

IMPLEMENTATION OF THE PERSONALIZED SYSTEM OF INSTRUCTION
FOR THE FIRST TIME BY AN EXPERIENCED TEACHER
TO ONE INTACT EIGHTH GRADE CLASS

by

ANDREW B. YOUNG

MATT CURTNER-SMITH, COMMITTEE CHAIR
MARGARET STRAN, CO-COMMITTEE CHAIR

NIRMALA EREVELLES
BRENT HARDIN
OLEG SINELNIKOV

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ABSTRACT

Previous research has shown that both students and teachers are challenged when introduced to a different learning environment. This is a qualitative study that involves a teacher and one intact eighth-grade class using the Personalized System of Instruction (PSI). In conjunction with the introduction of PSI, the teacher of this research study participated in a one-day professional development coupled with continuous professional development sessions throughout the duration of the study. The results of this study highlighted favorable results, implementation obstacles, and opportunities for improved implementation of the instructional model.

The students were not privy to participation in a full version of the PSI model because of the teaching style of the implementing teacher. The teacher of this study implemented a loose version of the PSI model despite continued professional development and encouragement from the researcher. Despite the lack of implementation from the teacher, the students were able to learn skills that would allow them the opportunity to play a full version of the badminton game. The teacher was challenged with the idea of relinquishing control of student learning. Furthermore, the researcher had a tenuous time with the instructor to embrace all the tenets of the PSI instructional model during every class session.

Constructivism, occupational socialization theory, and Model of Teacher Change were used to develop the theoretical framework. The constructivist theory was incorporated evaluating whether the students were able to flourish from previous experiences and past

knowledge of net/wall games. The occupational socialization theory was used to help clarify and understand the teachers' views on teaching students. The Model of Teacher Change was incorporated to determine the level of change associated with a professional development program.

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CHAPTER I:

IMPLEMENTING THE PERSONALIZED SYSTEM OF INSTRUCTION AS A NEW INSTRUCTIONAL MODEL FOR AN EXPERIENCED TEACHER

Abstract

The purpose of this study was to describe and explain Calvin's (the teacher of this study) understanding and implementation of PSI based on his occupational socialization. In addition, this study examined how Calvin's occupational socialization would affect his implementation. The participant of this study was one experienced teacher who taught one intact eighth-grade class of 28 pupils at a private academy. Data were collected using qualitative methods. These methods of data collection were analyzed by employing analytic induction and constant comparison. The theoretical framework that guided data collection and data analysis was occupational socialization. Results of this study indicated that some experienced teachers have a hard time accepting modification in their classroom. Furthermore, the aspects of occupational socialization (acculturation, professional socialization, and organizational socialization) have a large impact on some teacher's ability of giving up control of their classroom to their students.

Implementing the Personalized System of Instruction as a New Instructional Model

Many physical education teachers have and only practice one form of teaching which is considered by many as the “traditional teaching” method. Traditional teaching allows the teacher to be the controller of the learning environment. A traditional style teacher controls all power, manages responsibility, carries out role of instructor, and acts as decision maker. Additionally, a traditional teacher also considers students as having “knowledge holes” that need to be filled with information (Dowd, 1998, p. 527). Novak (1998) suggested that the traditional teacher believes the teacher causes learning to occur.

Although the traditional style of teaching does have its place in teaching, there are some disadvantages to this style of teaching. The traditional approach to teaching fails in knowledge transfer and transfer of power from the teacher (teacher-centered) to students (student-centered), and the students are unable to move the knowledge they have acquired in the school outside the classroom (Fahiminezhad et al., 2012). Moreover, traditional approaches cannot create a link between the syllabus, the real world, and learning (Findley, 2000; Fahiminezhad et al., 2012). According to Jaques (1992), the traditional format encourages students to concentrate on superficial indicators rather than on fundamental underlying principles, thus neglecting deep, active learning. Active learning refers to “experiences in which students are thinking about the subject matter” as they interact with the instructor and each other (McKeachie, 1999, p. 44; Gamson, 1991).

In today’s society, teachers must find ways of linking some of the gaps in the traditional teaching style. There are instructional models within physical education that address some of the disadvantages within the traditional style of teaching. A quality physical education class should motivate all students to be active and provide them with the skills necessary to pursue a life full

of physical activity (National Association for Sport and Physical Education [NASPE], 2004); using a less direct teaching approach should help equip students with these skills. Therefore, one indirect instructional model that can be used in PE is the Personalized System of Instruction (PSI).

Keller (1968), a psychology professor, created PSI in the 1960s to help his college students in Brazil learn course material without use of the traditional teaching. Initially, the instrument was designed for psychology but was soon utilized in other educational disciplines as well. The components that characterize PSI are self-pacing, a unit perfection or mastery requirement, the use of proctors, and reliance on the written word (Kulik, Kulik, & Bangert-Drowns, 1990; Kulik, Kulik, & Cohen, 1979). In 1973, Siedentop recognized the potential that PSI had within physical education. Since that time, Metzler (2000) has developed a PSI instructional series of workbooks for high school and college-level activity courses.

PSI allows students the opportunity to progress through a series of tasks in a learning module at their own pace. Each includes information on task presentation, task structure, performance criteria, and error analyses. All tasks and criteria are given through prepared materials such as written instructions and video samples provided by the instructor (Metzler, 2000).

In the PSI course, content is separated into unit portions. In order to advance to the next unit, the students must demonstrate mastery of the content. Taking a quiz or completing a physical demonstration that requires a minimum score to be reached for completion of the task can demonstrate unit mastery. Because PSI has a mastery-learning element, students who do not reach the required mastery score for each particular module are required to repeat the module until they reach the specified mastery score. Once students have reached the specified

requirements, they proceed to the next module. If students do not complete the skills task within the specified amount of opportunities, the students will be asked to repeat the module. When retaking a quiz, a different quiz with the same content is provided (Metzler, 2000).

The PSI instructional model has a mastery requirement. Knowing that all students learn differently and at varied rates of acquisition, PSI allows for differences among students. Students are able to pick up where they left off in the module from the previous class session. During each class, the teacher spends time giving one-on-one instruction and feedback to students (Metzler, 2000).

Twenty-six of the 30 research studies that have used the PSI instructional model have been in high school and higher education (Cregger & Metzler, 1992; Hannon et al., 2008). Pritchard et al. (2012) conducted a research study on the effects of fitness levels and knowledge in a college weight training class using the PSI instructional model. The results of the study concluded that the teacher was able to provide high amounts of direct contact with students who had minimal experience with weight lifting and allowed for high levels of specific individual feedback from the teacher. Furthermore, this particular study showed one of the conveniences of the PSI model which Metzler (2005) articulated as “students” progress as fast as they can or as slowly as they need” (p. 217). Overall, the weight training PSI course allowed the students the opportunity to master (Eyre, 2007) proper lifting techniques and proper ways of planning a personal weight-training program.

Hannon et al. (2008) conducted a research study within a high school using the PSI instructional model to teach health related fitness. All students received a workbook that was designed to provide students with learning objectives, content-based modules, methods of assessment, and classroom rules and policies. Both student and teacher reactions and comments

led the researchers to believe that the implementation of the PSI unit was successful. After having the opportunity to familiarize themselves with the instructional model, the students expressed their enjoyment of the structure and material presented. The teacher also expressed that after spending the first couple of days explaining and establishing the PSI instructional model, the PSI unit used very little time on classroom management and a majority of the classroom time was spent on providing individualized feedback to students.

In general, the results of this study were similar to those described by Cregger and Metzler (1992) who used the PSI instructional model in a college volleyball class. Specifically, low management time, high rates of teacher cues and guidance, and high rates of task related feedback have been shown to differentiate between more and less effective teaching and learning in physical education (Rink, 2006). Additionally, other researchers (Pear et al., 2011; Brooke & Ruthven, 1984) have agreed that PSI allowed for more teaching time than classroom management time. Overall, PSI has been found to have low management time (Hannon et al., 2008), high rates of individual feedback (Hannon et al., 2008), an increase in student knowledge (Pritchard et al., 2012), low lecture/demonstration time (Cregger & Metzler, 1992), high rate of practice time, and a high rate of task related feedback (Hannon et al., 2008).

Purpose of the Study

Metzler and Sebolt (1994) acknowledged that the PSI workbooks could be easily adapted for middle school students; nevertheless, there is a dearth of literature on the PSI instructional model being used in middle school physical education programs. This research was conducted in a middle school setting and implemented by an experienced teacher named Calvin. The purpose of this study was to describe and explain Calvin's understanding and implementation of PSI based on his occupational socialization.

Theoretical Framework

Occupational socialization is the theoretical framework used for this study (O’Leary, 2012). Lawson (1986) defined this point of view as “all kinds of socialization that initially influence persons to enter the field of physical education and later are responsible for their perceptions and actions as teacher educators and teachers” (p. 107). Occupational socialization consists of three phases: acculturation, professional socialization, and organizational socialization (Curtner-Smith, Hastie, & Kinchin, 2008; O’Leary, 2012).

The acculturation phase of occupational socialization begins at birth and appears to have the strongest impact on potential physical education teachers (Li & Cruz, 2008; O’Leary, 2012). Within this phase, interest in playing sports, which is mostly encouraged by parents at a young age, draws prospective PE teachers toward the profession (Stran & Curtner-Smith, 2009; O’Leary, 2012). The professional socialization phase occurs within the Physical Education Teacher Education (PETE) program of the preservice teacher (PT). Lawson (1983a) suggested that within this phase PTs “acquire and maintain their values, sensitivities, skills, and knowledge that are deemed ideal for physical education teaching” (p. 4).

The last phase, organizational socialization, delves into the influences of the workplace and how teachers will adapt to teaching within their new environment. Furthermore, Lawson (1983a, b) suggested that innovatively oriented beginning teachers would attempt to transform low-quality PE programs and support high-quality programs. Conversely, he noted that if schools had a particularly conservative culture, beliefs about teaching gained during PETE, which were not congruent with this culture, could be “washed out” (Henninger et al., 2011).

Methodology

Participant and Setting

The participant in this study was a physical education teacher at a predominantly African American private school in the southern region of the United States. This teacher had eleven years of experience teaching K-12 students. His peers and former students and parents recognized this teacher as being a good teacher.

During this study, the teacher taught an eighth grade badminton class using the PSI instructional model for the first time. There were twelve lessons in the unit. Prior to using the instructional model, the teacher participated in a professional development workshop that focused on the implementation and follow through of the PSI instructional model.

The private school in which this study was conducted had a total K-12 enrollment of 322 students. The school was located in a small college town with large industries in the southern region of the United States. The eighth-grade class consisted of 28 students (12 boys and 16 girls). The eighth-grade class met for 50 minutes daily over the course of the semester. Available facilities included a gymnasium with nine badminton courts.

Data Collection

The data sources used in this study were informal/formal interviews, observations, a stimulated recall interview, and PSI workbooks.

Informal/formal interviews and observations. The PE teacher, Calvin, participated in three formal interviews during the 12-lesson badminton unit. The first formal interview was conducted before the unit was taught to examine the teacher's socialization journey to teaching. The second and third interviews focused on the complexities and issues of teaching the PSI model, what he had learned, and how teaching a unit of PSI impacted future teaching. Each

interview was approximately 30 to 90 minutes in length. Each interview was audiotaped and transcribed verbatim. The interview questions can be found in Appendix A.

Throughout the implementation of the PSI model, informal questions between the researcher and the teacher were manually recorded and entered into a Microsoft Word document to compare and form themes from collected data. All 12 lessons were observed. The researcher took copious notes during the badminton unit.

Stimulated recall interviews. Eight different class sessions were videotaped for the explicit purpose of conducting a stimulated recall interview. One stimulated recall interview was conducted with the PE teacher after all lessons had been videotaped to examine the process involved in executing the lesson. The researcher reviewed the videos beforehand and identified key moments in the lesson to serve as prompts for stimulated recall. The duration of the stimulated recall interview was approximately 45 minutes in length. The stimulated recall interview was audiotaped and later transcribed.

PSI workbook. All the students' PSI badminton workbooks were collected to get an overall understanding of the instructional unit. This data was used to help determine if the instructor taught a valid PSI unit as well as to assist the researcher in understanding students' progress during each lesson.

Data Analysis

Interviews were transcribed verbatim. All interviews, PSI workbooks, and notes were coded and searched for common themes. Themes are defined as units derived from patterns such as "conversation topics, vocabulary, recurring activities, meanings, feelings, or folk sayings and proverbs" (Taylor & Bogdan, 1984, p. 131). Patterns were identified and put into categories. New categories were also created to handle data that did not fit into a pre-existing category.

Trustworthiness of the Data

The review and analysis of data from multiple sources within and across contexts facilitated data triangulation during analysis (Denzin & Lincoln, 2003; Janesick, 2010). Triangulation was used to see if data from interviews, PSI workbooks, and observation notes supported each other.

Results

Acculturation

Similar to previous research studied on occupational socialization, this teacher wanted to become a PE teacher because he “has always liked playing sports.” Because Calvin attended a small private school with limited extracurricular activities as a child, he did not play organized sports until he reached college where he played on the university’s basketball team for four years. Although he had limited opportunities to play organized sports during his middle and high school years, Calvin believed that not playing organized sports at an early age did not hinder him from loving to play sports. His elementary and middle school PE teacher was not a certified teacher, and he mentioned that most of their PE time was actually “recess.” When asked who had the biggest influence on him becoming a PE teacher, Calvin mentioned that his high school PE teacher and coaches were his biggest influence. He said,

My PE teacher in high school was my biggest influence only because he did fine with doing PE but he didn’t like athletics per se. My actual coaches that coached me in basketball or any other sport baseball or whatever they had a bigger influence because they taught me the intricacies of sports and how to learn it and then play it and teach it um so I think I got a big influence from my coaches that actually coached me more so than my PE teacher even though he helped a lot. (Personal communication, January 20, 2015)

Professional Socialization

Calvin attended a college that he believes prepared him well for teaching physical education. This program was at a traditional four-year private institution that had a small cohort of students enrolled in their health and physical education program. Although the college provided coursework over a four-year period, there were very limited opportunities for the students to participate in teaching practicums and student development programs to aid them in becoming good teachers. When asked if he believed his college prepared him for teaching in the classroom, he stated,

I think, uh, the teachers I had prepared us to know and understand sports and activities and with the education...like I said, taking those classes actually helped with the management of the students, uh, it taught you the different educational backgrounds of students. It taught you the different problems the students may have and in turn teaches you how to work around the issues and work around the problems and work with each student and not teach generally but work with each student to figure out their teaching or learning style and be able to help them. (Personal communication, January 20, 2015)

Also, this program did not incorporate different instructional models other than the traditional style of teaching. Calvin was very positive that his institution had equipped him with the tools he needed to be successful in the classroom.

Organizational Socialization

The school where Calvin was employed had two PE teachers who worked independent each other, only concerning themselves with the classes they each taught. Calvin's teaching responsibilities were the middle and high school students, while the other PE teacher was responsible for the elementary students. Calvin's teaching and student learning opportunities seemed to operate within a weak coaching-oriented traditional style of teaching (Matanin & Collier, 2003). In other words, Calvin entered PE because of a desire to coach and play sports, and his teaching reflected these values: "The experiences with my coaches inspired me to coach

and teach kids because I knew I was good at sports.” It was Lawson (1983a, Syrmpas, & Digelidis, 2014) who suggested that coaching-oriented teachers whose PETE programs had little to no effect on them were more likely not to use effective teaching practices and would subject themselves to a low quality of teaching PE. Although Calvin was participating in a professional development program throughout the duration of the PSI unit, he was reluctant to make drastic changes to his teaching style and consistently reverted back to his style of teaching.

The principal and other members of the administration were supportive as long as the activities did not become a “financial burden.”

Yes, I have the support as long as I have the facilities to do the activities; um, with implementing different activities for the school I think they are ok with almost anything as long as it’s not financially a burden for the school so any activity that is feasible along those lines, you know, is not a problem as long as the insurance liability isn’t great then doing the activity should be ok. (Personal communication, January 20, 2015)

Calvin also stated, “they don’t know anything about PE and as long as I keep the kids safe and they are not getting in trouble, I don’t think they care.” Neither the principal nor any administrators came to observe the classroom during the time of this research.

PSI Unit: Cafeteria Approach

Calvin demonstrated what was considered by Curtner-Smith (2008) as a cafeteria approach to the PSI unit. Within the cafeteria approach, only portions of an instructional model are used to teach the students the units. Calvin, choosing only to use certain portions of the PSI unit, used more of a traditional style of teaching dictating how, when, and what would be taught during the lesson which is not the goal of the PSI instructional model. Each day the students were brought together at the beginning of class and were informed of the day’s activity. Then, Calvin split the students into pairs working together on the chosen day’s activity. Each student was given his or her own workbook to record their results and for opportunities of advancement

through the workbooks at their own pace. This, however, was not the case. When the workbooks were collected, many sections of the books were incomplete but students were told to move ahead in the workbook to keep up with the rest of the class. This method of implementation did not allow a majority of the students the opportunity to master the skills needed to be effective participants within the instructional model. When asked how he would explain the PSI instructional model and how he understands the operation functions of the model to be, Calvin stated,

It gives the students authority...in other words...to go at their own pace. Some definitely go further ahead than others, some are willing; some are enthusiastic about it because they don't have to wait for the whole class to reach a certain point. You know, they can progress as they feel. And half and half, a lot of the kids that were able to go ahead enjoyed it. And the kids that didn't go ahead is because they were playing around mainly, but once they started getting into it they felt or they saw the ownership of it and wanted to do it. Basically it's a book that they are reading through and if they understand and they finish each point at their own pace then they can move on and not have to wait for the teacher to say ok we are changing activities we are moving onto another activity. You know. They can move on as they grasp and finish their activity. (Formal interview, February 3, 2015)

He did state that he "likes the idea of the instructional model [and] did not believe the student could handle learning on their own." The teacher also mentioned this is the best way for his students because they liked working with each other not independently.

If you separate them they will not participate in class at all. They want to stay together as well. Everybody likes most of them like to do what everybody else is doing so I think it was more of them than me that wanted to keep it together, they want to stay together and do what each other is doing and they want to progress in the same way. The ones that realized that I can get this and they can do this and wanted to get better go ahead. (Formal interview, February 3, 2015)

Although Calvin did not incorporate a full version of the PSI instructional model unit, there were some positive developments that were discovered. When asked if he saw any improvements in his students during the implementation of the badminton unit, his response was,

I saw improvements in the students that had desire to learn um if I'm teaching a

class the regular normal way they everybody usually does it um the kids that have interest they want to do more but they can't because everybody else has to be on the same page basically so it slows their process down but within this model if they had the interest and they had the knowledge of activity they can move on faster to the next activity to the next activity before the rest of them and the rest of them wouldn't miss out or their grades wouldn't get hurt because they were moving slower, it would just be where they are, how they did, and where they finished and it would go according to that instead of it being everybody's in the same boat gotta grade everybody on the same quote unquote curve for what they are doing. (Formal interview, March 10, 2015)

For clarification, Calvin was asked to give a specific example of a student who he felt improved:

Um I had a girl that in the very beginning couldn't hit the birdie for any reason at all um but they went through the video they saw how to hit it, they saw the progression of the swing demonstrated a couple of times, re-demonstrated another couple of times and then was finally able to catch on to be able to serve and in turn being able to serve helped her to figure out how to forehand drives and everything else because she grasps one thing. Within that grasping it, it became something that she wanted to do because it wasn't hard it was just something that she just had to get done first and then after she got it done then she was able to do a lot more and get better at it. (Formal interview, March 10, 2015)

Calvin did show some signs of wanting to incorporate the new teaching style. When asked if he felt the instructional model had enhanced or changed his teaching, it was confirmed that possible teaching and instructional habits could be given a chance if tried again.

Let's see enhanced or changed, um, changed a little. I would prefer to give students more ability to move on their own throughout the activity instead of having to wait um because you have different ranges of knowledge and activity or skill and activity so if they're able to move on and it be label because within this one you have to um do certain activities that label each thing that you do and as you see the progression you can move onto the next thing so if I can see that in every activity that we're doing, then I don't have to just base it on one thing that they are doing in class each day. I can see the activity in the book, I can see the progression of it and I can see what they are doing in class to see if that progression was true or false so it would help to see that and not just go off of each day-to-day. (Formal interview, March 10, 2015)

Although Calvin was not successful in implementing the PSI instructional model, his reaction to the post implementation may suggest that he may be willing to do things differently if given another chance. The data collected and coded showed that the teacher of this study (Calvin) had a difficult time making changes from his preferred teaching method to use of the PSI

instructional model. Based on data collected, the method in which Calvin chose to implement the PSI instructional model was a “cafeteria” approach.

The data collected through the formal and informal interviews, along with the field notes recorded, suggest Calvin would be considered what Lawson (1983a, 1983b) describes, as a coaching-oriented type of teacher. Coaching-oriented type teachers are teachers who were drawn to the physical education profession from either their experience in extracurricular sports or the will to want to coach extracurricular sports and use physical education as a possible avenue toward a coaching career. All of the class sessions were taught in a manner that would suggest the students were a part of a team. The flow and temperament of the class were controlled and instructed by Calvin. A majority of Calvin’s instruction time was spent with the more athletic students of the class. When asked during a stimulated recall interview as to why he was partial to more athletic students, Calvin responded,

I spent most of my time with Johnny because I can see that Johnny has a lot of potential and I know if I just help him with just one or two things then, he is going to be good. On the other hand, I can’t work with Jill. She has no hope. It does not matter how many times I show her what to do, she is just not going to get it. So I choose to teach the students who will give their all and who want to learn how to play. (Formal interview, March 10, 2015)

The finding of this study seems to suggest that Calvin may be only concerned with teaching those students who are athletically endowed and he choose not to spend as much time teaching students who are challenged athletically. Not only was this noticed through the numerous methods of data collection, but also there were signs that some of the students noticed who and what type of students were getting the attention of the teacher. While recording observation notes, one female student shared this with one of her classmates, “I hate asking him questions. He acts as if he does not see my hand up. I know he sees it. I bet he would answer Johnny’s hand.” When Calvin was asked about this response during one of the formal interviews, he

laughed and said, “that girl is always making something bigger than what it is.” He seems to believe this type of response is normal behavior from this student.

Discussion

Acculturation

The occupational socialization of Calvin may have hindered him from being able to implement the PSI curriculum correctly. During the acculturation phase there were a couple of significant signs that seem to have aided in the implementation of Calvin’s version of the PSI instructional model. First, Calvin may not have had a good example of a certified physical education teacher and the proper pedagogy to conduct a PE class. During Calvin’s elementary/middle school years, he only had teachers who were not formally trained and certified. Most of them were either coaches or teachers who were active and able to play sports well, offering the other content specialist recess relief for their planning periods.

Calvin’s parents provided him with the best educational environment they could. Calvin attended a denominational private school whose ultimate objective was to prepare its students for a more spiritual approach to life rather than focus on offering a quality physical education program. Additionally, his teachers were not required to have state certifications, rather denominational generalist training. The physical education environment created by the schools aided in depicting how a physical education teacher should conduct his/her class. The PSI model used in the study requires its teacher/facilitators to use written study guides to help students with unit mastery in a self-paced environment. As an elementary and high school student, Calvin was unaccustomed to structured physical education classes; as a result, it was quite difficult for him to adhere to the modular structure of the PSI model.

Professional Socialization

In the professional socialization phase of Calvin's journey of becoming a physical education teacher, there were a number of factors that may have aided in Calvin becoming the type of teacher he is today. From the data collected through the interviews (formal and informal), it seems that Calvin did not attend a very strong PETE program. Data collected from those interviews showed that the program did not give their students many opportunities to use different instructional models. Although Calvin believed he had experienced instructional models in his program, when the researcher mentioned models like sports education, adventure, and multi-activity models, it was clear that he did not recognize any of them.

Other data collected during the interviews, also suggested that there were limited practicum opportunities for the PETE students. Calvin could not recall any teaching or practicum opportunities outside of his last semester practicum experience required for graduation. Without these opportunities, PETE students had limited experience working with certified PE teachers using various methods of instructional delivery.

Organizational Socialization

Calvin is an experienced teacher who has been teaching for at least ten years. Although considered as expert according to years of service, Calvin created a teaching environment that he believes is a good learning environment for his students. Because of the lack of preparation in his professional socialization phase, it seems to have affected his organizational socialization. Based on data from the interviews, Calvin lacked on going professional development during his teaching career. During his employment, he had not attended professional development (PD) for physical educators. Not only had he not attend any PD seminars in physical education, he had not attended PD beyond the local programming provided on a yearly basis by the school.

With the knowledge that has been gained from his experiences within the acculturation and professional socialization, Calvin offers his students the best. Because of the lack of examples of quality teachers and the teaching styles implemented by his professors in his PETE program, there are students who may be negatively affected in his physical education class.

Conclusions

The purpose of this study was to explain Calvin's understanding and implementation of PSI based on his occupational socialization. The findings of this research study are considerably contrary with most of the research articles that have used occupational socialization. Unlike the research study conducted by Hannon et al. (2008), the implementation of the PSI instructional model seemed to achieve success for both the students and their teacher, this particular study showed some points of disconnect between the students and their teacher. Calvin did not take full advantage of the PSI model as described by Cregger and Metzler (1992); this showed that either Calvin did not fully understand the instructional model or he had what Henninger et al. (2011) called a "washed out" experience due to the conservative culture that he worked in.

In agreement with Jaques' (1992) position on traditional teaching, this particular study echoes the notions that a traditional format leads students to concentrate on superficial indicators leading the students away from the fundamental principles and toward a shallow facade of active learning. Calvin never accepted the structured curriculum of the PSI model. Although the researcher was led to believe that this task was achievable at the beginning of the study, the progression of the PSI instructional model seemed to have become overwhelming during implementation. Additionally, unlike Pritchard et al. (2012) where the teacher was able to provide high amounts of direct contact with students who had minimal experience, the teacher of this study did not take advantage of the teaching opportunities that the PSI instructional model

creates when used correctly. Overall, the finding of this study indicated that in order to implement the PSI curriculum effectively, a teacher must be willing to follow the instructional rules of implementation. Furthermore, the teacher must be willing to research and implement effective ways of teaching in physical education (Silverman, 1991). Consequently, based on the information collected from this study, the PSI instructional model cannot be implemented effectively without the application of a full version from the implementer.

Although the overall results were different from other PSI research studies, generalizations of the results of this particular study should not be the standard for all middle school teachers and students. Implementation of the PSI instructional model by other middle school teacher may produce different results.

Optimistically, the findings of this research could assist fellow PETE instructors in trying to make an early impact in their PETE students in becoming quality physical educators who are consistently looking for new ways of educating themselves and the students they will come in contact with. Quality education along with equipping students with teaching skills is strongly needed within our PETE programs. This research study also suggests that experienced teachers need more time with in a professional development environment than what was allotted for this study, which may allow more hands on opportunities to make long lasting modifications to their teaching styles. Further research is needed to find ways of reaching experienced teachers who have a difficult time implementing change in their classrooms.

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Appendix A: Formal Interview Guide for Teacher

- How long have you been teaching?
- How important is physical education?
- According to Mosston's teaching style, what do you believe is your teaching style is?
- Can you give me a normal everyday time breakdown of your physical education class?
- What role do you see physical education being in the daily school curriculum?
- What are some of your frustrations in teaching PE?
- What are the weaknesses of your PE program?
- What are some of the best ways that you have found to be successful in teaching in physical education? Example?
- What has been your experience in teaching different learning styles?
- Do you find it hard for students to be able to concentrate in physical education?
- Do you feel this particular instructional model has changed your teaching?
- Do you think you will teach a unit in this manner again? Why or why not?
- What value have you found in this method of teaching?
- Did you find it difficult to give up control of your normal teaching style?
- What was the most difficult part teaching this unit?
- What do you believe has worked and what didn't work while implementing PSI?
- Do you think this curriculum works well in a middle school setting? Why or why not?
- How has PSI enhanced your teaching?
- Do you think you will use this particular instructional model again?

CHAPTER II:
IMPLEMENTING THE PERSONALIZED SYSTEM OF INSTRUCTION AS A NEW
INSTRUCTIONAL MODEL FOR SECONDARY STUDENTS

Abstract

The purpose of this study was to examine eighth-grade students' perceptions, experiences, and meanings as they engage in a unit of badminton using the PSI instructional model. The participants of this study were one intact eighth-grade class being instructed by an experienced teacher who was teaching a new curriculum model for the first time. Data was collected using qualitative methods. These methods of data collection were analyzed by employing analytic induction and constant comparison. The theoretical framework that funneled this study's data collection and data analysis was constructivist theory. The results of this study rendered that eighth-grade students can recognize an unstable environment within the classroom. Additionally, the study revealed that students become very hesitant to change toward new concepts when confusion surrounds their learning environment.

Implementing the Personalized System of Instruction for Secondary Students

In almost any classroom setting, there are a variety of students who acquire the content at varying rates. Some students learn the material quickly while other students may need additional time to understand the concepts. Depending on the students' learning rate, some students become frustrated if the pace of the class instruction is too fast or too slow. Literature suggests students may have negative attitudes toward the introduction of new teaching techniques leading to possible disengagement, negative attitudes towards school, reduced self-confidence, and reduced levels of motivation (McGee, Ward, Gibbons, & Harlow, 2003). Ornstein and Hunkins (2009) have suggested that students who experience a curriculum that offers new learning opportunities may approach their physical education and health classes in a more positive way. Based on this research, physical educators should teach using methods that increase individual student contact time, motivate students to learn, and prepare students for learning situations they may face as adults (Hannon et al., 2008). Quality physical education should provide meaningful opportunities for students to be active and provide them with necessary skills to pursue lifelong physical activity (National Association for Sport and Physical Education, 2004).

One instructional model that may help students develop lifelong learning habits is the Personalized System of Instruction (PSI). PSI was designed by Fred Keller (1968) and is also known as the "Keller Plan." Keller (1968) developed this instructional model along with some of his graduate students at a university in Brazil while teaching college level psychology courses. It was determined that a different approach to learning would allow students to progress at their own pace. Keller was a psychologist who believed the learning environment impacts human learning with or without a teacher's direct guidance (Hannon et al., 2012).

PSI allows students the opportunity to progress through a series of self-paced tasks in a learning module. Keller and Sherman (1974) indicated that to retain student interest and motivation while learning, PSI must be based on four distinctive features: 1) the ability to view creative and interesting learning materials; 2) regular tangible progress toward course goals; 3) immediate assessment of learning; and 4) individual attention from the teacher. Siedentop (1973) was the first to suggest PSI be used in physical education, but Metzler (2000) enhanced the development of PSI by making an instructional series of workbooks for college-level activity courses. More recently, Pritchard and Colquitt (2006) suggest using PSI as an efficient method to maximize student learning in high school physical education classes.

Each module given to the students includes information on task presentation, task structure, performance criteria, and error analyses. All tasks and criteria are offered through prepared materials such as written instructions and/or video samples provided by the instructor. In the PSI course, content is separated into units. In order to advance to the next unit, students must demonstrate mastery of the concepts (Keller & Sherman, 1974; Ormrod & Davis 2004). Taking a quiz or performing a physical demonstration can demonstrate unit mastery. Students who are unsuccessful on the first assessment attempt or physical demonstration are given additional attempts to complete the unit.

The PSI instructional model has a requirement of mastery while allowing the students to progress at their own pace. PSI avoids grade penalties for students who require more time to learn. During the module, the teacher spends time giving one-on-one instruction and feedback to students. The PSI model is unique in that the students do not have daily lesson plans, but rather the students continue in their workbook from the previous class session.

Many of the research studies using the PSI instructional model have been in higher education. Most of this research has shown significant improvement in skill and understanding of the tasks (Pritchard et al., 2012). There has been evidence that PSI can be effective in generating higher-order thinking (Pritchard et al., 2012). The use of guided study has been shown to develop higher-level thinking that transfers to other courses (Grant & Spencer, 2003; Roboy & Semb, 1991; Pear & Crone-Todd, 1999). Additionally, previous research suggests that students like the time convenience, flexibility, and the straightforward expectations of the instructional model (Lui 2003; Hannon et al., 2008; Pear et al., 2011; Roberts et al., 1978; Brook & Ruthven, 1984). Finally, students who have been instructed under the PSI curriculum exceeded traditional lecture taught students on almost every outcome measure (Eppler & Ironsmith, 2004; Wesp, 1982).

Purpose of the Study

Because most of the research using PSI has been conducted in high school or college settings, this study considered how middle school (eighth grade) students might have similar results. Therefore, the purpose of this study was to examine eighth-grade students' perceptions, experiences, and meanings as they engage in a unit of badminton using the PSI instructional model.

Theoretical Framework

Constructivist theory is the theoretical framework used for this study. The constructivist theory is known as a general framework of instruction for cognitive learning (Kirschner et al., 2006). This theory posits that humans generate knowledge and meaning from an interaction between their experiences and their ideas (Fosnot, 2013). Thus, learning is an active process where learners have the opportunity to construct new ideas and concepts based on their current

and past knowledge of a subject matter (Applefield et al., 2012). Learning is an active process facilitated by the teacher rather than students learning through traditional lecture about predetermined knowledge (Sudzina, 1997).

Constructivist teachers are interested in the learner's prior knowledge (Vrasidas, 2000) because learners select and transform information, construct hypotheses, and make decisions while relying on a cognitive structure to do so (Piaget, 1970; Von Glasersfeld, 1989).

Collaboration is important because the constructivist teacher recognizes that knowledge is constructed through social interaction (Cobb, 1994; Rovegno & Dolly, 2006; Sudzina, 1997).

While using the constructivist theory, the instructor is not exempt from participation within the learning process (Bauersfeld, 1995). The instructor and students should remain engaged in active dialog on the subject matter (Gamoran, Secada, & Marrett, 1998). The main task of the instructor is to translate the learning information and to format it appropriately at the learners' level of understanding. The learners can build from previous learning experiences (Fosnot, 2013).

Rovegno (1998) suggested that for in-service physical education teachers to successfully implement constructivist approaches to teaching, they need a sound knowledge of its principles. Teachers and preservice teachers typically have problems fully grasping and successfully implementing constructivist approaches in physical education (Rovegno, 1998).

Methodology

Participants and Setting

The participants in this study were one intact eighth-grade class and their teacher. During this study, the eighth-grade class was taught badminton using the (PSI) instructional model twice per week for six weeks. All students received their own workbook containing different modules

about badminton. Each student was paired with a classmate for the study. Each pair was asked to work together to complete the modules for 12 class sessions. Students were asked to record their progress in their PSI workbooks for each session. Once a student pair reached the end of a module, the pair was expected to go to the teacher to complete a criterion-based skills assessment. The students were able to complete the modules at their own pace.

The teacher who participated in the study has over 10 years of experience teaching physical education. The teacher had no previous experience using the PSI model. Prior to using the instructional model, the teacher participated in a one-day professional development workshop. Throughout the duration of the study, he participated in continuous professional development.

The study was conducted at a private K-12 school located in the southeast region of the United States with total enrollment of 322 students. The school is located in a small college town with large industries on a university campus. The study took place in an intact eighth-grade classroom consisting of 28 students (12 boys and 16 girls). Twenty-seven of the students enrolled in the class were African American students; one student was Asian. The socioeconomic status of the students was an even mix of lower and middle class families. Since the school is a faith-based organization, scholarship opportunities were offered both by local churches of the same faith as well as by the school. These scholarships were used to offset the cost of tuition for those families in need.

There were various skill levels in the class ranging from athletic students who participated in organized sports to those who only participated in sports during PE classes. The badminton lessons took place in a gymnasium with nine badminton courts. Sufficient badminton rackets and shuttlecocks were supplied for each student. Each class period was 50 minutes in length.

Data Collection

The data sources used in this study were group interviews, informal interviews, stimulated recall interviews, observations, PSI workbook, and critical incident reports.

Interviews and observations. The students participated in one group interview before the study and another at the end of the study. Students were asked a series of questions regarding their feelings toward physical education, their interest in learning new sports, and their interest in learning a sport independent of instruction. All interviews were done in a quiet area of the school to avoid distractions and were audio taped and later transcribed (see Appendix B for questions used during the interviews). The students were informed of the PSI curriculum before the first class session; however, the instructor did not share the workbook materials until the first day of class.

Some students were asked questions informally before, during, and after lessons to get their reactions to what they believed the modules taught them. All responses were manually recorded, transcribed, and entered into a word document.

All class sessions were videotaped for the explicit purpose of conducting a stimulated recall interview. The stimulated recall interviews were conducted with two different groups of six students to examine their progression and understanding of particular sections of the lessons. The groups were chosen based on skill level. This was done to help the researcher gain an understanding of the students' perspectives on particular chosen portions of the videos used for discussion. The researcher reviewed the videos beforehand and identified key moments in the lesson to serve as prompts for stimulated recall. The duration of each interview was approximately 45 minutes. The stimulated recall interviews were audiotaped and later transcribed.

Finally, the researcher conducted observations of each lesson in the badminton unit. Field notes were taken with as much written down as possible.

PSI workbook. All students were given their own workbook to complete the badminton unit. Students were instructed by their teacher the correct way to enter data in their workbooks. At the completion of the 12 class sessions, the workbooks were collected to obtain scores of completed tasks. This data was used to help determine the progress of the students' mastery of badminton through PSI instructional model.

Critical incidents. All students completed a critical incident report at the end of each lesson. Students received an index card to record their response for the day; all index cards were collected immediately after completion. All students were asked to answer the specific prompt of the day independent of their peers. An example of a critical incident report prompt is as follows:

In the space below describe anything that happened during your class today that you found particularly significant. When you have described the incident, finish with the statement: This was significant because...

Data Analysis

All audio-recorded data from interviews were transcribed verbatim. All interviews, observation notes, PSI workbooks, and critical incident reports were coded and common themes emerged. All thoughts and perceptions were coded and placed in a series of categories and subcategories. The challenge was to reduce the data, identify emerging themes, and extract the essence of what the data revealed (Patton, 2002).

Trustworthiness of the Data

Triangulation was also used to obtain thematic information regarding group interviews, observations, PSI workbooks, and critical incident notes. Triangulation involves using different

sources of data to increase the validity of a study. Patton (2002) cautioned that it is a common misconception that the goal of triangulation is to arrive at consistency across data sources or approaches, but these inconsistencies should not be seen as weakening the evidence, but should be viewed as an opportunity to uncover deeper meaning in the data. Triangulation can be used to expand the researchers understanding of the concerns and maximize their confidence in the findings of qualitative studies.

Results

After analyzing and coding the collected data, three themes describing how the students' were engaged using their critical thinking skills emerged. The three themes included (a) engaging students in active and self-regulated construction of knowledge; (b) activating students' prior knowledge and emerging relevance; and (c) facilitating students' social cooperation, similar to Rovengo and Chen (2000). Within each category, the connections between students and teacher are explained. One of the main goals of this study was to get students to participate in the PSI instructional model. A full version of PSI would include unit mastery in order to move to the next task, student self-pacing through the PSI course, and a workbook to give instructions and record instructional task results. The teacher of this study chose not to use these aspects of the instructional model and created his own.

On day one of instruction, the students dressed out for PE classes in the locker rooms and filed into the gym at 9:55a.m. While waiting for everyone to complete this task, Calvin (the teacher) was preoccupied getting the workbooks and materials for class. During this time, the students were playing around. Once he was ready for class to begin, he had a difficult time gaining control. The students continued to play ignoring his request for class to begin. It took approximately 15 minutes of instructional time for the teacher to gain control of the class. Once

the students were orderly, Calvin asked them to line up facing the badminton net to receive an oncoming birdie. Each of the students were asked to complete this drill. As the students waited their turn to hit the birdie, the disciplinary issues continued. Calvin continuously had to stop class instruction to discipline students by yelling questions and commands like, “What are you doing?,” “Why are you out of line?,” “Stop hitting him!,” and “Wait your turn!” This persisted throughout the class period. Once the class period ended at 10:35a.m, the students were instructed to go back into the locker rooms to change clothes to ready themselves for their next class. Similar classroom management issues persisted for this task as well.

For units two through six, the instructor began to make a few minor changes by allowing the students some autonomy to complete individual tasks. Each day the students would dress out for PE entering the gym with little restraint, the instructor would chose the drill for the entire class to complete, then the class would end. By unit seven, Calvin began to allow the students to complete some of the activities in the workbooks independently. They were able to complete the lessons at their own pace. While the students were busy with their workbooks and/or stroke work, the instructor would walk around the gymnasium offering assistance to those students who asked for help or seemed to be struggling with a particular concept or stroke. For lessons 10-12, Calvin’s instruction began to reflect the chaotic instructional pattern of units one through six.

Engaging Students in Active and Self-Regulated Construction of Knowledge

Although the teacher verbally committed to use a full version of the PSI model (Curtner-Smith et al., 2002) during his professional development, once the study began he had difficulty with implementation. Nonetheless, there were students who were able to become active participants in their learning experience.

On day one, the students should have been reading *Stretching for Badminton*; however, there was limited active learning because students were too unruly. On day two, the instructor took the students into the computer lab to complete workbook assignments and watch videos on the forehand stroke and the short serve; discipline problems remained an issue. During the last few minutes of class, the teacher took the students back in to the gym. During this time, there were a few students who began to practice their short serves while others hit the birdie back and forth across the net. The students took the initiative to complete these tasks without the guidance of the instructor. The instructor was distracted with personal cell phone calls. He constantly yelled at other students in the classroom to behave. Despite the instructor's inattentiveness to classroom instruction, some of the students seemed capable of active engagement. The students began to play their own version of badminton by hitting the birdie back and forth.

On day three, the instructor was unable to demonstrate how to complete a short serve correctly. He did not seem to understand or accept the PSI teaching model. Based on information gathered during the first formal interview, Calvin said he taught badminton in PE classes during his teaching career, but it appeared he did not have adequate knowledge. Despite his lack of knowledge about badminton, there were some students who are able to create their own atmosphere of learning. A student asked, "Calvin, if I make it [the short serve] two times do I write [on the workbook task sheet] two out of ten?" Calvin responds, "No, you serve ten times. If you make eight, you can go to the next box. You must go through each box." When Calvin was not preoccupied on his phone or with classroom management problems, he was able to help the students.

For days four through twelve, major discipline problems persisted. Not only was the teacher distracted on his cell phone, he began to leave the class unattended for as long as 30

minutes at a time. Despite these issues, the students were actively engaged in learning. On day four, after a demonstration of a particular badminton stroke from the chosen lesson, the students would watch closely and did their best in following the example given. Subsequently, the students went back to their courts and practiced the stroke(s) as the workbook outlined. When Fred, a student, was asked if he thought the demonstrations and practice opportunities given was sufficient he responded,

Yes, I'm a hands-on learner and the live demonstrations from our teacher, for me allowed me to do better during the practice opportunities that the workbook required. I know for me it gave me more opportunities to practice my strokes and I like that because when you play a game I want the birdie to go exactly where I am trying to fit it or I will be mad. Mad only because I am competitive.

While some students were waiting for a badminton court to open up, they began to hit the birdie on sideline, calling on the teacher to show them how to correct a short serve. Those students who were already on the courts were excited because they successfully hit the birdie into the desired location.

On days five through seven, some students started their own games and other students begin independently completing workbook assignments on serving, clears, and drive shots. On days eight through twelve, students participated in a variety of game play and workbook assignments. They seemed to be having fun and learning without the expertise of the instructor. Some students found it hard to engage in class because of workbook assignments in a PE class. Some of the students believed that having a workbook in PE was "just not right." One student (Sarah) stated in a focus group interview,

The workbook was complicated and it had a lot of directions in it. It was hard to follow the directions and the book was requiring too much. Like when we had to hit the birdie in to a particular area, we had to hit it 6 out of 10 or 7 out of 10 times, three or four times in a row was asking too much.

When asked why they thought the workbook required them to do so many repetitious shoots, one student replied “probably for practice.” Some students felt that the pressure of hitting the birdie into a specific area was too much for them. During a stimulated recall interview with a group of students, one student expressed that he felt when he was allowed just to hit the birdie back and forth with a partner, he did better because there was no pressure of hitting it in to a particular area.

A number of the students did not like the fact that the PSI workbook reminded them that they were not efficient in the sport of badminton. On the other hand, some students saw this as a challenge and took advantage of the practice opportunities. Several of the students, who were considered weak students according to their teacher, seemed to enjoy the PSI unit the most. According workbook assessment data, 12 of the 15 low skilled students had an 80% success rate of completing the modules correctly. These weak students kept to themselves and did exactly what was asked of them from both their teacher and workbook, and in the end, had better scores than the other students. On day twelve, one student mastered the serve assessment in the workbook and became quite excited announcing to the class, “I did it!” Students continued to show varying levels of active engagement and self-regulated construction of knowledge. Additionally, 10 of the 12 considered stronger students, although more athletic, did not complete the module tasks correctly and were continuously trying to play a game of badminton.

Activating Students’ Prior Knowledge

Before the first lesson, all students were asked what they already knew about badminton. A few students said they played in their backyards at family picnic events. Some said they played at a previous school they had attended. However, most of the students expressed they had never had the opportunity to play the sport. The teacher then asked them what they wanted to

learn about badminton. Most of the students wanted to learn how to play the game correctly and some wanted to know if they would be able to have a competition with some of their classmates. A few of the students made a correlation between badminton and other net/wall games like tennis and racquetball. Because of the limited experience of the students, the teacher continued to try to help the students make other connections by highlighting the similarities and discussing the differences of such sports.

Emerging relevance. The students were able to connect the relevance of the different modules that were taught. Once the teacher started leading the students through the PSI unit, some students found that learning badminton was tolerable, maybe even enjoyable. After five class sessions, 85% (25 of 28 students) of the class anticipated playing each day and were advocating for a badminton tournament once the unit was complete. Each day the students would pick up their workbooks then wait for instructions from their teacher. Once instructions were given, the students began to complete the assignments. The students found ways, even when they did not understand all of the instructions, to complete the task of the day.

According to some of the responses from the critical incident reports, some students expressed dislike of the lessons being conducted. When asked after one class session “what did you learn today?,” some students did not hold back how they really felt about the lesson. Some students had short sarcastic statements addressing the question such as “how to be bored,” “how to stand in line,” “how to wait for 10 minutes until my turn to hit the birdie again.” When asked, “what did you believe the goals of today’s lesson was?” students once again did not hold back on their short but strong responses. One student’s (Keisha) statement read as such “I don’t know what the goal was today. If the goal was to hit the birdie just two times in minutes, then I reached the goal. LOL. But for real I have no idea!” After a stimulated recall interview had been

conducted, the researcher asked the students why they did not write more when given the critical incident question of the day and if they were honest in their responses. All of the students said they were honest, but they just had nothing else to say about the lessons. John responded by saying:

Sir, there was nothing to talk about. I thought we would be doing a new style of learning when we were first told about this project, but it turned out that we ended up doing the same thing we always do. One time, I tried to tell him what the book said and he told me to be quiet because he knew what he was doing. I can read I know what the book is telling me to do and it was not what coach Calvin was telling us to do. After that I said if he don't care, then I don't care either.

When the students began the unit, some of them had a limited connection to badminton. Calvin did ask questions regarding their experience with net/wall games. After getting an understanding of the students' background knowledge, Calvin should have developed his lessons using the PSI workbook, stroke-work, and his expertise to help create an ongoing interest in the sport. However, throughout the study, when the students asked questions about the lesson of the day, he did not always have the correct response. Based on the information in the workbooks, the students understood the written instructions, but were asking for clarification. He shared his own understanding of concepts giving what seemed to be the correct answer so the students failed to formulate their own ideas in favor the teachers. Calvin did not follow the guidelines of the PSI model. He seemed to withhold the learning resources like the workbooks and the videos because he wanted full control of the classroom. He failed to create an environment in which the students could learn for transfer. This should have been nurtured and modeled. As a teacher, Calvin should have been attempting to develop a welcoming learning environment by promoting interest and problem solving skills.

Facilitating students' social cooperation. Cooperation is a form of social interaction in which two or more persons work together to gain a common end (Chen, 2001). The teacher of this study divided the students into pairs to help facilitate social cooperation. Once the students had been given a partner, they were partners for the duration of the badminton unit. All of the students seemed to get along with their partner and most groups were productive in completing the daily lesson. But while the groups were active in the lesson, students were seen and heard encouraging each other to finish the lesson of the day. "Come on, Jimmy you can do it" or "Alright! That was awesome" was some of the motivational feedback students gave each other. Not only was motivational feedback being given between the students but there were also plenty of opportunities for the students to give performance feedback to each other. Students were heard saying statements like "bring your arm down more," "move your feet to get under the birdie," "hold the racket above your head," and "bend your knees."

During one of the focus groups, the question was posed about how they [the students] like hearing motivational and performance feedback from their partners. One student named Sally said,

I really liked that my partner helped me. I remember one time when I was practicing my short serve, and I just could not get it. Sara told me to bend my knees and don't turn my head to soon and it worked! It was nice to hear feedback from someone who was on my level of playing.

Students also liked the fact that they were able to understand the lesson without the help of the teacher. The students worked together to finish the workbook sheets and to help their peers. Many students learned from their peers more effectively than from their teacher.

It seems the opportunities for independence from the instructor as facilitator were welcomed by some of the students. The teacher categorized the students as low-skilled, medium skilled, and high-skilled simply based on his opinion. Two of the low-skilled students decided to

work together on the overhead drive stroke. They worked almost relentlessly until they mastered the stroke. Both of them encouraged one another to get high scores in the workbook and to perform the stroke with correct form. In general, the medium skilled students worked to complete the PSI program as outlined while talking to each other more than practicing the stroke work. Most of the high-skilled students continued to leave the outline of the lessons but would end up trying to play a full court badminton game.

Discussion

Engaging Students in Active and Self-Regulated Construction of Knowledge

The student participants constructed their own knowledge through active engagement and self-regulation in the badminton classes by creating what they believed to be badminton based solely on their prior knowledge of net/wall games. Their knowledge of the net/wall games was a guideline many students had to rely on because of Calvin's unwillingness to adopt the PSI model. The PSI model is rich with resources like videos, workbooks, hands-on instructional lessons and the like; however, Calvin did not readily offer these resources to the students. He chose a more traditional pedagogy by lecturing and/or demonstrating stroke work to each individual student.

The method that Calvin adopted did not favor the students for maximal opportunity of comprehension of the concepts for lesson on badminton. Use of the lecture method was ineffective in this setting because of Calvin's inadequate classroom management issues. Many times the students were inattentive to the daily lecture. Additionally, when Calvin took a more individualized approach, not all students benefitted from the lessons as the class time may have elapsed and/or there were constant interruptions. Although the students were given minimal structured strategies for playing badminton, some students were able deduce their forehand shot

based on their personal experiences with net games. As the study progressed, the students continued to show varying levels of active engagement and self-regulated construction of knowledge.

Activating Students' Prior Knowledge and Emerging Relevance

At the beginning of the research study, Calvin asked the students if they had any previous experience with badminton. A few had limited experience with badminton in informal settings like at family reunions, church picnics, and the like. Despite the lack of previous formal knowledge, students made correlations between badminton and other net/wall games by discussing similarities of the different sports. Even the students who did not have any personal experience with net/wall games or badminton were able to make connections to televised net/wall games like tennis, volleyball, and racquetball.

Calvin was able to activate their prior knowledge by having the discussion about the net/wall games. Calvin was actually able to use this information to increase the students' level of excitement. This activation solidified the connection of net/wall games enabling the teacher to help build on a foundation of prior knowledge. During the initial lesson, some of the students were able to demonstrate a few of the strokes based solely on prior knowledge. This interaction helped to promote active engagement of the entire class. The remaining students found ways to complete the tasks even when they did not fully understand the instructions.

Facilitating Students Social Cooperation

During the duration of the study, the students displayed social cooperation in various ways. For example, the teacher paired similarly skilled students together—low-skilled pairs of students, medium-skilled pairs of students, and high-skilled pairs of students. Using this paired system, the students were able to teach each other how to play particular elements of the game.

During this paired play, the students seem to exhibit social cooperation by having excellent communication skills and collaborative interactions.

The low skilled pairs of students followed the lesson and displayed excitement by offering each other oral exclamations of praise and encouragement. During these opportunities of interaction, students encouraged each other during class sessions. The peer-to-peer encouragement was received more positively than the encouragement the teacher gave the students. They also accomplished the outlined tasks for the daily lesson more frequently than the medium and high skilled students. These students worked together displaying social interaction through collaboration.

In general, the medium skilled pairs were impatient waiting for the class session to end and ambivalent about the daily lesson. They were also engaged in personal conversations rather than the outlined lesson. These pairs of students were off task for a large time block during the 50-minute class period finding it difficult to complete the daily lesson. However, there were some in this group who did function as the low skilled pairs of students and well as the high skilled pairs of students. These students displayed social interaction through conversation and friendships.

The high skilled pairs created a competitive lesson for almost every skill. They wanted to play the game and wanted to show off their skills; therefore, these students rarely finished the outlined lesson because they wanted to play a full game of badminton. These students displayed social interaction through competition.

In Rovengo and Chen's examination of characteristics of expert and novice constructivist-oriented teachers (2000), expert teachers have the ability to create high levels of

social interaction in the classroom. As an expert teacher with 10 plus years of experience, Calvin created a socially rich environment by pairing the students according to skill level.

Conclusion

The purpose of this study was to examine eighth-grade students' perceptions, experiences, and meanings as they engaged in a unit of badminton using the PSI instructional model. The results indicated that the students had varied feelings concerning the implementation of a new instructional model. The findings from this study confirm Ornstein and Hunkins' (2009) results that suggest that students who experience a curriculum that offers new learning opportunities may approach their physical education and health classes in a more positive way. It seems that many students were initially excited about the PSI model and the learning opportunities it would provide. There were some, however, who seemed disappointed in the implementation because of the instructor's lack of classroom management, his inability shift his teaching style, and lack of proper PSI implementation. Using a full version of the instructional model in this study may have yielded different results.

Data from this study agreed with Hannon (et al., 2008) who suggested that students like the flexibility and expectations the PSI instructional model provides. The PSI model seems to give a sense of stability to the students in controlling their learning. The teacher did not give the opportunity for students to fully experience this freedom of learning because of his instructional decisions. When they did have some control, most students seemed to enjoy it.

This study supports previous research (Guskey, 2002) that teachers can be reluctant to try new instructional models, but students can also be hesitant to change to new concepts especially if there is confusion within the learning environment. Because the students were accustomed to

a more traditional approach to learning, some students were reluctant to venture out of their comfort zones; others were eager to do so and were discouraged that change did not happen.

Specific limitation of classroom management may have hindered the students from making further progress. This type of environment did not facilitate the proper learning environment needed for maximal opportunities of learning for the students.

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Appendix B: Formal Interview Guide for Students

- What are some of the things you guys like about physical education?
- Tell me about your favorite time in PE?
- What are some of the things you don't like?
- Other than by your teacher, what ways do you think you could learn in PE?
- Can you give me a normal everyday time breakdown of your physical education class?
- What would you change in your learning experience in PE?
- What has been your experience in learning different styles?
- Do you find it hard for you to be able to concentrate in physical education?
- Do you feel this particular instructional model has enhanced your opportunities for learning in PE? Why or How?
- Would you like your teacher to teach another unit in this manner again? Why or why not?
- Did you find it difficult for your teacher to give up control of his classroom to his students? Why or why not?
- What was the most difficult part of learning this unit?
- What do you believe worked and what didn't work while participating in this instructional model?
- Do you think this instructional model has worked well in your school? Why or why not?

CHAPTER III:

THE EFFECTIVENESS OF PERSONALIZED SYSTEM OF INSTRUCTION PROFESSIONAL DEVELOPMENT FOR A MIDDLE SCHOOL PHYSICAL EDUCATION TEACHER

Abstract

The purpose of this study was to examine the level of change in an experienced physical education teacher that occurred after the professional development program for a new instructional model, Personalized System of Instruction (PSI). The participants of this study were one experienced teacher who participated in a professional development program and the researcher of this study conducting the professional development program. Data were collected using qualitative methods. These methods of data collection were analyzed by employing analytic induction and constant comparison. The theoretical framework that funneled this study's data collection and analysis was framed within Guskey's (2002) Model of Teacher Change. The results of this study indicated that a experienced teacher shows signs of resistance adapting to changes in teaching style. Additionally, the study showed that continuous professional development is necessary for teachers to have a better chance of change teaching habits.

The Effectiveness of Personalized System of Instruction Professional Development for a Middle School Teacher

There are many teachers who are looking for new ways of reaching and teaching their students in the classroom. One way of achieving this goal is through continuous learning opportunities within a professional development setting. It was Darling-Hammond and Mclaughlin (1996) who defined professional development as “deepening teachers’ understanding about the teaching/learning process and the students they teach” (p. 203). It is believed that many of the issues within education can be solved through quality professional development (Feiman-Nemser, 2001; Guskey, 2002; Ko, Wallhead, & Ward, 2006), but unfortunately, the quality of many professional development programs is not high quality (Armour & Yelling, 2007).

While teachers may want to make classroom changes, they need help pursuing professional development. Research has indicated that teachers are less likely to make changes in their classroom practices on their own (Hawley & Rosenholtz, 1985; Little, 1993; Syke & Darling-Hammond, 1999). Professional development should be designed in a way that “enhances the desires of a teacher to want to make a difference in their students because this is where teacher’s ‘moral purposes’ can most easily be found” (Armour, Moore, & Stevenson, 2001, p. 1).

Birman et al. (2000) have identified and described six factors (three structural and three core) that have potential for an effective professional development. The structural features included form, duration, and participation, while core features were content focus, active learning and coherence. When analyzing current findings about professional development and considering several representative programs, WestEd, a non-profit agency located in the USA,

defined principles of an effective professional development (WestEd, 2000) that aligns with Birman et al.'s (2000) and Guskey's (2002) recommendations. According to WestEd (2002), the effective professional development program is one that

(1) focuses on teachers as central to student learning, yet includes all other members of the school community; (2) focuses on individual, collegial, and organizational improvement; (3) respects and nurtures the intellectual and leadership capacity of teachers, principals, and others in the school community; (4) reflects best available research and practice in teaching, learning, and leadership; (5) enables teachers to develop further expertise in subject content, teaching strategies, uses of technologies, and other essential elements in teaching to high standards; (6) promotes continuous inquiry and improvement embedded in the daily life of schools; (7) is planned collaboratively by those who will participate in and facilitate that development; (8) requires substantial time and other resources; (9) is driven by a coherent long-term plan; and (10) is evaluated ultimately on the basis of its impact on teacher effectiveness and student learning; and this assessment guides subsequent professional development efforts. (p. 2)

Guskey (2002) constructed a five level model for evaluating a professional development program, which includes the following:

1. How do the participants feel about the professional development experience?
2. What knowledge and/or skills were obtained from the training sessions?
3. What type of affect did the training have on their job performance?
4. Did the professional development program have any type of effect on the participant's productivity?
5. What type of organizational support for change did the participant receive from their school?

In Curtner-Smith's 1999 study on factors influencing teachers' interpretations and delivery of physical education, he suggested the implementation process may be difficult for some and do not necessarily promote a change in teaching pedagogy. One way to reduce the anxieties of implementing new things, especially in the classroom, is to prepare teachers through professional development. The Consortium for Policy Research in Education (Corcoran, 1995)

provided several approaches to teacher professional development. These include (a) joint work and job enrichment, (b) teacher networks, (c) collaboration between schools and colleges, (d) professional development schools, (e) national board certification, and (f) teachers as researchers.

There are three core features that lead to professional development opportunities for teachers to have a significant, positive effect on their knowledge of skill and changes in their classroom practice: focus of content knowledge, opportunities for active learning, and coherence with other learning activities. Literature is in agreement about the ineffective practice in professional development for teachers, and there is evidence to support that sporadic “one-off” professional development activities do not have a lasting impact on teachers’ practice (Armour & Yelling, 2004; Connelly & James, 1998). In the discipline of physical education, teacher’s experiences in such programs are said to lack coherence and relevance (Armour & Yelling, 2004) as well as appropriate progressions (Ward & Doutsis, 1999; Ward 2013). Effective professional development is a continuous, ongoing process that involves teachers being supported through feedback, coaching, and mentoring (Fullan 2001; Snelnikov 2009). This support allows teachers to change their classroom practices (Guskey, 2002). The change in practice impacts student learning, which then impacts teachers’ beliefs and attitudes (Gusky, 2002). Thus, it is implementing a new instructional model and seeing its impact on student learning that ultimately leads to teacher change because it is difficult to change teachers’ beliefs without proof of student learning (Gusky, 2002). Many experienced teachers are reluctant to change their teaching style until they understand the effectiveness of a new instructional model. Simply presenting new information may not affect the desired change.

Purpose of the Study

The purpose of this study was to examine the level of change in an experienced physical education teacher that occurred after the professional development program for a new instructional model, Personalized System of Instruction (PSI).

Theoretical Framework

This study was framed within Guskey's (2002) Model of Teacher Change, which is an alternative approach to most professional development programs. In a traditional professional development program, three major goals are sought. These are change in the classroom practices of teachers, change in their attitudes and beliefs, and change in the learning outcomes of students. With these goals in mind, facilitators of professional development programs should consider the order of outcomes most probable to result in desired change and the endurance of the change (Guskey, 2000). Most professional development programs which place change of teacher attitudes and beliefs as most important are, in general, designed to garner the teachers' and school administrators' acceptance even before the implementation of the strategies within the professional development program (Guskey, 2002). As important as change of attitude and beliefs of teachers are, professional development programs that place attitudes and beliefs of teachers' first seldom draw-out strong commitment from teachers (Jones & Hayes, 1980).

The Model of Teacher Change suggests that professional development programs should change the sequence of the three major outcomes of professional development. Guskey's (2002) model suggests that a professional development program's emphasis should be a 1) change in teacher classroom practices, 2) change in student learning outcomes, and 3) change in teachers' beliefs and attitudes. Guskey (2002) suggested that substantial changes in teachers' attitudes and

beliefs normally happen after teachers have seen evidence of improvements in the learning outcomes of their students (Guskey, 1989, 2002; Creemers et al., 2013).

Research has shown that most teachers change very slowly toward new ideas and seldom become committed to a new instructional approach or innovation until they have experienced its effectiveness in their classrooms with their students (Bolster, 1983; Carter & Fewster, 2013). Crandall et al.'s (1982) research on supporting school improvements studied 61 schools within 146 different districts nationwide. Crandall and his associates were particularly interested in the development of teachers' commitment to the new practices. During the study, several opportunities were provided to motivate teachers to utilize new practices in the classroom by involving them in problem solving and decision-making prior to implementation. In some of the schools, the new school improvements were proven to have a more harmful effect as the teachers changed and altered the new practices beyond recognition. Teachers who had success in implementing the new practices became committed only after implementation of practices in their classrooms (Crandell, 1983). This research supports the notion that changes in attitudes of the teacher take place after there has been evidence of student learning. Teacher change is not a straightforward, easy process; instead, change tends to be iterative (Guskey, 2002; Huberman, 1995; Strand et al., 2014). Also, it is very possible that a change of teachers' attitudes and beliefs will encourage further change and additional opportunities for student learning (Huberman, 1985; Cimer et al., 2013).

Methodology

Participants

The two participants of the study were the researcher, Brian, and the secondary school teacher, Calvin. Calvin agreed to implement the new instructional model. There were two main

participants in this study, Brian, the researcher, who is a university professor, and Calvin, the secondary school teacher and implementer of the new instructional model.

Brian (pseudonym) is a physical education professor in a predominately African American private university in the southeastern region of the United States. As a professor in both the teacher education and health/physical education departments, Brian is responsible for teaching methods classes. Methods classes are designed to aid students become effective classroom teachers. Brian is an experienced teacher with a variety of teaching levels including the elementary, secondary, and college levels for 15 years, 12 years, on the university level in the health and physical education department.

Calvin (pseudonym) is a 38-year-old, male physical education teacher in the southeastern region of the United States. He taught middle and high school students at a predominately African American private school for 10 years. He received his bachelor's degree from a historically black university in the southeastern United States.

Since arriving at the school, Calvin had been recognized as being a respectable teacher by his peers, former students, and parents. His other duties included serving as the athletic director of the school program. Based on informal assessments of Calvin's teaching expertise from his colleagues and former and current students, Calvin was described as a competent teacher. The physical education teacher education program at this school was traditional in teaching style and provided only superficial attention to contemporary pedagogical models (i.e., short units in games such as football, basketball, and baseball using command or practice teaching styles). As a teacher, it seemed Calvin was unaware of other pedagogical models of instruction.

Setting

The school in which the study took place was located in the southeastern region of the United States with an enrollment of 322 students. This school had two physical education teachers (1 male and 1 female). The male physical education teacher, Calvin, taught the middle school and high school classes while the female teacher instructed the elementary-aged students. Each physical education class was co-ed with an average class size of 25 students. Physical education classes were held at least twice per week.

The school recently opened a new gymnasium for the K-12 students, which allowed for better learning opportunities for the students. Prior to the new gymnasium, the physical education classes were held outside which may have been limited to due weather constraints and/or equipment set-up and break down. With the new facility, these issues were minimized. If Calvin taught an outdoor sport like soccer, the middle school had an agreement to share playing fields with the university. Geographically, both the elementary/middle and the university were on the same campus.

Overtime, the physical education department of the university and the physical education faculty of the K-12 academy developed a more collaborative relationship. This relationship gave university student teachers and the K-12 academy students better learning opportunities. The university student teachers were able to bring new ideas to the classroom setting, while also gaining hand-on teaching experience. During that time, the university faculty facilitated a modified version of sport education (SE) using soccer for two second-grade classes and a full version of SE using soccer for fifth-grade students. Sport education is an instructional model that reflects an athletic season. The full version of SE utilizes all aspects of the curriculum; the

modification takes into account the ages of the students. For example, the younger group of students did not have student coaches; the student teachers served as their coaches.

Personalized System of Instruction

The Personalized System of Instruction (PSI) model is a modular instructional model allowing student autonomy and flexibility to increase their own physical education growth. Within the PSI curriculum, students have their own workbook to complete. The workbook is set up to help facilitate content knowledge and skill based mastery. The workbook uses modules to explain each skill in the unit (i.e., stretching, badminton basics, serving, rules and strategies). For the stroke and stretching modules, each skill is explained with cues and picture followed by comprehension tasks that include learning tips, readiness drills, and common errors and their correction. After completing the comprehension tasks, students then engage in partner or instructor checked criterion tasks that involve reaching a specified goal in skill based activities (i.e., serving to a specific area 7/10 times).

All students start the first module as a class but are able to progress through the modules at their own pace. At the end of each module, the students are required to complete a specific skills task within a specified amount of opportunities given. If students do not complete the skills task within the specified amount of opportunities, the students will have to repeat the specified module. Once the workbook is complete, the students will be considered a more competent participant, which will allow the students to participate fully within a game setting. Each module has four components: task presentation (a demonstration), task structure (focus of the lesson), performance criteria (student practice of lesson), and error analyses (final test). Before the students can advance to the next module, mastery is required and is measured by the students score on the assessment. Students are given up to three opportunities to demonstrate

mastery of a module. Within each test attempt, the assessment questions are altered. If students do not demonstrate mastery, they must repeat the entire module.

Because students learn at different rates, the PSI model allows students to progress through each module allowing the teacher an opportunity to provide personalized instruction and feedback. This instruction and feedback allows the students the flexibility to navigate successfully through the modules. Calvin implemented the PSI instructional model using the sport of badminton over 12 days.

Professional Development Program for PSI

Based on the literature on effective professional development, the program began with a one-day session of continuous support during the 12 lessons. One week prior to the professional development program, Calvin received an overview of PSI, including the PSI workbook and website resources.

The first half of the one-day professional development session was content specific and focused on the key aspects of implementing the PSI model and how it differs from traditional teaching. A vital element encouraged by the researcher was the student-centered nature of the model. During the first half of the session, both the researcher and teacher reviewed PSI unit workbook. Additionally, both the researcher and teacher found appropriate videos to compliment the workbook.

The second half of the session gave the teacher an opportunity to be an active participate of PSI model. Having the opportunity to be an active participant gave the teacher possible issues the students could encounter during the 12-lesson unit.

At the conclusion of the professional development program, a summary and discussion about teaching the instructional model was conducted. The professional development program

began with a formal presentation of the PSI model. For the formal presentation, Brian presented two components—an introduction of the PSI curriculum and its purpose; the second component was a hands-on demonstration of how the curriculum should be presented in a classroom setting. During the second component, Calvin was able to ask questions for clarification if needed. As continued professional development, Brian met with Calvin both before and after each of the instructional sessions. Each session prior to class consisted of a module overview with suggestions for implementation. After each instructional session, both met once again to discuss the progress of each student and PSI implementation for the specified module. Once the initial section of the professional development workshop was completed, Brian was on hand for the implementation of the unit as a participant observer. During the implementation of the instructional model, Calvin was able to ask Brian for clarification concerning any aspects of the instructional model. After each class session Brian would give feedback to Calvin concerning his implementation style of the PSI instructional model. Although during the beginning of the professional development program, Calvin assured Brian that he understood the model and stated he was capable of implementing the instructional model effectively.

Data Collection

The data sources used in this study were treatment fidelity, daily journal recording, observations, and critical incident reports.

To prevent procedure deviations from potentially affecting the implementation of the PSI instructional model, treatment fidelity was considered. The researcher ensured that the professional development offered to the teacher was conducted in an organized and methodical way. The teacher was offered standardized modules for PSI instruction; however, he did have a few issues with delivery of the modules as outlined.

The researcher recorded in a daily journal Calvin's actions and teaching strategies. The main purpose of the journal was to record the thoughts of the researcher concerning whether or not the teacher was adhering to the PSI model as outlined during the professional development sessions or if he had reverted to his traditional style of teaching.

The researcher conducted 12 observations (the duration of the unit). Field notes were taken concerning how the teacher conducted each class session with as much written down as possible.

Both the researcher and the teacher completed a critical incident question at the end of each lesson during the study to get their immediate thoughts of the lesson that was taught and observed. In general the critical incident question for both the researcher and the participant was "how do you feel about today's lesson?" The critical incident report question was designed to allow both the researcher and the teacher to reflect on significant occurrences during a lesson (Flanagan, 1954). This technique has been used to reveal concern among both teachers and students, capturing their experiences and perceptions within physical education (Hastie & Curtner-Smith, 2006).

The teacher received an index card to record and describe particular incidents and interactions that happened during the implementation of a lesson. The researcher recorded his thoughts concerning the implementation of the specific lesson within his daily journal entry. A total of 14 critical incident reports (2 during professional development and 12 during implementation of instructional model) were collected.

Data Analysis

Thematic coding was used to analyze all data and identify common themes (Denzin & Lincoln, 2003). First, the patterns were identified. Second, all the data related to the already classified pattern was identified. If data did not fit into an already classified pattern, a new pattern was created. Third, related patterns were combined and catalogued into subthemes. Themes were defined as units derived from patterns such as “conversation topics, vocabulary, recurring activities, meanings, feelings, or folk sayings and proverbs” (Taylor & Bogdan, 1984, 131).

Trustworthiness of the Data

The review and analysis of data from journal entries, observations, and critical incident reports within and across contexts facilitated data triangulation during analysis (Denzin & Lincoln, 2003; Janesick, 2007). Across context triangulation was used to see if the research instruments supported the findings.

Results

Three themes that emerged from the data were (a) slow to change to new ideas; (b) change of teacher attitude; and (c) difficulties giving control to students.

Slow to Change to New Ideas

After the introduction of the PSI instructional model through the initial professional development workshop, Calvin believed he had a solid grasp of the model. From the first lesson, the teacher decided to make changes he felt were best for his class. The PSI instructional model is designed for students to work independently so that students can progress at their own pace, whether they move fast or slow. Calvin immediately put the students in pairs. When asked why he chose to put students to pair the students he noted, “The students don’t want to be alone. If

they are alone they will not want to participate in the lessons.” Calvin had already made the assumption the students would not participate if they did not work collaboratively. At this point, he was reluctant to implement new changes in his own teaching style. While he understood the PSI model during the professional development, his understanding did not translate into acceptance and implementation. Calvin has been in a physical education teaching environment where direct instruction has not only been encouraged but is practiced by fellow physical education teachers at his school. Because of the instructional culture of the school, Calvin also seemed reluctant to change.

On the first day of the professional development, instructional videos had been selected to introduce the students to a particular skill. Calvin had access to the videos during the implementation of the instructional model. Calvin used the videos in various ways. On first day of instruction of PSI model, there were individualized computers stationed throughout the gym so the students could watch the videos of their choosing based on their progress through each of the modules. Although sufficient access to computers was supplied to both the teacher and students within the gym, Calvin decided to select a few instructional stroke videos to show during an entire class period. This decision did not align with the PSI model. He decided to have whole class instruction. While viewing the videos, the students talked, played, and even busied themselves on their cell phones. Because of the students’ lack of focus on the videos, for the duration of the instructional model, Calvin chose to demonstrate the badminton strokes for his class. Calvin decided to use this approach because he felt it was best for him to maintain a more orderly classroom setting. PSI does give the option to the instructor to demonstrate stroke work; however, the demonstrations should be individualized and tailored to each student’s progress. Calvin’s demonstrations were reflective a command or traditional style

of teaching with all students at the same place in their progress. Calvin thought it best to keep the class together and learn together as one group.

Many elementary/middle school physical education classes have very limited reading opportunities incorporated in the class instruction. Because PSI has a workbook, both Calvin and Brian agreed that this would be the perfect opportunity for the students to take their workbooks home and read the information before they came to class the next day. The workbook pre-reading activity could have been done outside of class to decrease the reading time in a physical education class. This was only an option and not for each evening. This would allow the students more practice time during class instead of using most of the class time reading.

After the first class period, Calvin had second thoughts and decided to collect the workbooks at the end of the each class period. After the first session, the researcher and Calvin discussed the textbook collection and why he did not allow the student the opportunity to take their workbooks home to read. He responded by saying, “all they are going to do is lose them or leave them somewhere around the school, so I decided to take them back up.” Although Calvin could have been right in his reasoning, this spontaneous decision defeated the purpose of allowing the students the opportunity of reading ahead. In addition, the students would be required to read more in a physical education class thus decreasing the amount of hands-on practice. Not only did the decision to keep the books at school played a major role in the progression of implementing PSI instructional model, there were other issues that decreased the effectiveness of the implementation. Calvin was inexperienced with the sport of badminton and needed the instructional videos as a teaching tool. He would have also done well to allow the students extra time pre-reading for homework as this may have assisted in the ease of instruction.

Calvin's lack of acceptance of the PSI model and its implementation led to additional issues as discussed in the first day researcher's notes:

I arrived early to help set up the court and equipment for instruction. Everything was set up and ready for the students to participate in badminton using the PSI instructional model concept. The students came in and headed to the locker rooms to get dressed for class. Once class came from the locker rooms, it was as if a bomb went off. Some students were running around chasing each other. Some were wrestling. Others were standing around laughing and joking on each other. It seemed like the students did whatever they wanted to do, and the teacher did not have adequate classroom management. Once Calvin finally gets the majority of the students to listen (about 15 minutes later), he starts to tell the students about the PSI instructional model and how the classroom setting would change for the next few weeks. After his explanation, Calvin decided to have a whole class instructional presentation showing the students how to hit the birdie back over the net. He lined all 35 of the students up to hit the birdie over the net to him. Basically, he conducts a personal lesson with each student. So I am sitting here observing 35 students in one line waiting for their turn to hit the birdie back to the teacher because this is how he chooses to teach today. While waiting, some students decide to use the racquets as weapons as they take turns hitting each other. I must admit this was a very frustrating situation to watch. There were five computers with demonstration videos cued for the students. The video content ranged from effective execution different grips and strokes to badminton shots. Before the start of class, both Calvin and I agreed these videos would be used. He is definitely in need of more PSI professional development and more urgently, classroom management professional development.

Although Calvin seemed confident in the PSI model, he reverted back to his comfort zone of teaching in a traditional style. There was lack of classroom organization and classroom management. These seemed to have been possible hindrances to the program's effectiveness.

Change of Teacher Attitude

During the instruction, professional development lasted throughout the twelve sessions. Calvin and Brian meet before and after each class period. At lesson five, Calvin began to change his attitude about the PSI instructional model and felt it could be useful for his students. He seemed to be at least willing to give the PSI model some credence because his students began to grasp the concepts of the modules. Additionally, Calvin's attitude began to change toward trying something new in the classroom. During the initial stages of PSI implementation, Calvin would

revert back to a more traditional teaching methodology. He wanted to lecture and maintain control, but by the midpoint, he began allow the students to perform the practice drills and write down their own scores from the workbooks. The students no longer had to stand in a line to complete the drills. Although these were minor changes in Calvin's attitude and instructional practice, changes were seen. Even with these minor changes in instruction, classroom management issues were less of a problem. The students were less disruptive and were listening. They wanted to participate in the lesson.

Calvin did appreciate the practice opportunities the PSI instructional model provided. Calvin expressed these changes in two different ways. First, he saw that students who could not hit the birdie at during the first session were hitting the birdie and able to volley. Secondly, Calvin's students actually wanted to learn and play badminton because they began to ask questions like "when will we play" and "are we ever going to play a game?" The students recognized the practice opportunities provided through the lessons prepared them for playing a full game of badminton.

Although Calvin did appreciate the practice opportunities and realized that the students were eager to learn badminton, there was hesitancy in changing his attitude to a new style of teaching. During the continuous professional development, Brian continued to express the importance of following the PSI model and all of its functions for maximal results. It seemed that Calvin understood the implementation process, but found it difficult to change from his traditional approach. Brian could see he was willing to try new a style but Calvin found it easier teaching as he had always done—the "curricular zone of safety" (Rovegno, 1994).

The circular zone of safety suggests that an instructor learns how to survive with basic pedagogical skills initially learned during their first years of teaching, but is very limited in their

acceptance of new ideas gained through professional development. The instructor is able to integrate background knowledge about instruction that is then used to help students to learn. During the latter part of the study, weeks five through twelve, it seemed Calvin wanted to modify his instructional presentation, but he reverted back to the traditional command style of teaching. Brian noticed that some of the students recognized the hesitancy of their teacher toward changing. Some students started to question why he was not following lessons outlined in their workbooks. Brian overheard two students speaking to one another. One student stated,

Aren't we supposed to be following this book? Why did he give us this book if he is going to teaching us something different? This is stupid. I could be half way finished by now. I'm not reading this book anymore. (Alex, field notes)

Brian showed this field note comment to Calvin asked him what he thought about it. He smiled and said, "Man, that student always has something negative to say about class." Calvin never acknowledged the possibility that some of his students realized he was having a hard time implementing the new curriculum, which was essentially affecting their learning badminton.

Difficulties Giving Control to Students

During the first day of professional development program, Brian expressed to Calvin the importance of letting the students have control of their learning within the PSI instructional model. During that time, Calvin guaranteed he would have no problem letting his students have the liberty needed to complete the modules at their own pace. Even during the initial meeting and allowing Calvin the opportunity of playing the role of the student, he expressed the excitement he thought the students would have using the PSI model. Even though he expressed confidence in the students' autonomy prior to the instructional time, Calvin found it very difficult to turn control of his student learning to them. For example, during one of the early lessons, Calvin lined up the entire class and had each student, one by one, hit the birdie back to

him over the net. Not only was this one example of Calvin not being able to relinquish control to his students, the lesson that Calvin was teaching was not a part of the PSI instructional model. Immediately after that first lesson, Brian knew to modify the professional development to clarify and reiterate the proper way to implement the PSI model. Brian encouraged Calvin to empower his students in their learning and once again walked through the proper steps for success of the instructional model.

Calvin seemed to display a lack of classroom management, which may have hampered him from giving up control to his students. Almost every class period was disrupted by unruly students, which Calvin had to take time to discipline. At the beginning of the unit, there was a group of students who consistently did not dress out for class but would find ways to distract other students. However, by the seventh lesson, the students who were seen as being a disturbance started dressing-out for PE and participating in the modules. Their efforts to distract the other students did not work as planned. The students who wanted to learn just ignored them.

Although the participation of the students increased, their teacher continuously restricted the pace of student learning. Lesson eight seemed to be a critical turning point for Calvin. He finally relinquished some control and the students were able to move through the modules in pairs. Although Calvin would allow some control to the students by lesson eight, by lesson ten he was back in control of the class because of classroom management issues. When asked why he decided to take control back the students, he said, “They can’t handle the freedom.” He said,

I know these kids better than anyone. I have taught most of them since they were in kindergarten. And because I have known them for so long, I know they are immature and not ready to do anything on their own. I can’t trust these guys. So as soon as I see one person mess up or start trouble, the whole class is going to be affected because they feed off of each other. They need to mature before they can participate in any type of activity that allows them to do something on their own. Most of the students who started dressing for class went back to not dressing out and behaving as they previously did during the early stages of the instructional model.

Discussion

Treatment fidelity, an assurance that any treatment given to participants is a quality product, was assessed in this study so that each aspect of the treatments offered by the researcher were given both accurately and consistently to the participant (Taylor et al., 2007). Table 1 shows the steps taken to ensure fidelity and how fidelity was assessed. The five topics included on the chart are treatment fidelity to Guskey’s Model of teacher change, professional development, treatment implementation, treatment receipt, and treatment success.

Table 1

Assessment of Treatment Fidelity Table

Fidelity	Steps to Ensure Fidelity	Fidelity Assessment
Treatment Fidelity to Guskey’s Model of Teacher Change <i>(did the intervention include any changes in teacher beliefs, classroom practices, learning outcomes, etc.)</i>	<ul style="list-style-type: none"> ○ Review by other researchers in the field ○ Ensure adequate professional development is received for both researcher and participant 	<ul style="list-style-type: none"> ○ Review of comments and suggestions from informal and formal interviews
Professional Development (PD) <i>(did the researcher deliver PD as designed?)</i>	<ul style="list-style-type: none"> ○ Initial professional development provided prior to start of PSI implementation ○ Periodic reassessment of PD program provided to participant 	<ul style="list-style-type: none"> ○ Forms used to document formal and informal interview, journals, and critical incident reports ○ Schedule for retraining, as needed
Treatment Implementation <i>(did researcher implement the professional development as designed?)</i>	<ul style="list-style-type: none"> ○ Researcher monitoring with video and field notes ○ Treatment contamination minimized by standardizing the professional development ○ Additional professional development as needed 	<ul style="list-style-type: none"> ○ Standardized delivery of materials ○ Results of monitoring ○ Assessment/survey of participant understanding of treatment ○ Informal interviews, checklists to ensure fidelity
Treatment Receipt <i>(did the participant receive the treatment as intended?)</i>	<ul style="list-style-type: none"> ○ Monitor participants understanding ○ Review of assigned readings ○ Informal interviews before and after each unit to assess use of PSI model 	<ul style="list-style-type: none"> ○ Review of results from informal interviews
Treatment Success <i>(did the participant practice the PSI Model as designed?)</i>	<ul style="list-style-type: none"> ○ Lack of success in implementation; reversion to traditional model of teaching ○ Little to no skill in performing attributes of PSI Model 	<ul style="list-style-type: none"> ○ Researcher’s assessment of participant lack of change in behavior

During the study, there were steps to ensure treatment implementation, receipt, and success. For the implementation phase, the researcher monitored the videos, consistently recorded field notes, and standardized the professional development for the teacher. For the receipt phase, the researcher monitored the teacher's understanding and reviewed any assignments. Although treatment fidelity was monitored, the teacher did not successfully implement PSI and reverted back to a more traditional style of teaching during the weeks of the study.

Conclusions

The purpose of the study was to examine the level of change in Calvin that occurred after the professional development program for PSI. The ongoing professional development program that was implemented does support the notion that professional development is a gradual process toward the change of teachers' beliefs and attitude. Similar to the research conducted by Hawley and Rosenholtz (1985), this study agrees that teachers are less likely to make changes on their classroom practices of their own. Additionally, this study confirms Carter and Fewster's (2013) findings that not only are experienced teachers slow to make change toward new ideas in the classroom, but it seemed as if Calvin could not totally commit to the instructional model because he showed signs of not trusting the instructional model to teach his students effectively or instruct the students in a better way than he believed he could accomplish from his prior knowledge of teaching. In the research conducted by Crandell (1983), teachers had success only after they had fully engaged in the instructional model. Calvin showed signs of difficulty implementing a full version of the instructional model to his even though he received a full day of professional development along with continuous professional development throughout the duration of the study.

This study also found that Calvin was unable to relinquish control to his students. Research confirms that changes in teacher's behavior and attitude do not occur immediately (Crandell, 1983). This study would also suggest that experienced teachers need pressure-less opportunities to develop and implement new skills. Guskey's (2002) research asserted "it is not the professional development that changes teachers, but the experience of successful implementation that changes the attitudes and beliefs of teachers" (p. 386). The results of this study demonstrated that teachers who rather not give up control and make immediate changes in their teaching style need a longer time in professional development activities for realistic changes in teaching style. For more favorable results, Calvin could be given another opportunity for professional development for a longer period of time. This could have a positive impact on the implementation of new ideas.

Future Studies

Future studies could lead one to see if the PSI instructional model could be used effectively within a middle school setting, perhaps in a different school or not. Also a follow up study with Calvin after additional professional development could result positive changes in Calvin's beliefs of teaching the PSI instructional model.

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