too, I create a problem within the game and I urge them to solve it (Recep, Professional learning meeting)

"The most motivating event was the workshop which we prepared for other teachers who came from the other schools at the end of the year. Being able to transfer this information to the others and being able to answer their questions in the direction of their branches have made me very happy. (Lale, post-term interview)

In the process of learning an innovation by implementing, the subject on which the teachers urged upon the most was the fact that they had prepared daily plans for TGM (Mitchell et al., 2013). Therefore, they pursued ready activities at first, when they were learning an innovation, and they implemented the innovation by producing their own plans when understanding process was developing.

"For example, I am teaching my lessons in accordance with physical activity cards this year, as the thing I will do is included in the scope of the card, but I have difficulties when I try to add something to my lessons, because I don't understand how it should be performed within the scope of this implementation. However, with TGM, a teacher can provide the upper levels of a branch despite he / she does not know this branch well because what you will do is specified by a plan." (Recep, Professional learning meeting)

"For example, we prepare plans for ourselves, but it would be far much better if we make them as annual plans at the beginning of the year, then we may be able to apply the same thing at the same grades… (Recep, Professional learning meeting)

In the next section, the teachers who experience a pedagogical model will be discussed in the light of the literature.

Discussion

The aim of this study is to discover the perspective of primary school PE teachers towards their learning and using TGM which is one of the pedagogical innovations that may contribute to their professional development. Professional learning is a learning process which has persistence, and which proves that past experiences of teachers affect their present and future experiences (Armour, 2010). As a consequence of detailed researches in relation to the changing period of PE teaching, Casey (2012) stated that it is a must to focus longitudinal studies which use of getting deeper knowledge and innovative practices that instead of just how it works, but rather a longer focus to provide change in teaching of PE. Thus, teachers primarily can learn how to teach innovative practices and then they will realize the conceptual change. This longitudinal study aimed to understand the change process of teachers. Within the scope of the discussion in the direction of the findings which were revealed by this study, the same themes shall be addressed.

Inquiry with professional dialogue is first, individualistic inquiry is second

There is an increasing agreement in the literature that teachers' using inquiry as a method in their professional development enables them to lead their own learning (Groundwater-Smith & Mockler, 2009; Poekert, 2011). According to Tannehill, MacPhail, Halbert, and Murphy (2013b), it makes it easier for teachers to make inquiries both when they discuss about the lessons they have given with experts and share their teaching experiences with each other prior to, during and following the lesson thanks to shared lesson environments. In this study, when one of the teachers had difficulty in drawing plans alone, particularly in producing activities, they started to have a professional dialogue after the experts gave a direction as "*You can produce a plan together*". In the following days, they started to watch the videos of their own lessons together with the expert, which enabled their professional dialogues to continue. While inquiry encourages teachers to maintain an attitude of research towards knowledge in and out of the class together with the members of the school society (Hollins, 2006), it enables them to collect and interpret data related to themselves and their classes and to form new knowledge (Dana & Yendol-Hoppey 2009) and to examine teaching practices continuously with their colleagues (Poekert, 2011). As the study progressed, teachers who received the end-of-class reflections the day after or two days later at the beginning noticed that they were missing the details and they became aware of their shortfalls when they wrote the reflections earlier. It is stated that teachers maintain inquiry when they have external support (Casey, 2014) and that a social interaction and a process with continuity will be created through individual and participatory inquiry (Goodyear et al., 2013). In this study, the teachers started to watch the class videos right after the lesson without coming together with the expert and they began noticing the mistakes they did by themselves, which transformed them from teachers who only listen and take feedback to teachers who question and try to learn.

From anxiety to learning with cooperation

In the phase of teachers' learning to use an innovation; it is stated that they should work with supporting mechanisms in order to overcome contextual limitations and to create a change in the implementation of the teachers (Ko et al., 2006), and this may simplify the process of changing (Patton & Griffin 2008; Patton & Parker 2012). Hunuk (2016) has stated that it is necessary to achieve active listening in creating a cooperative setting in effective learning environments of teachers and to hear the voice of each participant in professional learning interactions and also that informal interactions within the group are supportive and reassuring in this process. In this study, the teachers said they felt like students because the expert was their lecturer during their undergraduate education. They experienced worries thinking that their subject-matter knowledge would be revealed in the plans they prepared and it would be assessed whether the lessons were covered correctly or not. Indeed, Recep prepared a student-centered lesson video while saying in the pre-interview that he performed teacher-centered lessons. According to Hastie et al. (2015),it was seen that teachers' feeling like they are students is left behind when their learning process is the focal point and when their questions and worries are the beginning point. As teachers saw in time the expert/researcher did not judge their implementations with an emphasis on a more effective use of the model and gave feedback, teachers developed trust in the expert and mutual trust appeared. According to Hunuk et al. (2013), it is necessary that researchers in the role of facilitators provide teachers with equal ground to speak in a setting in which researchers and teachers constitute professional learning community and also that the role of the facilitator decrease in time. In this study, Lale did not want to prepare plans at the beginning and stated that she experienced problems while producing activities. They then used the ready-made plans (Mitchell et.al, 2013) translated by the researcher in her lessons. Thus, the facilitator role of the researcher was at the forefront of the process. Especially when teachers use a pedagogical innovation for the first time, it is important for them to have persons who provide professional learning program support, who observe and instruct them in this direction (Tannehill, MacPhail, Halbert & Murphy, 2013a). In this study, the teachers said they would not read to implement a model when they were on their own, which supports these views.

Along with this, due to the fact that teachers attended to mutual lessons during the process, they had the chance of having a collaborative environment and they were able to facilitate the process of adaptation. The time that was spent by the teachers mutually, the chance of preparing lesson plans in cooperation, the opportunity of observing each other and the discussion environment through which they were able to talk about their teaching processes contributed to the increase in the quality of their education (Sinelnikov, 2009). In the present study, the novice teacher dealt with the preparation of plans while the teacher experienced in classroom management was active during the lesson. Therefore, Just as students, the process of learning for teachers is also performed by reading, doing and reflecting what they had done, by staying in collaboration with other teachers, and by sharing their experiences.

Implementation is learnt when applied

It is important that teachers have a learning process in which innovations are involved in their implementations rather than having only theoretical knowledge (Ko et al., 2006) and they acquire new knowledge and develop practices unique to their own areas (Patton & Parker, 2012) during the professional learning process. The teachers had a teacher-centered understanding of teaching based on teaching sports branches as skill-based games at the beginning of the process. When the literature is examined, it can be seen that despite the fact that sports games had been the principle part of the syllabus of PE courses for years, skills and tactics had been considered as two separated factors and they were taught as separated (Mitchell et al., 2013). Within the scope of a study which was conducted by Quennserstedt (2013); it was seen that PE courses comprise of skill, sportive performance and team play. It was also revealed that the current pedagogy was teacher-centered and skill-based. The opinions of both of the participatory teachers were close to the view of the literature, and those opinions revealed that PE courses were like free-time activities through which students played the game which was desired by them while the ones who did not desire to play were sitting aside, and the environment was created in a teacher-centered way. When they started to implement the model; development of their knowledge and information provided a motivation for them in the direction of implementing the model.

It has been seen in studies that since the TGM requires advanced level skills teaching and it is necessary to understand the philosophy of games, teachers can not adapt easily. It has been stated that teachers first have to learn how to teach a model by increasing their subject-matter knowledge and pedagogical subject-matter knowledge and then they need to proceed towards conceptual change (Casey & Dyson, 2009). For instance, despite the fact that the teachers attended to the lessons by getting prepared in accordance with TGM lesson structure, they had difficulties in certain sections such as question and answer section, organization of the lesson and potting a distance between their lessons and the perspective of teacher-centered implementations. In addition to this, it was not possible to see that the teachers had pedagogically understood the model and they had completely included the model in their implementations (Casey, 2013). In the present study, when a similar situation arose, the researcher and the teachers resorted to finding a solution together at the time of the implementation. However, the resistance of the teachers was broken when the children showed the answer by finding it in the game instead of uttering the sentence after the teachers told the students about the problem.

Therefore, when the teachers passed to the phase of implementing the innovations; they had already moved away from teacher-centered implementations, and while their content knowledge increased, their self-confidence also increased, enabling them to find immediate solutions to their problems at the time of the lessons. End of the semester, teachers stated that they want to apply a new model for the new term when they invite the PE teachers of other schools to the seminars they organized in their districts and respond to their districts. Thus, it is an important step for teachers to keep control of their own learning and to increase their subject-specific knowledge through an evidence-based process so that learning changes comprehensively through time.

Conclusion and Suggestions

The results of this study will contribute to the existing literature on teacher learning in some ways. To begin with, teachers are worried that their subject-matter knowledge will be revealed when they start experiencing an innovation. In time, when teachers support each other in their areas of expertise and feel that experts do not judge their knowledge and support them in interpreting what they have done, cooperation is achieved. It is easier for teachers to adopt an innovation when they are actively involved in the work and include innovation in their own implementations during the process of learning an innovation. As a result of the outcomes of the current study some suggestions may be deduced in terms of different practices, PE teachers and future studies:

Suggestions for practices

- It can be advised that in-service training should be carried out the whole year instead of short-term practices.

- It can also be advised that teachers should carry out planning, acting, reviewing and re-planning their practices with the supervision of experts according to their needs instead of in-service trainings only introduced and conveyed by experts.

Suggestions for teachers

- Teachers can be advised to create learning communities with their departments in order to identify mutual goals, create mutual solutions and professional dialogues.

- Teachers are also advised to deepen their learning in accordance with their personal differences and contexts in their professionalization process.

Suggestions for future studies

- It can be advised that professional learning processes of experienced and novice teachers should be investigated separately in the future studies by creating learning communities.

- It can be advised that teachers' processes of learning and applying of different pedagogical approaches can be investigated in the future studies.

Current study suggested that teachers had difficulty in continuation of pedagogical innovation. Future studies can be advised to focus on long-term usage of pedagogical innovation.

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Appendices

Appendix 1. Modified Version of Post-Lesson Teacher Analysis (PLTA) (Goodyear et. al., 2013)

1. What were your goals for the lesson? a. Teacher b. Pupil
2. What did you see in your lesson that met your goals? Be specific. a. For you as a teacher b. For your pupils
3. What were the most positive aspects of the class? a. For you as a teacher b. For your pupils
4. What aspects did you feel did not go well?
5. What changes would you make to the lesson the next time you teach it?
6. Learning outcomes: Did you see learning occur? Specifically what? For all students?
7. What are your specific goals for the next lesson? What strategies will help you achieve you?