MUSIC EDUCATION:

IS IT TIME TO GO WITH THE FLOW?

by

Brian David Bersh

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Approved:_____
            Suzanne Burton, Ph.D.
            Professor in charge of the thesis on behalf of the Advisory Committee

Approved:_____
            Harvey Price, M.M.
            Committee member from the Department of Music

Approved:_____
            Leslie Reidel, M.FA.
            Committee member from the Board of Senior Thesis Readers

Approved:_____
            Ismat Shah, Ph. D.
            Chair of the University Committee on Student and Faculty Honors

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ABSTRACT

Professional development for music teachers often occurs in short, unrelated workshops-rarely enacting change in practice. Therefore, the purpose of this research was to investigate elements that contribute to effective, sustained professional development for music teachers. Specifically, this study is an examination of the efficacy of a 90 clock-hour, immersion-based professional development cluster on steel pan through the unique lens of *flow theory*. According to Csikszentmihalyi (1991), flow is considered to be an optimal state in which skill and perceived level of challenge match. In the present study, music teachers' (N=33) experiences in the steel drum professional development cluster were documented. The cluster was a 5-day period in which music teachers were immersed in learning how to play and teach steel pan. Data sources were participants' daily journal reflections (N=137 entries), videotaped rehearsals (13 hours), interviews (N=7), and results from a follow-up satisfaction survey (N=25; 65% return). Csikszentmihalyi's *indicators of flow* were used to code the data. Prevailing indicators of flow found to exist for the participants were *immediate feedback, chance for completion,* and *high levels of interest/motivation.* Findings suggest that the immersion context fostered participants' growth in knowledge and skill for playing and teaching steel pan. Findings also suggest that immersion-based professional development promotes flow and has many attributes of an effective professional development paradigm.

Chapter 1

REVIEW OF LITERATURE

Introduction

There is seemingly a new craze that is diffusing across the instructional borders of music education: a widespread embrace of steel pan, also referred to as the steel drum, which is opening new eyes to music. What is it about playing the pan that is attracting people of all ages into pursuing music in a way never before thought possible? The elements inherent to Mihaly Csikszentmihalyi's theoretical concept of *flow* offer a plausible motivation for the success of this emerging art form. A state of optimal experience in which consciousness is ordered through the ability to purposefully focus attention, the flow experience is so enjoyable that people are willing overcome great barriers for no other reason than achieving it.

This study is an investigation into whether the elements of flow are present in the teaching and learning of steel pan. Specifically, this research is focused on whether the Delaware Department of Education's immersion-based Steel Drum Professional Development Cluster fosters flow. This examination will provide insight into the efficacy of using steel pan as a means for professional development, and into whether or not music educators experience flow during an intensive 90-clock hour professional development cluster.

The professional development of teachers should address the need and desire for improvement in a professional, educational setting. The goals of professional development should be to change, adapt, and strengthen a person's knowledge base, providing him with the skills needed to be successful in the ever-changing environment that constitutes the educational system. In education, there are many diverse types of professional development; each producing varied results in relation to sustaining teacher change. Unfortunately, many of these forms of professional development prove to be ineffective in changing teacher practice. It is important to refer to the large canon of research that has been conducted on what factors provide for an effective learning environment for teachers when addressing the issue of effective professional development. An international body of literature focuses on the importance of professional development that provides effective, long-term change in teacher practice.

In order for valuable change and contributions to be made in response to the lack of content at the foundation of many existing professional development programs, problems must first be addressed in the current practice of teacher education (Cohen and Hill, 2001; Colwell, 1996). Reasons for why certain types of professional development are unable to create contexts that promote long-term teacher change may be derived from a misunderstanding in how people learn. There may be confusion about which procedures are able to transmit information effectively from one person to another. An illusion exists that "thinking is synonymous with the manipulation of information" (Prawat, 1999, p.6). The process of classification, organization, storage, and retrieval of data by participants does not translate into understanding. The importance of how one initially absorbs

information is inadmissible, yet the unique perceptions and perspectives of participants are dismissed in many traditional styles of professional development (Prawat, 1999). In essence, if no connection is made between new information and a teacher's existing knowledge, then new, seemingly irrelevant data will be "overlearned" during the predetermined length of time that consists of a given professional development experience. The Association for Psychological Science (2007) has shown through a research study on "cramming" that drilling the study of a single topic into a single session, also referred to as overlearning (Langer & Imber, 1979), reduces long-term retention. Accordingly, research illustrates the importance of having a sufficient duration of time for a professional development experience to be effective in changing teacher practice (Boyle, While, & Boyle, 2004; Colwell, 1996; Cohen, 2001; Garet et al., 2001; Klein, 2007). The process of "cramming" is not an effective method of learning new concepts, and is certainly not an efficient means of guiding educators on their quest to learn and implement new pedagogical techniques in their classrooms.

Approaches to Professional Development

Traditional Approaches to Professional Development

Weekend workshops, in-service days, and conference attendance are common approaches to professional development in recent years (Boyle et al., 2004; Parsad, B., Lewis, Farris, & Westat, 2001). However, these traditional approaches to professional development are proving to be inadequate in providing fundamental change to how teachers teach (Boyle et. al., 2004; Parsad et al., 2001). While these experiences may be

the catalyst for an awareness or interest in making change in one's teaching practice, the

nuances of a real classroom context are absent, resulting in a failure to provide an

informed, contextually relevant circumstances from which teachers can learn (Colwell,

1996). Furthermore, broadly telling teachers about strategies that might be used to help

them in the classroom does not usually lead to deep understanding or enactment

(Hammerness, Darling-Hammond, & Bransford, 2005). To the contrary, this type of in-

service professional development experience rarely reflects the individual needs of

teachers (Colwell, 1996). According to Cohen and Hill (2001), shorter-term learning

opportunities for teachers did not allow teachers the opportunity to focus on either

student curricula or methods of assessment. Consequently, many teachers in these

professional development situations fail to implement practices relating to their

reformer's desired goals.

Content of Effective Professional Development

Traditional approaches to professional development do not allow enough time to

produce any meaningful changes in classroom practice (Garet et al., 2001). These

approaches do not a) acknowledge differences among teachers (Lieberman & Wood,

2001; Siskin, 1994), b) take into account what teachers know about practice (Lampert &

Ball, 1999), and c) are rarely developmental (Ball & Cohen, 1999). Without time to

address these important elements, the content of professional development programs lack

relevance and meaning for participants. Coherence between the content that is presented

in a professional development setting and the pre-existing knowledge of teachers remains

integral to the success of changing teacher practice. Professional development must be designed to provide a bridge between what teachers learn and how it is implemented in a classroom (Fullan & Steigelbauer, 1991).

Coherence in Professional Development Content

The treatment of professional development as being a separate entity from the classrooms in which teachers are expected to teach severely limits its effectiveness (Fullan, 1995). Teachers need to feel empowered in their newfound knowledge, especially if they are being asked to make changes to pedagogical techniques they already use and trust (Hookey, 2002). The stigma of professional development being done "...*to* or *for* teachers, rather than *by* or *with* them" (McCotter, 2001, p. 701) is a serious dilemma when it threatens to separate teachers from the reality of their classroom. New innovations should be presented as part of an existing framework for progress. In a study by Penuel, Fishman, Yamaguchi, and Gallagher (2007), teachers were more likely to feel prepared for their own student's inquiries when they were able to discuss the alignments of their new teaching innovation with their school's standards, and how the new program might integrate with the curriculum and existing classroom activities. Coherence was naturally a positive indicator for teacher change. Having significant, ongoing professional development that positively aligns with existing school goals is imperative to a teacher's willingness to adopt a new innovation, and commitment to sustaining change in their teaching practice.

<u>Long-Term Professional Development</u>

Longer-term professional development has been shown to positively effect teaching practice (Boyle et al., 2004; Bush, 2007; Davies & Preston, 2002; Garet et al., 2001; Mevarich, 1995; Penuel et al., 2007). There are a number of characteristic elements of effective long-term professional development experiences that allow for realistic teacher change. Additional professional development offered to teachers after their initial experience proves to have a significant impact on teacher knowledge acquisition and change in practice (Penuel et al., 2007). Indeed, researchers have demonstrated that sustained, long-term professional development correlates with changes made to teaching and assessment techniques, as well as changes in planning, teaching style, and teacher collaboration (Boyle et al., 2004).

There are a number of qualities inherent to an effective professional development program. When these elements are present, high success rates have been yielded and learning opportunities sustained. Research suggests that those programs which contain study groups, include coaching or mentoring arrangements, create networks, and have immersion in inquiry are likely to be more effective in enacting teacher change (Boyle et. al., 2004). The content within these programs must be "…results-driven and job embedded, focused on helping teachers become deeply immersed in subject mater and teaching methods, curriculum-centered and standards-based, sustained, rigorous, and cumulative, and directly linked to what teachers do in their classrooms" (Sparks, 1999, p. 8). When comparing these types of programs to traditional forms of professional development, they are typically longer in duration (Boyle et al., 2004). In addition to

allowing teachers more opportunities to practice and reflect upon their teaching within the context of the new ongoing activities, opportunities are provided for serious collaborative planning, learning, and assessment in a long-term professional development setting (Sparks, 1999).

<u>Study Groups</u>

Study groups engage teachers in structured and collaborative interactions around topics identified by the group (Boyle et al., 2004). A strong support system is important for any teacher to be able to successfully implement change within a classroom. It has been revealed that even an act as simple as helping teachers with their primary setup for a new innovation can positively impact the implementation of new pedagogical techniques (Penuel et al., 2007). Support from administrators, the community, and colleagues is imperative for a teacher to feel fully confident in trying something new and exciting (Bush, 2007; Upitis, 2005). While a professional development program may not be able to attend to all of these issues, it can provide a teacher with the tools necessary to create a solid foundation for success.

The concept of learning within a community is a highly attractive characteristic of a professional development experience. According to Lind (2007), professional development should take place over time involving the collaboration of peers and the sharing of one's own expertise. When in a learning community, teachers are able to approach issues pertaining to their working situations, and they are able to seek solutions to problems with not only the new tools provided by the professional development experience, but also through the sharing of perspectives, and previous

knowledge and experience (Guskey, 1994). Teachers do not enter into new situations as blank slates. Previous training equips them with a vast supply of knowledge available for sharing with peers within an atmosphere of collegiality and professionalism (Guskey, 1994; Pohland & Bova, 2000). This practice of discussion and application creates a dialogue that allows teachers to solve problems jointly, and ultimately impacts their instructional improvement (Colwell, 1996; Tilemma & Imantis, 1995).

Penuel (2007) provides a number of reasons for why teachers working together in a professional community result in successful retention and implementation; reforms have more authority when embraced by peers. The trust that results from collaboration provides clearer understandings of presented and constructed content and motivates the commitment to improving student outcomes. Furthermore, a form of social capital is developed through the interactions among teachers as they implement new methods together. Hord (1997) affirms these notions, commenting on the culture of mutual respect and trustworthiness that is built through the shared personal practice and support displayed by a professional community, resulting in an increased commitment to one's work (Morrissey, 2000). The value of collaboration is a profound theme that penetrates much of the literature pertaining to effective professional development (Fullan, 1995; Garet et al., 2001; Hammerness et al., 2005; Horsley, 2002). Fullan (1995) believes that there is a ceiling effect to how much a person can learn when alone. The benefit of collaboration within a community is a deeply personal one, providing feelings of belonging and validation that eventually effect professional growth (Horsley, 2002). Within a professional community, novice and seasoned teachers alike are able to pose

problems, challenge commonalities, identify discrepancies between theory and practice, and expose those idiosyncrasies within a current curriculum (Hammerness et al., 2005). A new identity is forged as teachers begin to see themselves as lifelong learners. Brown and Duguid (2002) suggest that the conversation that results from these communities of practice "…continuously but almost imperceptibly adjusts a group's collective knowledge and individual members' awareness of each other" (Klein, 2007, p. 186).

Working with others can be a stimulating experience, challenging one's existing beliefs, and causing new assessments and reflections to be made (Lind, 2007). Carmichael (1982) maintains that students will not be able to raise their achievement levels without an improvement in teacher practice. Professional learning communities provide the opportunity for teachers to "…look deeply into the teaching and learning process and to learn how to become more effective in their work with students" (Morrissey, 2000, p. 3). Once positive relationships have been established among teachers in a professional community, the sharing of teaching methods and strategies creates a cohort of continuous inquiry and improvement.

A preponderance of research demonstrates that professional learning communities provide the structures and assistance essential to educators who are addressing the increasingly diverse needs of their students (Reyes, Scribner, & Paredes Scribner, 1999). Just as students need support to succeed, likewise, the support provided by a professional community fuels new learning and motivates teachers to succeed (Morrissey, 2000).

<u>Coaching and Mentoring Arrangements</u>

Coaching and mentoring arrangements allow for teachers to work one-on-one with equally or more experienced teachers (Boyle et al., 2004). When instructors discuss the expected difficulties of implementing new curricula while reflecting upon participants' technical and pedagogical knowledge they help teachers to implement particular innovations in their educational contexts (Mevarich, 1995). Junda (1994) revealed in her study that feedback given by instructors was valuable in helping teachers to develop instructional skills and adapt new curriculum to their respective schools. Workshops may introduce or reinforce necessary content knowledge and skills needed for a job, but mentoring continues and develops the individual connections between teachers with various backgrounds (Klein, 2007).

Professional development training gives teachers new tools to work with, but practicing these new ideas alone will not result in significant, lasting changes in their classroom. As Tillema and Imantis (1995) found, practice may lead to changes in teacher's perceptions and attitudes, but *supervised* practice promotes the competency needed to result in a change of performance. The practice of new ideas and concepts invariably proves to be taxing, causing anxiety, confusion, and frustration. Teachers will most commonly become less efficient as they let go of techniques with which they already feel comfortable (Hammerness et al., 2005). To this end, Thompson and Zeuli (1999) profess the importance of a professional development organization's role in developing teachers' practice habits as being consistent with the newly learned concepts.

The application of new concepts creates situations in which experienced teachers are placed in a novice state. This new role for veteran teachers is neither a familiar nor comfortable position, and teachers of all levels need support throughout the process (Mevarich, 1995). Without the proper support, initial frustration may evolve into skepticism and even withdrawal from the innovative method. However, with the help of a mentor these anxieties have been shown to subside, and new methods can be further explored and adapted to teachers' individual needs (Mevarich, 1995). Students in a classroom rely on support from their teachers just as teachers in a professional development setting need encouragement and guidance from their instructors. Only after teachers have mastered the content and successfully implemented it will they feel comfortable with the changes they have made (Mevarich, 1995).

Assistance with new pedagogical techniques cannot end at the conclusion of a professional development period. A study by Ingvarson et al. (2005) found that "few participants actually received assistance and feedback in their classrooms during the critical and difficult implementation phase when they were trying out new practices" (Ingvarson, 2005, p. 9). According to Penuel (2007), site-based professional development in the form of coaching may alleviate this problem by providing assistance to teachers within the context of the teacher's performance. The importance of long-term professional development is evident, and instructors need to be present in order to continue to support teachers.

Networks

Networks link teachers to other like-minded individuals who wish to pursue common goals, share information, and address common concerns (Boyle et al., 2004). Collaborative conversations between professionals help to "…situate new knowledge within the framework of personal experiences and facilitate questions that lead adults to examine their core beliefs and the traditions of their profession" (Lind, 2007, p. 4). Teachers tend to appreciate an exchange of ideas, shared planning, and outside contributions (Killion, 1999). Networking can connect individuals with similar ambitions and arrange for the possibility of continuous professional development.

An attractive quality about networks is that one's membership is the result of purposeful consideration. Adult learning tends to be largely voluntary, necessitating the need for mutual respect. Persons involved in a network have made the deliberate decision to continue their quest toward lifelong learning (Coffman, 2002). Networking transports adults from their individual contexts allowing for a redistribution of knowledge and strategies (Klein, 2007). Through networking, a venue is provided for collaborative, reflective, and self-directed learners to take responsibility for their own learning experiences and become resources for one another (Coffman, 2002).

Immersion in Inquiry

Immersion in inquiry engages teachers in the kinds of learning that they are expected to practice in the context of their own classrooms (Boyle et al., 2004). In traditional professional development settings, teachers are often told about new ideas, but rarely are shown how to use them within their own teaching settings. "To carry out the demands of

education reform, teachers must be immersed in the subjects they teach, and have the ability both to communicate basic knowledge and to develop advanced thinking and problem-solving skills among their students" (Garet et al., 2001, p. 916). Teaching new models of thought in the context of their application, and allowing for the *demonstration* of new concepts, is a superior method of helping one to understand new ideas (Prawat, 1999). According to Gough, the goal of such an immersion paradigm is the "simultaneous development of a holistic conceptual understanding *and* a highly differentiated sensory awareness of the learner's environments" (Gough, 1989, p. 235). To be truly immersed in the subject matter content, training must create an authentic learning environment that is connected to teachers' prior contexts. The resulting framework for instruction becomes a natural setting for new concepts to be related, learned, and discussed (Tilemma & Imantis, 1995). In this scenario all concentration should be placed on mastery learning, and not on the unrealistic nature of a perfect setting. The immersion approach also changes the role of the instructor, who is now less of a *sage on the stage* but rather a *guide on the side*, working collaboratively with participants to overcome any difficulties that may arise (Prawat, 1999).

Another significant aspect of the immersion paradigm of professional development is the importance of learning from one's own mistakes. Listening to descriptions of another person's experiences, and the success or failure that they have had utilizing a certain method can be very educational for teachers. However, only after one has experienced something does one truly understand its subtleties. The inevitable obstacles that one must overcome in learning and applying something new may open the

door to new opportunities for learning and success that are unique to every individual.

Consequently, teachers become more prepared to teach their own students than had they

never encountered any hardship in the first place (Hammerness et al., 2005). The

immersion approach places teachers in the context of the circumstances that they will

face in their own classrooms, which forces them to analyze their own teaching practices.

The result of this approach can be a dramatic impact on the amount of content teachers

learn, as well as how confidently they bring their newfound information into the

classroom (Prawat, 1999).

<u>Reflection</u>

A benefit of having long-term professional development experiences is that there

is adequate time for reflection. Richardson (1990) argues:

> Empowerment is threatened when teachers are asked to make changes in activities
> without being asked to examine their theoretical frameworks. In fact, teacher
> empowerment does not occur without reflection and the development of the
> means to express justifications. (p.16)

Adults are able to learn and change their frames of reference when they are able

to critically reflect on their own assumptions, mindfully embracing new ways of thinking

(Lind, 2007). Lind refers to this process as transformative learning, and believes that

without adequate opportunity to reflect on one's own learning process, a new unfamiliar

process will not be adopted by teachers (Lind, 2007).

<u>Journals</u>

Two methods commonly used for teacher reflection are the use of journals for

more immediate response to the professional development experience, and portfolios for

long-term assessment. Leglar and Collay (2002) define learning journals as reflective logs that can be used by teachers to document learning over time, serving to record reactions to course content, methodology, and teaching experiences. This written record serves as a reflective dialogue through which a teacher may examine his own values and assumptions. Journals may also provide an emotional outlet for anxiety, or build confidence by promoting autonomy. From an instructor's perspective, journals are invaluable opportunities to communicate confidentially with students, and provide personalized feedback. Obstacles that arise in participant responses can help guide future improvements to teacher practice and curriculum. However, for journals to be used successfully, participants must be given adequate time to complete their reflections with consideration and care (Leglar & Collay, 2002).

Portfolios

Portfolios are another form of personal reflection that may be used to represent participant growth over a long period of time. Wade and Yarbrough (1996) comment on the ability of a portfolio to show authentic growth and work in manner that transcends a formal test. A portfolio allows a teacher to document his own learning while also providing a framework for including one's own input and artifacts of the learning process. Hammerness et al. (2005) highlight the importance of how comprehensive portfolios can be, serving as an amalgamation of knowledge across numerous domains. In addition to analyzing their own teaching, planning, assessment, reflections, and student work, teachers are able to evaluate their own professional and personal growth throughout their experience (Hammerness et al., 2005). A portfolio is unique in that it

allows teachers an opportunity to practice and reflect on their teaching during both the formal professional development as well as during their time teaching in the classroom (Hammerness et al., 2005).

Shulman (1998) describes a particular phenomenon typical of teaching at all levels: teachers with *pedagogical amnesia* suffer from being involved in a daily, multifaceted obstacle course (the classroom)- a task proving to be so expansive in its demands and rewards that one has an inability to recall the fruits of his own labor (Hammerness et al., 2005). As Borko (1997) suggests, portfolios enable teachers to identify their strengths and weaknesses, and make connections between theory and their own classroom practice. Perhaps more persuasive in sustaining teacher change is whether a teacher can examine his own work, and rid himself of pedagogical amnesia by appreciating the path he has taken, and the rewards of his labor. A portfolio supplies this opportunity. However, research has shown that while the process of constructing portfolios can be a powerful tool of professional development, benefits vary depending on the levels of guidance and feedback instructors or supervisors provide (Hammerness et al., 2005). When a framework is established that provides standards, structured expectations, and guided opportunities for reflection, more positive outcomes occur for participants than if they had been left on their own (Hammerness et al., 2005).

Bryck et al. write, "reflection upon practice leads to deepened understandings of the process of instruction and of the products created within the teaching and learning process" (1999, p.6). The value of study groups, mentoring and coaching arrangements, and networks has already been explored. These three situations offer communal forms of

collaboration that serve to empower teachers during their professional development experience. Journals and portfolios are more personal forms of reflection that, while they can be used successfully in a group setting, also allow participants a sense of individuality and control in documenting their professional development.

<div align="center">Flow</div>

A well-designed curriculum is crucial to a professional development programs' success in sustaining change to teacher practice. The value of having study groups, networks, coaching and mentoring arrangements, and immersion in inquiry have been thoroughly explored in the preceding sections, revealing the importance of reflection, follow-up, support, and coherence to the success of any professional development program. What has yet to be explored is *why* these factors are so important in providing the ultimate professional development experience. Are there certain intangibles that need to be present for teachers to truly embrace a new idea and confidently implement it within their curriculum?

Psychologist Mihaly Csikszentmihalyi has researched a phenomenon known as flow. His theory of flow is centered on the idea that there exists a state of optimal experience in which "people are so involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it" (Csikszentmihalyi, 1991, p. 4). Enjoyment, according to Csikszentmihalyi, is derived from overcoming challenges. However, there are a number of elements that must be present for the flow state, or optimal experience, to occur. First, a person must have clear, realistic goals that are achievable given a participant's skill set.

An individual's pursuit of these goals brings order to consciousness, requiring total concentration of attention toward the task at hand. For this reason the environment must be suitable for concentration, with no disorder threatening an individual's ability to freely invest his energy in the task at hand. The level of concentration that an individual can assign to an activity is dependent on the flow of relevant information entering into his consciousness that is congruent with his set goals. As a result, when one enters a flow state, all irrelevant stimuli are forgotten, and the illusion of transcendence in time is created (Csikszentmihalyi, 1991).

When a person reflects on experiences he has deemed to be the most positive, the following indicators of flow are present (Csikszentmihalyi, 1991):

1. Clear goals.

2. Immediate feedback.

3. Complete concentration- the provision of clear goals and immediate feedback facilitate the creation of an environment that allows for concentration and focus.

4. Attainable goals- when a person's goals are deemed capable of completion, with skill level and challenges in balance.

5. Concern for the self disappears- one's involvement in completing the task removes the frustrations of every day life from conscious awareness.

6. Sense of control over one's actions- which seem to be almost effortless.

7. A Stronger sense of self - emerges stronger after the flow state has occurred.

8. Sense of duration of time is altered.

While at first it may seem highly implausible that time could be altered, Csikszentmihalyi offers a sound reason for the sensation of time as fleeting during a flow experience:

When all a person's relevant skills are needed to cope with the challenges of a situation, that person's attention is completely absorbed by the activity. There is no excess psychic energy left over to process any information but what the activity offers. All the attention is concentrated on the relevant stimuli. As a result, one of the most universal and distinctive features of optimal experience takes place. People become so involved in what they are doing that the activity becomes spontaneous, almost automatic; they stop being aware of themselves as separate from the actions they are performing. (Csikszentmihalyi, 1991, p.53)

There exist many similarities between the elements that must be present for a flow state to occur and the numerous qualities that the international research community has deemed necessary to have a successful professional development program (Parsad et al., 2000; Boyle et al., 2004, Csikszentmihalyi, 1991). Similarities between flow and elements of an effective professional development program are: an importance of having clear goals, meaningful feedback, participant engagement, and immersion in inquiry. A person in flow is completely focused. There is no space in consciousness for distracting thoughts or irrelevant feelings. When a person likes what he does and is motivated to do it, this focusing of the mind can become effortless, even when the obstacles to be overcome are great (Csikszentmihalyi, 1998). Granted, for this state to occur within an educational context, teachers must genuinely want to succeed in furthering the accomplishments of themselves and their students. Csikszentmihalyi mentions the autotelic experience as being a self-contained activity done without the expectation of some future benefit, simply because doing the activity is in and of itself the reward (Csikszentmihalyi, 1991). In this case, student achievement and increased self worth are

the rewards. Perhaps a professional development program, created with the indicators of flow in mind would provide an optimal experience for teachers.

<p style="text-align:center">Mindfulness</p>

One must be careful when trying to set rules and guidelines to any situation. While a flow state requires goals and relevant feedback, psychologist Ellen Langer warns against highly specific instructions that encourage mindlessness (Langer, 1990). The goal of the instructor should be the complete use of consciousness, not the drudgery of sub-consciousness. Goals set forth from an external source could actually foster an outcome orientation that encourages mindlessness (Langer, 1990). If all of the focus of professional development is on the completion of a goal, and one has preconceived notions as to whether or not he can complete the task, then two possible scenarios may play out: If the situation is too familiar to a participant, then only the necessary cues are noticed so as to complete the task, and there is no apparent need to pay attention. However, if the goals are strange, out of the realm of familiarity to a participant, premonitions of failure may enter the psyche, making him unaware of his current behaviors and actions. As Langer states, "contexts control our behavior, and our mindsets determine how we interpret each context" (Langer, 1990, p.35). In order to avoid the dangers associated with an outcome orientation, it is important for instructors to, as Csikszentmihalyi concurs (1991), provide an appropriate balance between levels of skill and challenge. If skill levels and challenges are equal, then perhaps more attention will be focused on the process, and how one can achieve the goal, than on the goal itself. In order to maintain a mindful state while achieving a goal, Langer declares there are three

essential qualities that must be present: a) The creation of new categories, b) an openness to new information, and c) more than one perspective (Langer, 1990).

The importance of these three characteristics for effective professional development is simple in nature. Entertaining new perspectives allows a person more choice in how he responds to the world around him. If one's mind is constantly approaching challenges by recognizing alternatives, then the range of possible responses to any given situation increases, and confidence and creativity may emerge. A person learning new information in an absolute fashion is given the false impression that there is only one correct way of pursuing a goal. "Deviations from some habitual way of working are less problematic if there is tolerance for uncertainty and no rigidly set method in the first place" (Langer, 1990, p.135). A professional development experience is not going to be able to prepare teachers entirely for their exact classroom experience, or the unique challenges that they will face on a day-to-day basis. Teachers must have the confidence, or rather the mindfulness, to be able to adapt themselves to the obstacles that they face.

There are parallels between Csikszentmihalyi's work on flow and Langer's concept of mindfulness. Both perspectives profess the importance of matching skill sets with appropriate challenges, and state that a task may seem effortless when in a mindful or flow state. Langer attributes feelings of effortlessness as being possible as long as an individual is actively involved, and distinctions in process are being made. Csikszentmihalyi attributes feelings of effortlessness to the order in consciousness that is attained when skills match opportunities for action, and incoming information is congruent with one's goals (Csikszentmihalyi, 1991). Interestingly, Prawat (1999)

suggests that it may actually be counter-productive for individuals who are fully engaged in material to focus too much on process, as Langer would suggest.

Langer and Csikszentmihalyi both examine the significance of a person not having an awareness of the self as being separate from the task at hand, but for slightly different reasons. In a flow experience, a person is so engaged that the activity becomes practically spontaneous, while any sense of automaticity in process to Langer would signify mindlessness. Therefore, one may question whether an optimal experience as defined by Csikszentmihalyi is mindless. A flow experience occurs when a person's attention is completely absorbed by an activity, not necessarily the completion of a goal. If a person is being mindful, considering all possible ways of completing a task, then he certainly could be completely immersed in his work, entering into a flow state. From the perspective of a musician, with performance being a requirement of the trade, both flow and mindfulness have positive implications. In practice, a musician should be mindful of the process he is using, considering multiple perspectives on how he can solve each situation. Remaining cognizant of how one is achieving something will allow for conscious improvement. However, in performance the more likely scenario is that an individual becomes completely immersed in his actions, not thinking of the process he took to get there but instead on the goal that he has been striving for. If problems do arise, he, having been mindful during practice, is in position to smoothly adapt and proceed. Therefore, maintaining a state of mindfulness in practice may prepare an individual for sustaining a flow experience. A result of being prepared to adapt to new situations in

performance is that the individual will be less likely to have to break from concentration when new stimuli enter into his environment.

Summary

Effective qualities of professional development have been identified in the research literature and involve the creation of networks, mentoring and coaching arrangements, immersion in inquiry, and study groups. In addition, meaningful opportunities for reflection, and the provision of content that is cohesive with prior experience have positive effects on teacher learning. If instruction emphasizes the indicators of flow while prescribing to these effective qualities of professional development, then the mindful participation of teachers will result in successful learning opportunities. The purpose of this study is to examine the efficacy of an immersion paradigm of professional development that utilizes the steel drum. The questions that were explored were:

1. What is the efficacy[1] of using steel pans as a means for professional development for teachers?

2. Do music educators experience flow during an intensive 90-clock hour professional development cluster?

This research study will examine the qualities of effective professional development through the theoretical lens of Mihaly Csikszentmihalyi's Flow Theory, and determine whether in fact the Delaware Department of Education's Steel Drum

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[1] Efficacy-the ability to produce the necessary or desired results. (Encarta® World English Dictionary © 1999 Microsoft Corporation)

Professional Development Cluster has those characteristics and qualities of an effective professional development program:

1. Coherence in professional development content.

2. Long-term professional development.

3. Study groups.

4. Coaching or mentoring arrangements.

5. Networks.

6. Immersion in inquiry.

7. Meaningful reflection.

Additional research on professional development and flow may yield more information concerning the qualities and characteristics of a highly effective professional development program.

Chapter 2

REVIEW OF RELATED LITERATURE

This study is focused on the importance of providing effective professional development for music teachers in order to sustain changes in teacher practice. Questions of this study address the efficacy of using steel pans as a means for professional development for teachers, and whether music educators experience flow during an intensive 90-clock hour professional development cluster?

To discern if optimal experiences can enhance professional development settings, a method of distinguishing and identifying elements of flow in an environmental context must be explored. Activities that are conducive to flow are designed to make an optimal experience easier to achieve, thus creating circumstances in which participants feel in control. These activities typically set parameters that require the learning of skills, provide goals and present relevant feedback. Such a context facilitates a person's concentration and involvement, leading to a sense of discovery, of transforming the self, and being pushed to new levels of achievement and complexity (Csikszentmihalyi, 1991).

Much of the research literature on effective professional development has utilized qualitative research techniques similar to those that will be implemented in the current study. Lind (2007), Upitis, Smithrim, and Soren (1999) make use of participant observations, interviews, video, surveys, and portfolios in their respective studies

concerning effective professional development. Penuel, Fishman, Yamaguchi, Gallagher, (2007) and Garet et al. (2001) focus specifically on the elements that make professional development effective. Hammerness, Darling Hammond, Bransford, (2005) Ingvarson, Meiers, and Beavis (2005) provide further findings on effective professional development and the value of active engagement.

Research Design

There are a number of recent studies that relied on qualitative methods of observation and analysis when researching and observing professional development settings. Data has been collected in the form of questionnaires and surveys (Parsad, Lewis, Farris, & Westat, 2000; Bowles, 2003; Boyle, While, & Boyle, 2004; Bush, 2007; Cohen & Hill, 2001; Conway, 2003; Davies & Preston, 2002; Garet et al., 2001; Ingvarson et al., 2005; Penuel et al., 2007; Upitis et al., 1999; Upitis, 2005), participant observations (Lind, 2007; McCotter, 2001; Pohland & Bova, Upitis et al., 1999), informal interviews (Conway, 2003; Killion, 1999; Lind, 2007; McCotter, 2001; Pohland & Bova, 2000; Upitis et al., 1999; Upitis, 2005), videography (Lind, 2007; Upitis et al., 1999), and journals with guided reflection (Lind, 2007; Upitis et al., 1999). Following is a review of studies that used these forms of data collection to research professional development. My own qualitative research techniques incorporated:

1. Surveys.

2. Video.

3. Participant observations.

4. Informal, structured interviews.

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5. Analysis of teacher journals and portfolios.

<p align="center">Professional Development Literature</p>

Upitis et al. (1999) studied 20 teachers in a professional development setting. The participants explored various art forms in an enriched setting to determine whether engagement in the arts would help the teachers become artists. The researchers collected data through participant observations, interviews, video, surveys, and portfolios containing reflections by the teachers. In addition, Upitis et al. developed a matrix for analyzing the conditions deemed necessary for teachers' successful transformations after their professional development experience. Two conditions considered necessary for transformation of the participants were a feeling of community, and connecting the content of the professional development with participants' prior experiences. These are two of the foremost conditions that exist in the research literature on effective professional development as being necessary for sustaining teacher change This research is related to the present study because of the techniques used to collect data. Similarly, in the steel drum cluster, I will collect data in the form of participant observations, interviews, video, surveys, and portfolios containing reflections by the teachers. In addition to the similarities in data that the steel drum cluster shares with the Upitis study, both studies also examine artists immersed in an enriched setting. Also, it is important to note the professional development models of this research study were created in congruence with resources that were accessible to the teachers involved.

The methodology utilized in Lind's (2007) investigation of supports and barriers to professional development in arts education is also very similar to the approach that will

be taken in collecting data from the Steel Drum Professional Development Cluster. Fifty-seven arts-educators were involved in a professional development program with six teachers providing a focus group for individual observations and interviews. Research articles are being read concurrently with the application and development of qualitative research methods, so the design of Lind's research is influential to the development of my own. In addition to individual observations and interviews, written responses to reflective prompts and video footage were collected. The results of this study mirror many of the responses of participants from the Steel Drum Professional Development Cluster: Working collaboratively, focusing on student learning, and preparing curriculum positively influenced teachers' work. Lind found that many teachers commented on the value of working with colleagues, professing that it challenged them to listen to multiple perspectives and question their own practice. An element of this study that was particularly strong was the institution of lesson study. Giving participants the chance to observe other classes proved to be the strongest influence on teachers' belief about students learning.

<u>Summary</u>

These studies are influential in the construction of the present research not only for the relevancy of the design, but also for the structure of the methodology. Lind (2007) and Upitis et al. (1999) employed methods of data collection that were triangulated, leading to trustworthy findings. Their designs will be used as models for collecting both participant responses and video data for the present study.

Effective Professional Development

The elements that must be present for professional development to be meaningful, effective, and efficient are similar across all content areas. In Penuel et al.'s (2007) study on the aspects that make professional development effective, 454 participants were engaged in an inquiry science program. The primary method of collecting data was through surveys of teachers and professional development providers, with additional data collected through a database that was part the professional development program. The researchers found that there is a significant positive relationship between teachers' perceptions about the coherence of the material in the professional development program and whether the program is implemented. The incorporation of time for curriculum planning and the presence of technical support were also both important factors in encouraging program implementation. Furthermore, teachers reported more change when there was collective participation in professional development experiences; the provision of follow-up support had a positive impact on teacher knowledge, total data reporting, and protocol use. This study is unique in that it brings to focus professional development providers' intentions in developing the design of their programs.

The results of Garet et al.'s (2001) study on effective professional development further strengthens the argument for innovations to traditional approaches of professional development. Surveys from a national probability sample of 1,027 mathematics and science teachers (part of the Eisenhower professional development program), were analyzed to show that a focus on content knowledge, opportunities for active learning, and providing coherence with other learning activities were significant positive indicators

for teachers' self-reported claims of increase in knowledge, skills, and changes in the classroom. A main influence on whether opportunities for active learning and coherence in content were possible was attributed to the time span of the professional development period. These results may be deemed slightly biased since they rely solely on teachers' self-professed results. However, the results of the study do align with the literature published on how teachers learn. The importance of coherence, a focus on content knowledge, and engagement in active learning are dominant themes among professional development literature. The active learning component of this professional development program relates to the active learning that participants will be participating in through the immersion context of the Steel Drum Professional Development Cluster.

In Hammerness et al.'s (2005) research on how teachers learn, the authors affirm that telling teachers in general ways about strategies that can be used in the classroom will not typically lead to understanding or enactment when examples and models are absent. Immersing teachers in practice and in professional communities where teachers can share their understandings is especially conducive to teacher learning (Hammerness et al, 2005). Building upon Garet et al.'s (2001) research, this study asserts the importance of an immersion context in which teachers are actively engaged in the content material of a professional development program. The steel drum cluster features such an immersion model.

Results of Ingvarson et al.'s (2005) study indicated that the most effective professional development programs included activities that allowed for teachers to share their teaching practice with colleagues in order to gain insightful feedback. This ad hoc

study included 3,250 teachers from over eighty professional development programs. The data collected were from four previous studies that utilized surveys. In addition to gaining feedback from colleagues, the researchers also found programs that: a) allocated time for teachers to test new teaching methods and receive follow-up support, b) compelled teachers to actively reflect on their current practice, c) had content that was research-based, and d) led teachers to focus on what students were going to learn and how to adjust to problems their students might encounter, were the most effective in promoting teacher efficacy. This particular study added emphasis to the role that student learning has in determining whether a professional development experience can be deemed effective. Ingvarson et al. report that the strongest influence on teachers' reported levels of change and efficacy was dependent on the impact teachers saw a new program having on student's learning. The participants of the Steel Drum Professional Development Cluster are placed in a student role allowing for a direct transfer of their learning to their students.

Summary

Penuel at al. (2007) provides unique insight into the construction of a professional development program, and in combination with Garet et al. (2001), pronounces the importance of coherence between a professional development setting and what teachers may encounter in a classroom. Coherence in professional development content material with teachers' prior experiences is an important indicator of an effective professional development experience, and will be examined in the present study. The findings of Hammerness et al. (2005) on the value of immersion will be invaluable to the current

study due to its focus on an immersion paradigm for professional development. Garet et al.'s (2001) inquiry into the importance of the emphasis of professional development on student learning and its relationship to the success of teacher learning provides a new avenue for evaluating the effectiveness of the Steel Drum Professional Development Cluster.

<center>Flow</center>

Research Literature

Research suggests that effective professional development has been associated with flow. Bakker (2005) reports that the provision of job resources such as performance feedback, support from colleagues, and coaching arrangements combined to provide a constructive balance between challenges and skills. As a result, these job resources served as predictors of flow among the 178 music teachers involved in the study. Bakker's study also showed that instances of flow among teachers are significantly related to flow experiences among students. There were 605 students from sixteen different music schools involved in the study. However, this study only required three of the eight factors of an optimum experience to be labeled as a flow experience. This study accounted for only three factors to accurately calculate a flow experience. There could easily be clear goals, immediate feedback, and an environment conducive to concentration for a flow state to be present in a professional development setting. Yet, if challenge and skill are not evenly matched frustration could still occur. Data suggesting a flow experience has occurred should be able to account for important results of an

<center>32</center>

optimal experience, such as feelings of transcendence in time, and effortlessness in involvement.

<u>Motivation</u>

Bakker (2005), in congruence with flow theory and the large body of literature on effective professional development practice, notes the importance of feedback for participants. Through his study of fifty college students at the University of Maryland, Locke (1968) offers an interesting perspective on why feedback is so important for success. He suggests that relevant feedback is necessary to improve student skills, and to provide a means to measure how successful an individual is in completing a task. Locke contends that it is not the feedback that directly governs an individual's performance, but rather the goals that they set individually in response to, and in addition to the new information they have just learned. Students' goals may be set by an external source, such as an instructor of a professional development setting, yet the unique goals that are set by each individual in response to feedback propels them toward improvement. For this reason feedback has an important role in maintaining and inspiring motivation, and thus flow. The work of Maehr et al. (2002) supports these findings, purporting that "flow will suffer when students have few opportunities to structure their environments in way that might maximize flow, such as by establishing challenging goals and mastering difficult tasks that builds beliefs in their capabilities" (Maehr et al., 2002, p. 363). Following Locke's assertions, immediate feedback needs to supplement challenging goals for maximum success on a professional development setting.

<u>Determining Flow States</u>

Bloom and Skutnick-Henley (2005) report that experience and proficiency levels had no bearing as predictors of flow for ninety adult classical musicians, which supports Csikszentmihalyi's claims that despite skill levels, as long as appropriate challenges are provided, flow states can be attained. Bloom and Skutnick-Henley (2005) also concluded that flow experiences tended to occur more often in small ensemble settings than when playing alone. Considering the importance that the research literature attributes to professional learning communities within a professional development setting, this finding may prove to be very important in analyzing the group dynamic and ensemble setting of the steel drum cluster. Yet, this study also only requires five elements to be considered a flow experience. Throughout my inquiry into the research on flow, most studies left out certain aspects of the flow experience.

<u>Discussion</u>

The presence of flow indicators may greatly increase the success rate of learning environments, but it is unlikely that the presence of three conditions of flow alone can result in optimum experience. Specifically, feelings of a loss of self and transcendence in time are essential to the flow experience, and without empirical data suggesting that these circumstances existed, then a true flow experience could not occur. Yet, due to the intangible nature of these two elements of flow, they tend to be left out of studies. In part, the difficulty in determining whether another person is in an altered state of mind is that one must depend on their recollections of an event. These responses may often be biased,

and skew research results. In the present study, all indicators of flow will be investigated for their presence within the Steel Drum Professional Development Cluster.

Custodero's (1999) solution to this dilemma was to construct a research-based observation form that would be able to identify indicators of flow. This form, the Flow Indicators in Musical Activities Form, is instrumental in the present research as avenues are sought to triangulate and corroborate participant reflections.

<center>Development of Research Instrument</center>

A framework for observing participants and determining whether or not they enter into a flow state, is necessary for the present research. The following studies pertain to a systematic method of observing an optimal experience

Custodero (1999) developed a coding scheme, the Flow Indicators in Musical Activities Form, based on Csikszentmihalyi's Experience Sampling Form (Csikszentmihalyi, 1991), which she used to analyze video data of young children participating in early childhood music. Instructions on the form indicated that the researcher should:

1. Randomly select a child or group of children whose affect and body movements are clearly visible.

2. Remain focused on same subject(s) until musical event has ended.

3. Choose another subject for the next event.

Data were collected by a video operator and analyzed at a later date by Custodero. This method of videotaping will be taken into consideration when creating guidelines for observing the participants of the steel drum cluster. It is important to have a clear view of

a participants' affect, and videotaping should continue until after the activity has ended so as to capture participants' reactions to an event. The random selection aspect of Custodero's videotape methodology denies the opportunity for the researcher to use his knowledge of the elements of flow in order to make educated decisions on what circumstances are more likely to result in a flow experience. Research that evaluates participants over time may also reveal more elements of flow. Therefore, the present study will take place over a one-week, intensive professional development experience.

Custodero's research (1999) is also centered on children. Her paper concerning the musical constructions of children focused on one particular class of eleven beginning music students ranging from 4.5-5.9 years of age. In another Custodero (2005) study regarding the observable indicators of flow, she collected video data from six music sessions (30-45 minutes in length), with infant and toddler groups ranging from seven months to six years in age. Csikszentmihalyi's claim that children tend to be in constant states of flow offers interesting implications as to the validity of this study (Csikszentmihalyi, 1991). Although Custodero provides examples of flow experiences, results are not generalizable to learners of all ages.

There are three challenge-seeking indicators that are defined by Custodero (2005) that can be applicable for the observation of adult learners:

1. Self-assignment- the purposeful activity initialed by a student rather than instructor.

2. Self-correction- the acknowledgement of errors followed by appropriate

adjustments being made autonomously in the absence of external

instruction.

3. Gesture- referring to quality of movement being focused, controlled, and free

of extraneous motion.

These examples rely on the existence of motivation that drives individuals to

overcome a challenge and complete a goal, thus attaining an optimal experience.

Custodero also provides three challenge-monitoring indicators:

1. Anticipation- verbal or physical attempts to guess or show what may come

next in an activity.

2. Expansion- altering the presented material so as to make it more challenging.

3. Extension- continuing to engage with presented material after the assigned

time for an activity has elapsed.

These events would indicate that a participant is either altering the challenge level

to avoid boredom or frustration, (an important aspect of achieving a flow experience), or

he has achieved a proper level of challenge versus skill and is consumed with trying to

achieve his goal, whether it be self-assigned or provided by an instructor.

These indicators of flow will be helpful when observing participants of the Steel

Drum Professional Development Cluster. Observations of participant actions can be

analyzed with these indicators to further code and break down data.

Data Analysis

Most of the qualitative research reviewed for this study used coding schemes in order to analyze data. Developing a system of codes is most effective and trustworthy when based on related research, where findings may be transferable. Custodero's (1999, 2002) coding schemes for the video data in her study were based on Csikszentmihalyi's Experience Sampling Form (ESF)(1991). Shernoff, Csikszentmihalyi, Schneider, and Shernoff's (2003) study on student engagement in high school classrooms also used coding for analysis on an ESF created to measure levels of engagement, attention, quality of experience, challenge, and relevance. All of these characteristics can be construed as having an impact on creating an environment conducive to flow.

Discussion

Upitis et al. (1999) and Lind (2007) provided a solid framework on which to base the structure of the present study. Their methods of data collection were research-based, and were highly efficient in obtaining the necessary data for their research to be effective. In addition, the research on effective professional development that was fulfilled by Penuel (2007), Ingvarson et al. (2005), Garet et al. (2001), and Hammerness et al. (2005) provides insight into which qualities are inherent in an effective professional development experience. These qualities will be compared with the learning environment that is created through the utilization of steel pan to determine whether it is effective to use steel pan as a tool for professional development.

The research concerning flow, particularly Custodero's (1999) research concerning the observable indicators of flow, has provided a clear conception for how to analyze data once it has been collected. Some researchers studying flow did not account for participants' feelings of transcendence in time, or loss of concern for the self (Byrne, 2002; Jackson and Marsh, 1996). Jackson and Marsh (1996) attempted to develop a scale to measure optimal experience, and did not use the indicators of transformation of time and loss of self as prevalent links to flow states. Byrne's (2002) study on flow within a classroom began with a hypothesis that when at least three of the conditions of flow were present in a learning environment would a situation for high levels of optimum experience would occur. Byrne did find that it was possible to achieve high quality creative output in musical composition and that a directly related flow state can occur. Yet, without stressing the importance of having a sense of transformation in time and loss of self, and only requiring three of the conditions for flow to be present, I am not sure how reliable the conclusions can be. Transformation of time and a loss of self are two important outcomes of the flow experience that will be included in the present research study. In order for findings to be trustworthy in the present study, the data must be triangulated with support from participant reflections, video data, interviews, and survey questions. Then I can progress toward conclusions as whether or not participants experience flow in an immersion-based professional development program.

Chapter 3

METHODOLOGY

This research study provides an opportunity to discover what elements are inherent to the qualities of effective professional development. There has been an overwhelming call for research pertaining to the value of immersion paradigms within professional development, long-term professional development, the creation of professional communities, and professional development partnerships (Burton & Greher, 2007; Conway, 2007; Hookey, 2002; Penuel Fishman, Yamaguchi, & Gallagher, 2007). As an aspiring music educator and percussionist, I was particularly interested in a professional development experience that centered on the playing of steel drums. The Steel Drum Professional Development Cluster is sponsored by a grant from the Delaware Department of Education, and is administered in coordination with the University of Delaware Department of Music. I am examining this professional development cluster primarily to provide insight into the effective qualities of its immersion paradigm. The theoretical perspective that Mihaly Csikszentmihalyi's research into flow provides will afford the possibility of offering a novel approach to constructing an effective professional development program.

<u>Research Purpose and Questions</u>

The purpose of this research is to investigate elements that contribute to effective, sustained professional development for music teachers. Specifically, this study is an examination of the efficacy of a Department of Education sponsored, 90 clock-hour, immersion-based, professional development cluster on steel pan through the unique lens of flow theory (Csikszentmihalyi, 1991). Using the principles of Csikszentmihalyi's research on flow as an analytical framework, the efficacy of using steel pans as a means for professional development for teachers is evaluated. Also investigated is whether music educators experience flow during an intensive 90-clock hour professional development cluster. The examination of these questions provide further insight into whether elements of flow theory can be observed in an immersion context, and whether the immersion paradigm of professional development contributes to providing an effective professional development experience.

<u>Rationale for the Design</u>

Csikszentmihalyi's (1991) research on flow theory and optimal experiences are the strongest theoretical influences on my study. His research on flow was essential in establishing my own theoretical basis for evaluating subsequent research regarding the characteristics of effective professional development, and was a significant factor in developing a context in which to assess my own observations, and develop my method for analysis. I read about Langer's (1990) concept of mindfulness after reading *Flow* (Csikszentmihalyi, 1991) as a way of countering some of the truths professed by Csikszentmihalyi. Through an extensive literature search, I was not able to find many

sources debunking or challenging Csikszentmihalyi's work; upon reading *Mindfulness* (Langer, 1990), I felt that I had found another concept that, while not directly countering the claims of Csikszentmihalyi, provided interesting perspectives in contrast to those of flow theory. While both Csikszentmihalyi and Langer recognize the individual's ability to enter into a state of engagement that results in feelings of effortlessness, they provide differing reasons for why the phenomenon occurs. Langer (1990) attributes feelings of effortlessness as being possible when distinctions in process are being made, and participants are actively engaged. Csikszentmihalyi attributes feelings of effortlessness to the order in consciousness that is attained when skills match opportunities for action, and incoming information is congruent with one's goals (Csikszentmihalyi, 1991).

I consulted numerous authorities on the topics of qualitative and quantitative research throughout the research process in order to develop my study properly. Falk, Blumenreich, (2005), and Phillips (2008) were influential in designing my research protocol. Phillips' book provided me with an educated, trained eye for analyzing and interpreting the qualitative studies that I read on effective professional development, in turn presenting a model for presenting my own research. Falk and Blumernreich's book honed my qualitative research skills by providing a new perspective on how to create appropriate research questions and protocol for the interviews that I conducted, helping to shape the questions that I was developing for the study. In addition, numerous other research articles that were written on effective qualitative and quantitative research techniques (Asmus & Zdzinski, 2002; Flinders & Richardson, 2002; Heller & O'Connor,

2002), provided guidance for framing my research questions and strategies in a valid manner.

David Elliott's *Philosophical Perspectives on Research* (Elliott, 2002) formally introduced me to the interpretive approach of research, provided a philosophical lens for my research, and brought into focus the subjective, collaborative, and potentially biased nature of my research. While it may be the goal of interpretive inquiry to determine the values, motivations, and attitudes of individuals in a given circumstance, Elliott highlights the inherent judgmental nature of gathering empirical evidence. Consequently, I realized the importance of triangulation and validity to the design of my study. Elliott's description of the postpositivism view on research serves as a necessary caution, " . . .there are an infinite amount of truths that can be discerned from any given situation" (Elliot, 2002, p 91).

<div align="center">Design</div>

Context of the Study

The Delaware Department of Education's Steel Drum Professional Development Cluster was created in 2004. There are three full time instructors, each having unique background experiences running public school and college steel drum programs, and having involvement with the construction of steel drums. During the weeklong immersion cluster, participants live together and eat meals together, while participating in a full day of workshop sessions. Days are split into sessions for practice, rehearsal, cultural sessions involving videos and guest speakers, and discussions on funding, curriculum, and other logistical matters (see Appendix F).

<u>Population</u>

Data were supplied by participants from 2004-2007 (See Figure 3). Participants included teachers of all experience levels, with concentrations in general music, and instrumental and choral music at the elementary, middle, and high school level. There were thirty-eight participants from Delaware, Pennsylvania, and Ohio, from both public and private institutions. It is possible that there could have been a greater number if participants from the cluster answered the anonymous survey that did not hand in a portfolio. I received permission from the University of Delaware Associate Provost for Research and the Human Subjects Review Board to conduct this research (see Appendix A).

<center>Researcher-Participant</center>

<u>Background</u>

As an undergraduate music education major with a concentration in percussion, I had been exposed to the steel drums through my studio professor, who conducts a steel band program on campus, and is the lead clinician in the steel drum professional development cluster. Additionally, my advisor in the undergraduate research program is one of the original authors of the proposal for the State of Delaware sponsored professional development cluster.

<u>Bias</u>

      While this may provide grounds for some initial bias, a great advantage to knowing these professors was my access to the data that had been collected through the cluster, and my immediate proximity to instructors of the cluster. Serving as a researcher-participant in this study also gave me the advantage of witnessing and observing what teachers were reflecting on in their journals firsthand, thus providing me with a unique perspective on the data. In Heller's (2002) book on maintaining quality in research, the researcher is referred to as the prosecution, the defense, and the preliminary judge. This is precisely the position that I found myself: in the midst of the Steel Drum Professional Development Cluster I was able to participate, observe, interview, and videotape, all the while critiquing the process that I took to collect data. A research–based framework for observation had previously been provided with the oversight of my advisor, and any changes in my methodology that I sought were done so because of the proximity that I had with particular situations. For example, the participants that were targeted through the videotaping were often selected due to their exhibition of traits that I considered to be more conducive to the possibility of a flow experience. The advantage to observing live events was that I was able to react according to the context of any given circumstance, capturing events that were related to the research questions of my study. One could make a case that a biased researcher could have focused solely on the events occurring which reinforced his hypothesis. However, through the triangulation of multiple data collection methods and sources, and continued communication my thesis advisor, appropriate measures were taken to avoid any pitfalls that bias might account for. A more concerning

possibility would have been if a person was put into the field who did not have the research background to be able to identify relevant situations, leading to the person missing critical components of the research in context.

<u>Data Collection Methods</u>

Multiple methods of data collection were employed throughout the research process. Data were collected in the form of journals, field observations, one-on-one interviews, a survey, and video recordings of the cluster. Interviews, observations, and videotaping occurred in their natural settings so as to capture the experiences of the participants *in situ*. Using multiple method of data collection provides triangulation, to lessen any possibility of bias. Qualitative data were gathered through reflective journals that participants kept during their professional development experience. There were 137 journal entries from twenty-seven participants. These reflections were gathered and placed into a portfolio that participants handed in at the end of the year as part of their professional development requirements, and provided a detailed account of what the participants thought and felt as they were experiencing the weeklong immersion experience. I also conducted individual interviews with participants and instructors from the 2007 and 2004 cluster to further illuminate participants' experiences and to triangulate reflection data. Close to thirteen hours of video data were recorded, documenting the participants from the 2007 cluster in action during their immersion experience. The data were further supported by field observations of three selected teachers utilizing steel pan in their music classrooms after completion of the immersion phase. Qualitative and quantitative data were gathered by means of a survey that was

distributed electronically on the Internet to participants from every year of the cluster's existence. On-site observations of schoolteachers and the on-line survey were more helpful in determining the efficacy of using steel pans as a means for professional development than they were for gauging whether or not these teachers engaged in a flow experience during their immersion into pan.

Portfolios

Portfolios were used to capture the teachers' perceptions of the immersion experience as well as document their implementation of what they learned with their students. They also served as a means of grading participants on their participation in the cluster, and contained valuable information that could be used to evaluate the effectiveness of certain sessions provided during the immersion week. The Steel Drum Daily Reflection Guide (see Appendix C) prompted teachers to respond to the demonstrations and discussions of the day, the culture from which the steel drum practice emerged, teachers' personal and professional growth, and the immersion model for professional development. These portfolios were collected at the end of the academic year following the teachers' professional development experience.

Observations

Observations were important in offering another means of data that could be used to balance the teachers' statements. Observing teachers during the weeklong cluster, as well as while they taught in their own classrooms provided another means of triangulating the data. Field observation techniques used while observing teachers

utilizing pan in their classrooms were influenced by my working definition of flow (see Appendix E), as well as Custodero's (1998, 1999, 2002, 2005) research. Specifically, the article *Observable Indicators of Flow Experience*, (Custodero, 1998) in which she provides a chart that depicts observable examples of the flow experience.

Videotaping

I discussed videotaping style beforehand with my undergraduate advisor to determine how to best capture instances where individuals may be exhibiting characteristics of a flow experience. After reading a Custodero (1999) study that utilized videotaping as a primary means of data collection for identifying flow experiences, we decided that it would be best to tape in a stationary position that allowed me to see all of the gestures of a participant clearly throughout an entire musical event. However, at times when a particular event arose that was relevant to those elements of the flow experience, the camera was moved to capture them.

Web-based Survey

The web-based survey (See Figure 2) was created to determine what elements of the professional development experience were most effective in providing long-term change in the pedagogical practice of the teachers involved. Before implementing the survey, a talk-aloud pilot survey was conducted with four persons who were not participants of the study. I was present at the time that these participants took the survey so that they could explain any ambiguities or confusion they were having with the survey questions. As a result, the instrument was modified to be as clear and concise as possible.

As soon as participants completed the actual survey results were sent directly to my e-mail account. A survey was e-mailed to all persons who had attended the steel drum cluster since its inaugural year, 2004. Fifteen questions were asked involving a multiple choice answer selection resembling that of a 4-point Likert scale of always, often, sometimes, and never, which was influenced by related research (Custodero, 1999, Jackson & Marsh, 1996). Space was provided for teachers to embellish upon these answers in written word if they felt inclined. There were also seven open-ended questions which participants wrote short responses to.

Interviews

Semi-structured interviews were conducted with individual participants and contained carefully constructed questions (see Abstract D) based upon the literature on effective professional development practice, flow theory, mindfulness, and the value of immersion. The development of questions was influenced by my working definition of flow[2]; both the questions for the interview and the working definition of flow were discussed with my advisor. Ideas about how to pose questions were taken from Csikszentmihalyi's (1996) questionnaire used in his study of creativity, Falk &

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[2] A state of optimal experience in which consciousness is ordered through the ability to purposefully focus attention. This experience is so enjoyable that people are willing overcome great barriers for no other reason than achieving it. Activities that set clear goals, provide immediate feedback, offer surmountable challenges, and offer a sense of control over one's actions help to facilitate such experiences. One who engages in the flow experience characterizes the duration of time as being altered. He loses concern for himself, yet emerges with a more complex, stronger sense of self. The flow state can be said to be mindful in that in both a flow experience and a state of mindfulness, we do not have a sense of ourselves as being separate from the task we are engaged in, and our involvement is seemingly effortless.

Blumenreich's (2005) qualitative research book, and insight from psychologist Dr. John

Bersh (personal communication, June 2007). After the questions underwent multiple

stages of development, interviews were given to participants on a voluntary basis, in the

latter part of the immersion week.

<div align="center">Data Analysis</div>

Theoretical Lens

A framework for analysis needs to be asserted for before data is reviewed. The

symbolic interactionist and interpretivist lens are important to this research due to the

immersion paradigm of professional development (Joniak, 2002). The participants'

meaning and knowledge were socially constructed, and evolved through the interactions

they had with each other. As a qualitative researcher, participants will be studied in their

natural settings. Additionally, through my research I will be interpreting the meanings

that the participants constructed.

Data Analysis Procedure

All of the qualitative data will be collected and entered into qualitative research

program HyperRESEARCH (Researchware, 2007), a data analysis software package that

allows for the manipulation of multimedia sources. This program will make coding and

comparing data much more accessible, and also has a function through

HyperTRANSCRIBE (Researchware, 2007), that allows for ease in transcribing video

and audio files from interviews. Journal reflections, recorded interviews, field

observations, and survey responses will be transcribed into text files and entered into the

program. HyperRESEARCH also allows for the coding of video recordings of the professional development cluster in order to further triangulate data. Data will be collected and coded at the same time through the constant comparison method.

Initially, the original coding was based on the reflection guide which participants received for their daily journal entries (see Appendix C). However, upon further analysis of the data, I decided that the questions provided in the reflection guide were too broad, and not as relevant to the research questions. Codes are being changed to reflect Csikszentmihalyi's elements of flow. In addition, codes will be added to account for the concept of mindfulness (Langer, 1990), the idea of anti-flow: conditions that would negate an optimal experience (Csikszentmihalyi, 1991), and other trends that emerged from the data. In total, there are seventeen codes with which the data will be analyzed. Specific codes are: access, anti-flow, chance of completion, clear goals, concentration, curriculum coherence, enjoyment, feelings of effortlessness, funding, immediate feedback, motivation, multiple perspectives, pedagogy, growth of self, sense of time, and positive and negative support. Indications will be made as to whether the coded material is observed by the researcher or self-reported by participants through journals, surveys, or interviews. Data will also be examined for deviant or negative cases, and for silences where no data is present for the expected phenomenon.

Confirmability

Two auditors will independently check the codes for consistency in the analysis. As I analyze the data, I detailed annotations will be kept in HyperRESEARCH explaining why each code is relevant to the content it represents. A report will be made of these

annotations, and re-entered into HyperRESEARCH to be coded further. From this analysis, the constant comparison method will be used to group data into categories and finally, themes.

Verification of Interpretation

The research process has been documented carefully from its start. For trustworthiness, methods and sources of data collection are being triangulated. Having access to video footage of the 2007 cluster participants affords me the opportunity to further triangulate my data. In some circumstances, I will able to pinpoint particular experiences that a teacher reflects on in his journal as relating to flow, and then based on the information in the journal entry, (such as the piece being played on the pans on the day of the reflection) I can identify those experiences in the video. I will also be able to observe the participant from a detached perspective to interpret what the teacher was expressing in his journal entry. Triangulation of analysis can also be achieved by approaching the data through HyperRESEARCH and comparing separate data sources using my understanding of effective professional development practice and flow theory. In addition, two external auditors are going to be employed to verify the integrity of the coding and categorizing of data. Taking into account that this case is highly specific, being that I have found no other steel drum professional development clusters in existence, the conclusions of this study will not be generalizable. However, the findings of this study, or aspects thereof may be transferable to other similar professional development settings.

Chapter 4

DATA ANALYSIS

This research study provides a unique perspective into the elements that are inherent to effective professional development. It examines one specific professional development program within an immersion context, through the lens of flow theory. The research questions investigated in this study are:

1. What is the efficacy of using steel pans as a means for professional development for teachers?

2. Do music educators experience flow during an intensive 90-clock hour professional development cluster?

Participants included teachers of all experience levels from private and public education institutions with concentrations in general, instrumental, and choral music at the elementary, middle, and high school levels. As a researcher-participant in the Steel Drum Professional Development Cluster, I was able to extend my investigative role to meet the particular requirements of the study. A research-based framework for data collection, and the triangulation of data methods, sources, and analysis minimized the possibility for researcher bias. Finally, the theoretical lens provided by Mihaly Csikszentmihalyi's research on *flow* offers a novel perspective to study those elements of

a professional development experience that might facilitate success in promoting teacher change in practice.

Data Collection

To address the research questions of my study, I chose several data collection methods that would provide multiple perspectives on the participants' experiences in the steel pan professional development cluster. The primary data source was journal reflections from the immersion week (N=27 participants; 8 male, 19 female). I conducted field observations in the fall of 2007 on two elementary school teachers and a high school teacher implementing what they had learned in the cluster with their students (1 male, 2 female). One-on-one interviews were held with six participants from the 2007 cluster (2 male, 4 female), one participant from the 2004 cluster (male—who also participated in the field observations), and two instructors (2 male) of the cluster. Thirty-seven participants from the years 2004-2007 were e-mailed an electronic survey; twenty-five responded, yielding a 66% return rate. These teachers all taught in Delaware with the exception of one teacher from Pennsylvania. Due to the confidential nature of the survey, it is impossible to determine the ratio of male to female teachers who responded. I also collected videotape data of 14 participants (4 male, 10 female) during the 2007 professional development cluster (see Table 1).

Table 1.Table of Participants and Data Sources.

Data Source	Number of Participants	Male/Female
Journal Reflections	27	8/19
Online Survey	25	N/A
Interviews	9	5/4
Field Observations	3	½

Reflective Journals

Qualitative data were gathered through reflective journals that participants kept during their professional development experience. These reflections served as a primary data source, with each teacher gathering them and placing them into a portfolio. Twenty-seven participants submitted these portfolios at the end of the year as part of their professional development requirements. Information from the 135 journal entries provided a detailed account of what the participants thought and felt as they were experiencing the weeklong immersion experience. They offered valuable insight for the investigation of both research questions. The prompting questions that participants answered in their journals during the immersion week were meant to inspire meaningful reflection, and were aimed at gathering information that would help instructors to determine which activities and instructional techniques were proving to be most effective (see Appendix C). Participants were also encouraged to write freely about their experiences in the immersion experience.

<u>Interviews</u>

I conducted semi-structured, individual interviews with seven participants and two instructors from the 2004 (1 male) and 2007 (4 male, 4 female) cluster. This data served as a secondary source to further illuminate participants' experiences and to triangulate reflection data. Interview questions (see Appendix D) were constructed in light of the research questions. Interviews were recorded and transcribed, usually lasting around ten minutes in duration.

<u>Video Recordings</u>

As a researcher-participant, I recorded video data documenting the participants in action from the 2007 cluster. During the immersion experience, participants stayed in rooms on campus, ate meals together, and practiced together. Approximately thirteen hours of video data were recorded of participants involved in the rehearsal and practice setting of the immersion cluster between the hours of nine A.M. and nine P.M. In consultation with the research literature on flow, I developed a list of observable indicators of flow to guide my observations (see Appendix E). The list was based in part on Custodero's (1998) observable indicators of flow.

<u>Field Observations</u>

The data were further supported by field observations of three selected teachers utilizing steel pan in their music classrooms after completion of the immersion phase. Teachers were chosen based on the availability in my schedule to be able to travel to different schools. I observed full class periods/rehearsal periods, seven times on seven

separate days. I observed an elementary teacher utilizing steel pan as a before-school

program from the 2004 cluster, and two participants from the 2007 cluster. One teacher

from a performing arts school used steel pans with her choir students, and the other

created an after school program for interested elementary school students. Observable

indicators of flow (see Appendix E) guided my observations and gave structure to my

field notes, as I paid particular attention to students' reactions toward their performance.

Electronic Survey

To gather data on whether the Steel Drum Professional Development Cluster was

promoting long-term change in teacher practice, I created an electronic survey that was

distributed on the Internet to participants from each year of the cluster's existence (see

Appendix B). Prior to sending the survey to cluster participants, I piloted the survey

through a talk-aloud procedure to ensure content and construct validity. After making the

appropriate revisions, the survey was distributed to thirty-seven participants. Twenty-five

participants completed the survey, yielding a 66% return rate. On-site observations of

schoolteachers and the electronic survey were used in relationship to the question on the

efficacy of using steel pans as a means for professional development.

Data Preparation

In order to accurately answer my research questions, I coded the data to reflect

elements of flow and effective professional development practice. Initially, the only data

I had were participant journal entries from 2005-2006. After my role as a researcher-

participant in the summer of 2007, I was able to attain additional secondary sources in the

form of interviews and video data. The following fall I supplemented the data with the

field observation of teachers implementing pan in their curriculum, and with the internet-

based survey. Originally, only the elements and indicators of flow were being used to

code data, but as themes arose that were consistent with the principles of effective

professional development, they were added to the list of codes. Data were being collected

and coded simultaneously using the constant comparison method. Using the constant-

comparison method allowed me to be immersed in the data, giving me a thorough

perspective of the contents of the data. As I compared data sources, emergent trends

emerged in the data.

Triangulation of data analysis was achieved by approaching the data through

HyperRESEARCH (Research Ware, 2007) and the process of comparing and coding

separate data sources. In addition, two external auditors verified the integrity of the

coding and categorizing of data. After finding instances in one data source that could be

construed as a possible flow experience, I was able to check with other data sources,

(journal entry, video data, interview, etc.) to support or refute my original assertion.

Data Analysis

All data were transcribed into text or video files to be analyzed through the

qualitative research program HyperRESEARCH. This qualitative research program

allows easy coding and categorizing of text and video files. Multiple sources of data can

be compared and analyzed simultaneously using the same code set. After I skimmed

through the data to get a grasp of the content, journal entries, field observations, and

survey responses were converted into text files to be analyzed with greater specificity in

HyperRESEARCH. Using HyperTRANSCRIBE (Research Ware, 2007), I transcribed recorded interviews verbatim, and then imported the transcriptions into HyperRESEARCH as one text file. HyperTRANSCRIBE allowed for me to easily stop, start, and isolate audio files in order to expedite the transcription process. HyperRESEARCH allowed for video files to be opened within the program. Segments of video from the cluster could be highlighted, and were then coded in the same fashion as highlighting a text file. Analyzing all data sources in the same program with the same codes allowed for ease in triangulating data sources. The codes used to analyze the data reflect Csikszentmihalyi's elements of flow, with additional codes accounting for my research into effective professional development (see Table 2) (see Table 3). Csikszentmihalyi's elements of flow are not the same as Custodero's observable indicators of flow. Both researchers' body of work were used in guiding my field observations, but all data were originally coded using Csikszentmihalyi's indicators of flow. I used the constant comparison method of data analysis, comparing the data within and across data sources. This process yielded new codes as new themes arose from the data. I would then re-examine all data sources with the additional codes in mind. As a result, the codes were adapted over time as trends and themes emerged from the data.

As I coded the data, I made annotations that provided further insight into the characteristics of those elements of flow that created a positive atmosphere conducive to teacher learning and pedagogical change (see Table 2). Once I had exhausted all the possibilities for breaking down codes into smaller more specific subcategories through my annotations, I concluded that the analysis phase had reached saturation.

Trustworthiness was established by the triangulation of data collection methods and sources, and contributes to the sound nature of the research. Two external auditors were employed to verify the integrity of the codes and analysis. Analyzing the data at this micro level allowed for me to see specific relationships in regard to the research questions.

Results

The results of this study are the end product of focused, deliberate, coding and comparing of all of the data. In the following paragraphs, each research question will be addressed by presenting indicators of flow and attributes of effective professional development that arose through data analysis. Supporting documentation will be provided for these results in the form of graphs and charts derived from data analysis. Percentages in list form offer the percentage of times that a specific code was tallied in relation to the total amount of coded responses (N=331) from participants of the cluster (see Figure 1).

Research Question 1

In determining the efficacy of using steel pan as a means for professional development, the following codes were most prevalent (see Figure 1):

1. Interest/Motivation (8.76%).

2. Enjoyment (6.04%).

3. Lack of funding (8.16%).

4. Access to drums (2.11%)

Table 2. Codes Pertaining to Elements of Flow.

Codes	# of Coded Responses	Annotation	# of Coded Responses
Chance of Completion	35	Breakdown	6
		Repetition	21
		Appropriate Challenge	8
		Sense of Control	2
Clear Goals	19	Modeling	9
		Structure	1
		Guided Practice	9
Immediate Feedback	50	Positive Reinforcement	8
		Ongoing Resources	7
		Personal Reflection	4
		Connection With Others -Networking -Sense of Community	26 (2) (5)
		Immediate Success	6
		Sharing	7
Sense of Self	4	Personal Growth	2
Sense of Concentration	20	Structure	14
		Engaging	12
		Immersion	11
Transcendence in Time	8		
Sense of Effortlessness	4		
Interest/Motivation	29	Engaging	12
		Excitement	1
		Immediate Success	6
		Attainable Goals	1
		Transference to Students	2
		Expansion	1
		Extension	9
		Self-Assignment	9
		Intrinsic	2
Enjoyment	20		
Anti-Flow	22	Fear	4
		Frustration -Lack of Challenge	7 (1)
		Lack of Structure	4
		Challenge Overwhelming -Confusion -Rushed	10 (2) (3)

Table 3. Codes Pertaining to Features of Professional Development.

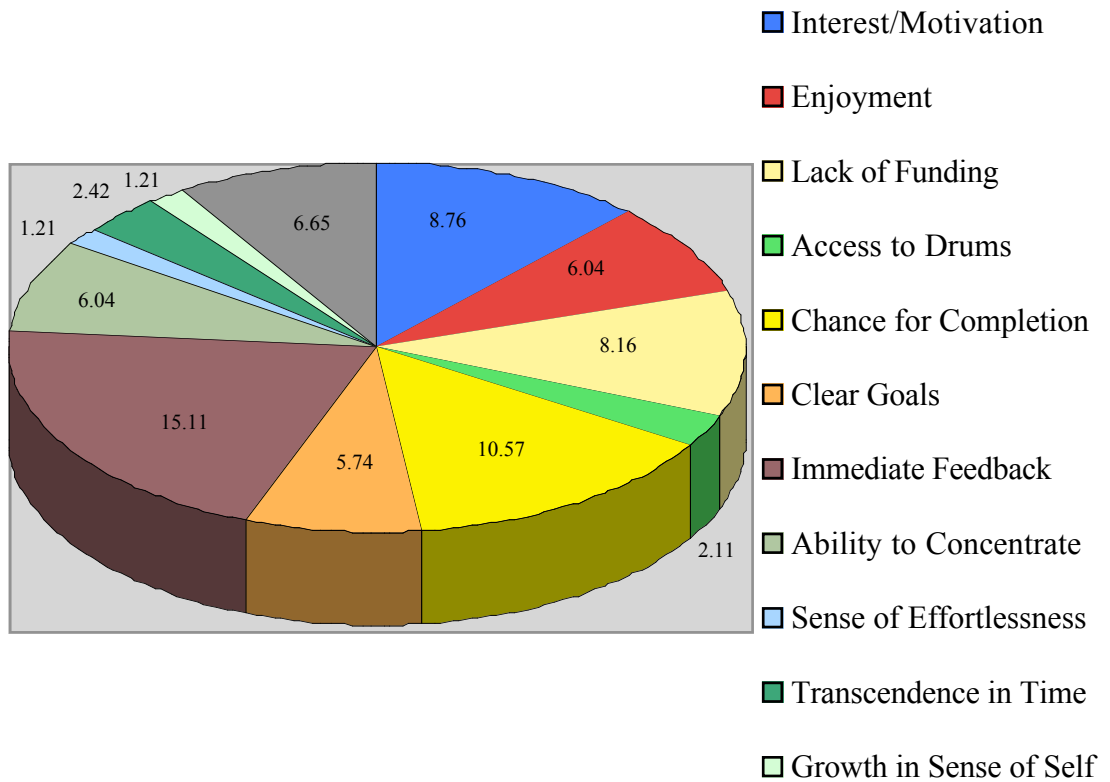| Codes	# of Coded Responses
Multiple Perspectives	35
Access/Availability of Drums	7
Curricular Coherence	13
Lack of Funding	27
Positive Support	4
Negative/Lack of Support	10
Pedagogy	24

Figure 1. Percentage of Codes Among Participant Data.

The prevailing feature of motivation and interest was whether or not the participants were feeling fully engaged in the material (see Figure 2). Over forty-one percent (41.37%) of the 8.76% of responses coded for motivation projected the characteristic of engagement. In her journal, Mary wrote, "I never want to break because I'm so engaged [and] very inspired by the clinicians" (54983,55061). Cindy stated in her journal that, "This type of event gets teachers excited about learning, and will be reflected in their students" (72146,72250). These quotes embody the excitement that overcomes teachers when they are learning about the steel drums, and express the engagement that they feel while in the immersion cluster. Twenty percent (20.69%) of the Interest/Motivation responses were related to participants having a sense of immediate success with the steel pan. Teachers, much like their students, were looking for success to grasp on to and propel them forward with confidence. Around thirty-one percent (31.03%) of the responses coded for motivation were characterized by either participant's self-assignment or extension of material. Self-assignment refers to when participants create their own learning circumstances, and extension refers to when participants engage in presented material after the assigned time for learning the material had ended. As demonstrated in the video documentation, in one session, participants went to find straws so that they could practice quietly while still in a rehearsal setting (00:51:30.737). This is a prime example of teachers exhibiting self-assignment and extension.
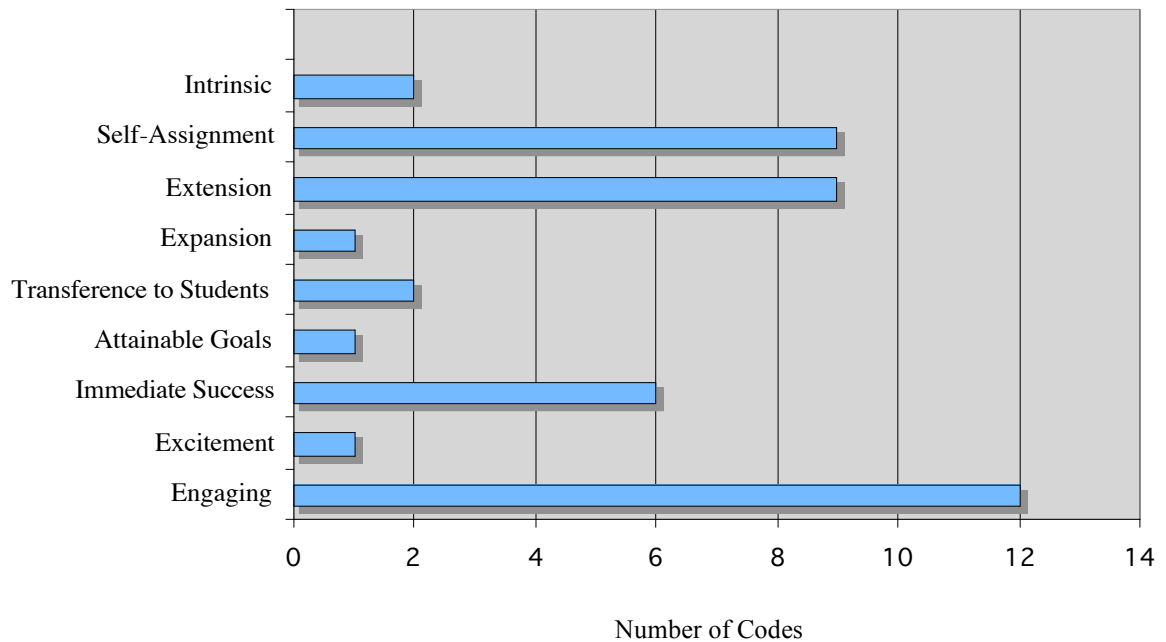
Figure 2. Interest/Motivation.

Enjoyment was another theme that was prevalent in the data, and can be attributed to the playing of the steel pans. Amy reflected in her journal, "Judy and I played the leads tonight and caught on very quickly! Success! It felt fun! Our self-esteem was lifted immeasurably tonight" (57055,57190). The success that participants felt while immersing themselves into the steel drum cluster resulted in enjoyment.

However, there were concerns among the participants about: a) their access to steel drums within their school districts, and b) the lack of funding they felt they would encounter when trying to purchase the drums. These are two themes that provide an alternate perspective on the role of the steel pans within professional development experience, as can be seen in the following quote from the anonymous Internet survey. "It's really hard to use them if you no longer have access to the pans. I have to say

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though, my students that I had as 6th graders (now 8th graders) who participated in the experience, are more open to new musical experiences [sic.] and are willing to do more for me now that when I had them two years ago" (4144,4216).

<u>Research Question 2</u>

To determine whether participants experienced flow during the intensive 90-clock hour professional development experience, a discussion of the primary trends, which reflect the indicators of flow is necessary. Again, percentages in list form offer the percentage of times that a specific code was tallied in relation to the total amount of coded responses (N=331) from participants of the cluster (see Figure 1). The relevant themes for this research question are:

1. Immediate Feedback (15.11%)

2. Chance of Completion (10.57%)

3. Ability to Concentrate (6.04%)

4. Clear Goals (5.74%)

5. Transcendence in Time (2.42%)

6. Sense of Effortlessness (1.21%)

7. Growth in Sense of Self (1.21%)

8. Anti-flow (6.65%)

Immediate feedback was demonstrated most strongly through the connection that participants had with each other (52%) (see Figure 3).
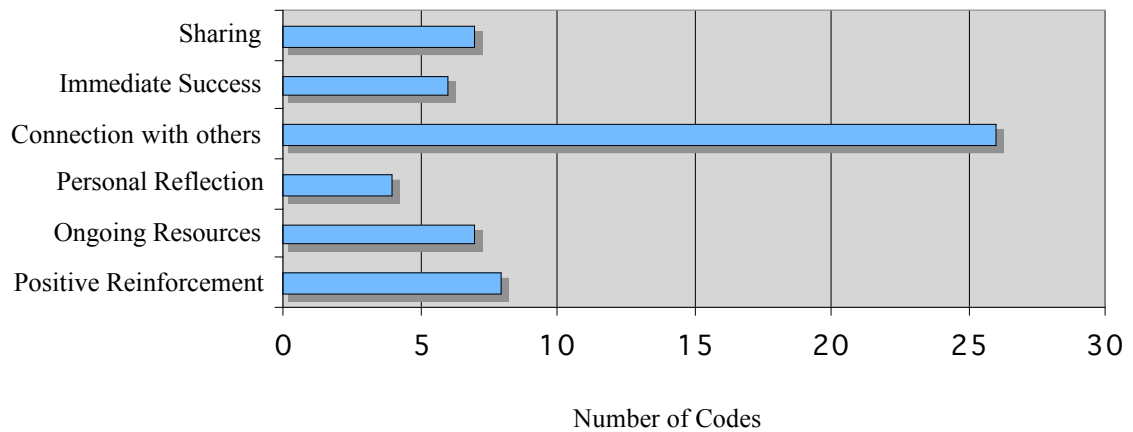
Figure 3. Immediate Feedback.

Ninety-six percent (96%) of participants indicated that they felt a sense of collegiality and camaraderie with other participants during the steel drum cluster (see Table 4). Rodney reflected in a journal entry that, "The camaraderie of working so closely together has bonded our group in a positive way. We are able to help, encourage, and laugh together which is very important to the quality of music that we are playing and our own self esteem" (65318,65549). In addition, immediate feedback was also given through the instructors' provision of positive feedback (16%) and ongoing resources (14%). In another entry, Rodney expressed, "It is [the instructors'] patience and understanding that is giving me the "boost" to continue each day and not give up" (31912,32041). Forty-five point eight three percent (45.83%) of participants indicated that the feedback received from instructors during the cluster was highly effective, and

fifty percent claimed it was effective (see table 5). No participants felt that the feedback given was ineffective. Sixty percent of participants claimed that professional support was *always* available as an ongoing resource during the cluster, and 40% indicated that it was *often* available.

Table 4. Participant Collegiality and Camaraderie.

	Number of Participants	Percentage of Participants
Yes	24	96%
No	1	4%

Table 5. Effectiveness of Instructor Feedback.

	Number of Participants	Percentage of Participants
Always	16	66.67%
Often	7	29.17%
Sometimes	1	4.17%
Never	0	0.00%

The annotations for the theme of having a chance for completion revealed that repetition was the most common characteristic providing participants with the sense of having a chance to complete tasks (see Figure 4). Sixty percent (60%) of responses coded for chance of completion had the annotation for repetition. A simple statement from

Rodney, such as "With repeated practice, I see improvement in our playing"

(11948,12005), is indicative of the importance that repetition had for participants' skill

and confidence levels in playing pan. Also substantial were the characteristics of having

an appropriate challenge (22.96%), and breakdown of material (17.14%). Rodney simply

states, "Breaking down new music into sections and rehearsing those bits was helpful"

(10146,10222).
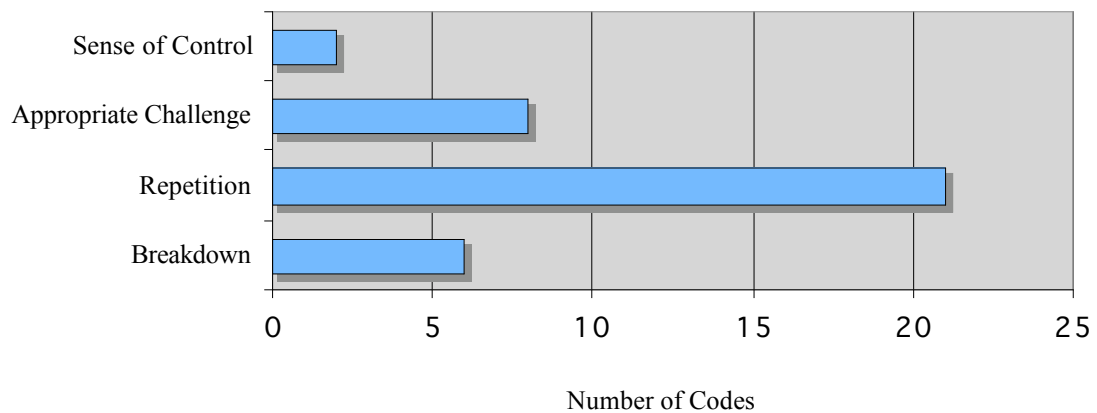
Figure 4. Chance of Completion.

Participants' ability to concentrate was facilitated by having structure to the

program (70%), engagement (60%), and immersion (55%) (see Figure 5). One participant

reflected that it is "easier to accomplish things in a set aside period of time than in the

business of the school year. Being immersed in culture and playing makes me more

comfortable with the material" (15320,15427).
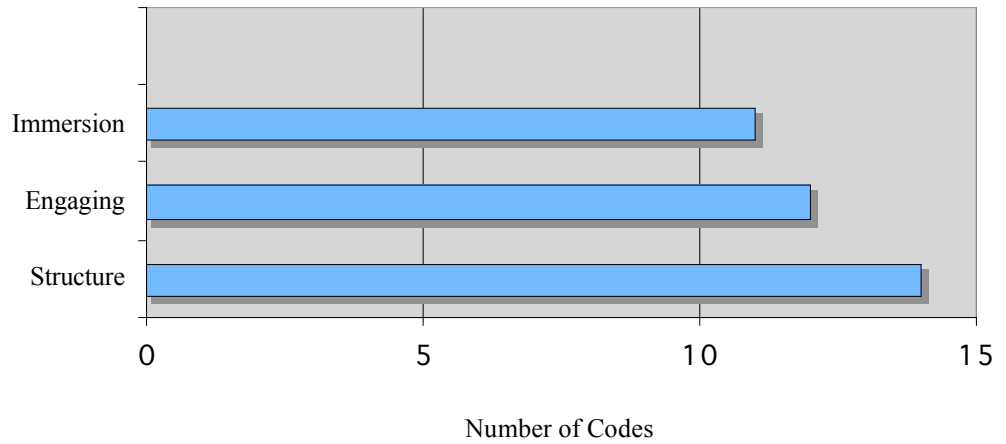
Figure 5. Sense of Concentration.

Having clear goals was characterized by having guided practice (47.37%), and modeling (43.74%) (see Figure 6). A participant related, "Continuous presentation, sequential development, and guided practice is working for me" (36137,36233). Eighty-percent (80%) of participants indicated in the Internet survey that the instructional content of the steel drum cluster was presented in a clear fashion, giving them the opportunity to achieve an acceptable skill level playing the pan (see Table 6).
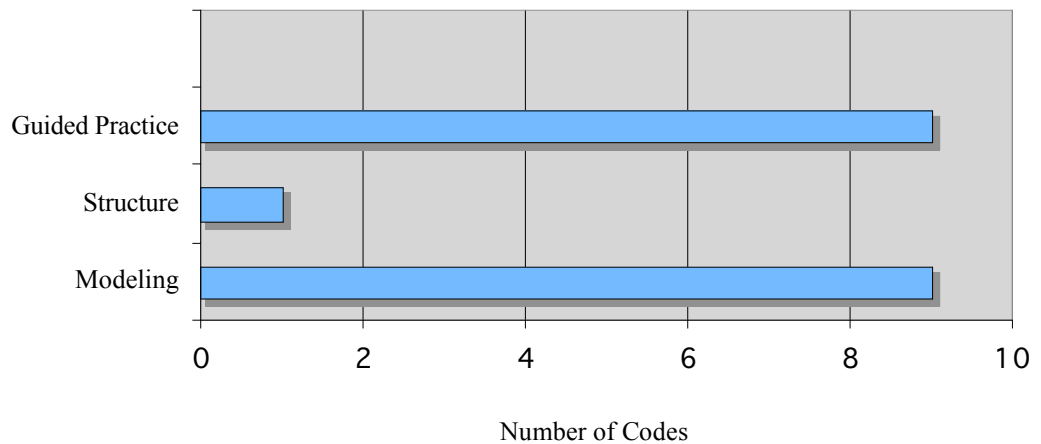
Figure 6. Clear Goals.

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Table 6. Clarity of Instructional Content.

	Number of Participants	Percentage of Participants
Always	14	58.33%
Often	6	25.00%
Sometimes	4	16.67%
Never	0	0.00%

Participants also experienced transcendence in time while participating in the

immersion cluster. Dana expresses herself through an interview:

When lunch happened, I was just like, "what do you mean it's lunch," cus we
were just like in that flow and we were just like, "Mark let's do it again, let's do it
again," cus we all were starting to get it. That was the coolest thing, because for
like an hour we just kept playing the same thing but we started getting better and
better and better. (37036,37399)

Additionally, the data showed that participants felt a sense of effortlessness in

their performance. Jack relates one such experience during an interview:

The day that we worked on Soca Cat extensively, and we looped 4 measures
slowly, toward the end- I was in the groove as they say, and I did loose [sic.]
focus of the time, because suddenly, there was an effortlessness to this, and I
wasn't even having to look where the note was, and found myself reaching behind
me and actually finding that B and that E without looking, and I became aware of
that, and I thought, 'This is cool.' That's all I can tell you. (47755,48207)

Witnessing a growth in one's sense of self is another result of a flow experience,

and was evident in participant reflections. Through a journal entry, Dana revealed, "This

seems silly, but this course seems life-changing to me. I've found a new way of musical

expression and a sense of community that doesn't feel the same as singing in a choir"

(84379,84559).

The element of anti-flow manifested itself as a form of fear (18.18%), frustration

(31.18%), lack of structure (18.18%), or overwhelming challenge (45.45%) (see Figure

7). Anti-flow refers to all of those factors that, if present, would negate the possibility for

a flow experience to occur. Ellen clearly stated in a reflection, "Things are progressing

faster than my brain can keep up with" (4758,4824), which would suggest that this

participant is both overwhelmed and frustrated by her inability to cope with material that
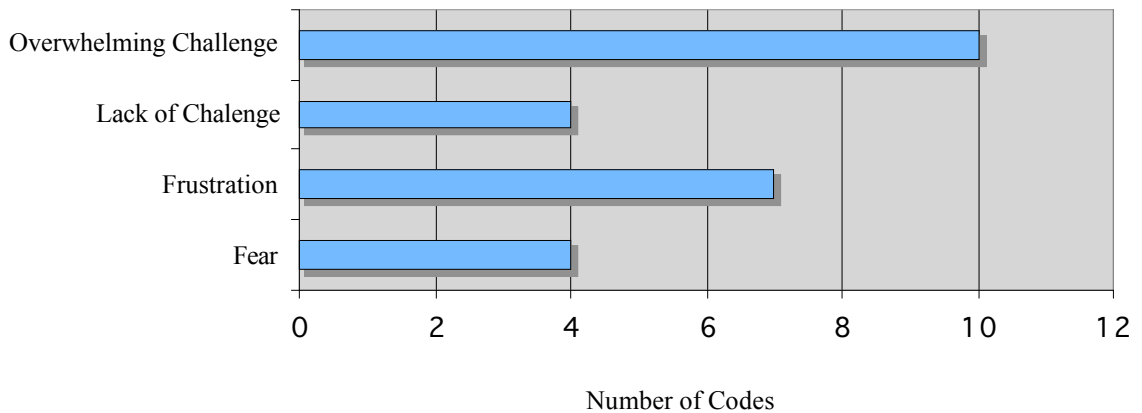
is too challenging.

Figure 7. Anti-Flow.

Additional Emergent Themes

There were themes that emerged that did not specifically address one of the

research questions (see Figure 1). These themes were:

1. Multiple perspectives (10.57%)

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2. Curricular coherence of content (3.93%)

3. Learning of New Pedagogical Tools (7.25%)

4. Positive Support (1.21%)

5. Negative/Lack of Support (3.02%)

These themes became apparent in the identification of factors that, while not directly pertaining to the concept of flow, affected whether or not participants continued to utilize either pan, or the concepts learned through the use of the pan, in their classrooms.

The value of exposure to multiple perspectives was a prominent theme among participant data. Lucy shared through her journal that, "By being totally immersed in the steel drum band situation, we are all forced to use different though processes. It makes us see that teaching the way that some of us are now teaching is a very difficult way to learn" (70479,70627). In addition to the value of gaining multiple perspectives on their own teaching and learning, the value of receiving multiple perspectives through the teacher's instruction of participants was also clear through the data analysis. Jan reflected, "I like the idea that when one teacher is there we're on one instrument, and with another teacher we switch just because it's a good breaking point with the two different styles [of teaching]" (1228,1404).

The curricular coherence of content presented in the steel drum cluster was of the utmost importance in determining whether participants would continue to use steel drums in their classrooms. Tom expressed through his journal how what he has learned has "implications for teaching many concepts including theory and composition." He

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articulated that he can see the "parallel between teaching pan by rote and how [he] introduce[s] introductory band instruments" (12457,12620). According to the Internet survey, About fifty-four percent (54.17%) of participants felt very prepared to create and implement a unit on steel pan at the close of the cluster (see Table 7). None of the participants felt unprepared to incorporate steel drums into their curriculum. Yet, about thirteen percent (12.5%) of participants reported that they were unable to integrate the steel drums into their curriculum (see Table 8). Two thirds (66.67%) of participants deemed the material presented in the cluster as being consistent with standards-based instruction, as well and school goals and expectations (see Table 9).

Table 7. Participant Preparedness in Creating and Implementing Steel Pan Units.

	Number of Participants	Percentage of Participants
Very Prepared	13	54.17%
Somewhat Prepared	11	45.83%
Unprepared	0	0.00%

Table 8. Steel Drum Integration into Curriculum.

	Number of Participants	Percentage of Participants
Yes, Entirely	7	29.17%
Often	6	25.00%
Sometimes	8	33.33%
No	3	12.50%

Table 9. Content Material Alignment with Standards-based Instruction, School Goals, and Expectations.

	Number of Participants	Percentage of Participants
Always	16	66.67%
Often	7	29.17%
Sometimes	1	4.17%
Never	0	0.00%

Learning new pedagogical tools was another important aspect of the steel drum cluster. One teacher from the Internet survey expressed how utilizing what she learned in the cluster has affected her students' learning: "My students learn so much better when they are demonstrating their learning. Instead of one student answering a question, all students have the opportunity to demonstrate learning immediately. All my students understand the concept of scales and building chords from scales because they used that

concept" (7792,8102). According to the Internet survey, about 58 percent (58.33%) felt

that the material presented in the cluster provided a direct pedagogical link to

implementing pan in their curriculum (see Table 10). Participants noted that the

implementation of a steel pan curriculum impacted their students' concept of rhythm and

music theory. Involvement with the steel drums had an effect on students' ensemble

playing outside of the steel band, their overall proficiency with other instruments,

behavioral issues, and increased their awareness of another culture (see Table 11).

Table 10. Pedagogical Link to Implementing Pan in the Curriculum.

	Number of Participants	Percentage of Participants
Always	14	58.33%
Often	6	25.00%
Sometimes	4	16.67%
Never	0	0.00%

According to the Internet survey, three-fourths of participants found their school

administration to be very supportive of incorporating steel pan into the curriculum (see

Table 12). About seventy-nine percent (79.17%) of participants found both colleagues

and the school community to be very supportive of the inclusion of steel drums into the

curriculum (see Table 13-14). Only one- third of participants felt that the follow-up to the

weeklong summer session of the professional development cluster was highly effective

(see Table 15).

Table 11. Steel Pan Curriculum Impact on Students.

	Number of Participants	Percentage of Participants
Rhythm	19	79.17%
Music Theory	15	62.50%
Music Literacy	10	41.67%
Ensemble playing outside of pan band	11	45.83%
Overall proficiency with other instruments/voice	11	45.83%
Behavioral issues	14	58.33%
Increased awareness of another culture	14	58.33%

Table 12. Support from School Administration.

	Number of Participants	Percentage of Participants
Very Supportive	18	75.00%
Somewhat Supportive	2	8.33%
Indifferent	3	12.50%
Unsupportive	1	4.17%

Table 13. Support from Professional Colleagues.

	Number of Participants	Percentage of Participants
Very Supportive	19	79.17%
Somewhat Supportive	3	12.50%
Indifferent	2	8.33%
Unsupportive	0	0.00%

Table 14. Support from School Community.

	Number of Participants	Percentage of Participants
Very Supportive	19	79.17%
Somewhat Supportive	3	12.50%
Indifferent	2	8.33%
Unsupportive	0	0.00%

Table 15. Feedback Received from Instructors.

	Number of Participants	Percentage of Participants
Highly Effective	11	45.83%
Effective	12	50.00%
Neutral	1	4.17%
Ineffective	0	0.00%
Highly Ineffective	0	0.00%

Still, participants expressed concern over the amount of active support they truly received from their school system. One respondent remarked, "Staffing, funding, scheduling...I have had to seek support myself...no state, district, [there is no] school [or] joint initiative to make it a part of music learning for everyone..." (4520,4614). In relation to follow-up from the steel drum cluster itself, one participant expressed that, "the support was available for asking. I did not ask for the support." While there were follow-up meetings, and in the case for some years, performances, active support within the classroom was not a part of the cluster program.

<u>Discussion</u>

Results show that in determining whether the steel pan was an effective tool for effective professional development, participants indicated that they enjoyed themselves and were interested and motivated while playing the pan. Despite concerns for a lack of funding and access to the drums, using the steel pans allowed participants to learn new skills while attending the professional development cluster that were applicable to their individual classroom contexts.

Results also indicate that through the immersion context of the steel drum cluster, participants were able to receive the clear goals and immediate feedback that was necessary to concentrate and feel as if they had a chance to complete tasks. Participants did relate experiences that could be construed as flow experiences in that there was a sense of effortlessness, transcendence in time, and a growth in one's sense of self. These

attributes of flow were present despite challenges that participants encountered while learning how to play the steel drums.

In addition, attributes of effective professional development were present in participant data in the form of participant responses that addressed the value of having multiple perspectives, positive support, curricular coherence of content, and the learning of new pedagogical tools. All themes and findings relating to the attributes of effective professional development and indicators of flow that were present in the immersion paradigm will be presented in chapter five.

Chapter 5

FINDINGS

The Delaware Department of Education sponsors an immersion-based Steel Drum Professional Development Cluster in collaboration with the University of Delaware. Summative assessment of the cluster was required by the Department of Education for the cluster to be considered for continued funding. The purpose of this study was to conduct research that would determine the efficacy of this professional development program. Specifically, the two research questions were:

1. What is the efficacy of using steel pans as a means for professional development for teachers?

2. Do music educators experience flow during an intensive 90-clock hour professional development cluster?

Themes and findings from this research study are not generalizable. However, due to the longevity of the study, the number of participants who were involved across a four-year time span, as well as the variety and volume of data collected and analyzed, findings stemming from this research may be transferable to other similar professional development settings.

Summary of the Study

Professional development should be able to change, adapt, and strengthen teacher skills in order to prepare teachers for the realities of their classrooms. An in-depth-review of the literature on professional development delineated those characteristics of a professional development program that would foster sustainable teacher change over a long period of time. An effective professional development program makes valuable connections with teachers' prior knowledge, has goals that positively align with existing school and state educational standards, and is considered long-term in nature. It utilizes study groups, or structured and collaborative interactions among peers, and facilitates coaching or mentoring arrangements for individualized instruction. Effective professional development produces networks of like-minded individuals, encouraging future collaboration, and promotes immersion in inquiry. Lastly, these programs organize meaningful reflection.

To determine whether or not these characteristics were present in the steel pan cluster, data were collected and analyzed. Participant portfolios and journals were collected over a four-year period. In addition, informal, structured interviews were held with participants and instructors of the cluster, and video data were collected of participants in action during their immersion into steel pan. Field observations were made during the professional development cluster week, and from teachers utilizing pan in their classrooms after their professional development experience. Finally, a survey was constructed and sent to participants electronically through the Internet.

Data were analyzed through the theoretical lens of Csikszentmihalyi's flow theory. Csikszentmihalyi's research suggests that there exists an optimal experience where "people are so involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it" (Csikszentmihalyi, 1991, p. 4). In order for an optimal experience, or flow state, to occur, learning environments must enable full concentration. This is usually made possible by having clear, attainable goals, and the provision of immediate feedback. If these elements are present, and the challenge at hand matches an individual's skill set, then a flow state can occur resulting in an order to one's consciousness, a loss of concern for the self, and feelings of effortless involvement. Persons will also experience the illusion of transcendence in time.

These indicators of flow and features of effective professional development were used to code and analyze the data. In sum, the findings of this study corroborate previous research concerning the characteristics of effective professional development, as well as those situational elements that contribute to creating a context for a flow experience.

<u>Themes and Findings</u>

<u>Steel Drums and Professional Development</u>

Theme #1: T*he use of steel pan actively engaged participants, as well as provided a sense of enjoyment, consequently motivating teachers to succeed.* In determining the efficacy of using steel pan as a means for professional development, trends in the data revealed the importance of engagement and enjoyment. Using the steel pans in a professional development setting created circumstances where teachers were not just

talking about innovative ideas, but rather actively engaging in them. Immersing teachers in activities where they can share each other's understandings and experiences provides a learning environment that promotes teacher learning and change (Hammerness et al., 2005). Furthermore, Bloom and Skutnick-Henley (2005) concluded that flow experiences tended to occur more often in small ensemble settings than when playing an instrument alone. The Steel Drum Professional Development Cluster consistently placed teachers in a position to be able to play a musical instrument in the company of other like-minded individuals. The findings of this study suggest

Participants expressed concern about having access to the steel drums in their respective schools, and not having enough funding to buy a set of drums for their district. A question then arises as to how applicable the lessons taught through the steel pan professional development cluster could be if teachers do not have the resources available in their classrooms to use what they learned during their immersion week. However, the principles learned with steel drums are transferable to other areas of the music curriculum. *The steel drums served as an engaging tool in the teaching of new pedagogical methods.* In many cases, even if participants were not still using the steel drums, they still expressed that they used pedagogical ideas that they learned while playing the steel drums in other lessons throughout their curriculum.

Those teachers that took the initiative to write grants and fundraise were able to purchase drums for their schools. The state of Delaware is fortunate in that is owns two sets of steel drums that can be used by teachers of the professional development cluster in the year following their participation, thus giving participants access to the steel drums. If

funding was not readily available through the school system to maintain a set of steel

drums after a teacher's professional development period had ended, the steel pan cluster

prepares teachers to write grants and explore alternative routes of funding for the

purchase of steel drums.

Discussion

Theme 2*: The active learning that participants engaged in demonstrated that the steel pan could be a successful catalyst for teacher change and improvement within a professional development setting.* Steel pans, in the context of this professional

development program, were able to engage and motivate teachers, as well as excite them

about the prospect of performing a new and unique instrument. The enjoyment that was

displayed by participants proved to be a motivating factor for teachers to accomplish

program goals, and pursue purchasing drums for their own classrooms. Steel drums

served as a vehicle for teachers to experience new pedagogical techniques, and encounter

new perspectives on their teaching and their students' learning as they encountered their

own challenges learning a new instrument.

Attributes Indicating Flow

When participants were given appropriate challenges to match their skill levels,

and instruction was approached in a way that allowed for participants to feel that they did

have the opportunity to be successful, an environment was created that would be

conducive to states of flow. Results suggest that there were participants who entered into

states of flow during their professional development experience. Participants felt as if

they had a chance to complete assigned tasks, were given appropriate challenges, and had time to breakdown the material learned. This theme supports Byrne, MacDonald, and Carlton's (2003) finding that creating a learning environment where flow can be achieved requires setting tasks that are challenging yet attainable.

Theme 3: *Having clear goals contributed to setting up an environment that would allow for participants to concentrate and focus their attention on a specific task.* The instructors' use of modeling and guided practice further contributed to the possibility of flow within this professional development context. Byrne (2002) supports the importance of having clear goals, stating that for flow to be present, clear goals should be provided in combination with immediate feedback.

Theme 4: *Immediate feedback was demonstrated most strongly through the connections and interactions that participants had with each other.* Ingvarson et al.'s (2005) research study indicated that the most effective professional development programs included activities that allowed for teachers to share their teaching practice with colleagues in order to gain insightful feedback. The value of working collaboratively was also expressed through the research of Lind (2007). She proposed that focusing on student learning, and preparing curriculum positively influenced teachers' work. Lind found that many teachers commented on the value of working with colleagues, professing that it challenged them to listen to multiple perspectives and question their own practice (Lind, 2007). Upitis et al.'s (1999) research concerning professional development considered a feeling of community as being necessary for transformations to be made in teacher practice. This finding is also supported by Hammerness, Darling-Hammond, and

Bransford (2005) when they suggested that immersing teachers in practice and in professional communities where teachers can share their understandings is especially conducive to teacher learning (Hammerness et al, 2005).

Theme 5: *Positive reinforcement as a form of immediate feedback can help teachers to succeed, overcome their challenges, and possibly have a flow experience.* Immediate feedback was given through the instructors' provision of positive feedback and ongoing resources. The value of positive reinforcement is elevated when trying to incite a flow experience. Byrne (2002) states the importance of not fearing failure when creating an environment that is conducive to flow. The role of immediate feedback is important as an indicator of effective professional development practice, allowing participants to gauge whether or not they are accomplishing goals. For participants in this study, the provision of immediate feedback further clarified goals and provides additional focus that can create an atmosphere encouraging concentration, and thus flow.

Immersion and Flow

Theme 6: *The ability to concentrate throughout the cluster was most commonly provided by having structure to the program, engagement, and immersion of the participant into the playing and culture of the steel drums.* Teachers were totally involved and engaged in the content material while attending this cluster because they were separated from the outside world, and able to concentrate solely on the tasks at hand. The immersion paradigm created a very favorable environment for flow. These findings corroborate Bloom and Skutnick-Henley's (2005) study on musicians, where two of the top descriptions related by musicians as leading to a flow experience were their

concentration level, and focus on the task at hand. Also, Shernoff, Csikszentmihalyi, Schneider, and Shernoff (2003) pronounce the importance of having concentration, interest, and enjoyment being experienced simultaneously for a flow experience to occur.

The immersion paradigm creates an environment where participants are able to set goals and then involve themselves in the completions of these goals, thus enhancing the opportunity for total concentration, and feelings of effortlessness. Numerous participants reported a sense of effortlessness while attending the steel drum cluster. A sense of effortlessness resulted when participants' skills were matched with an appropriate challenge, and was also a product of the time that was dedicated to the repetition and chinking of material in this immersion-based professional development experience. According to Bryne et al. (2003), when students possess an ownership over material, feelings of effortless involvement can be created. According to Csikszentmihalyi (1991), as long as incoming stimulus is connected with one's current goals, then psychic energy will flow effortlessly.

Outcomes of Flow Experience

Those participants who were interviewed and expressed feelings of transcendence in time also expressed feelings of effortlessness in involvement. Transcendence in time is perhaps the hardest element of flow to account for, and yet was professed by numerous participants. Perceived change in the duration of time is a strong indicator of an optimal experience, and is dependent on both the environmental factors that would lead to a flow experience, and the mental readiness of the participant. Depending solely on teacher reflections for indications of this phenomenon does not account for the possibility of

teacher bias. For this reason, participant responses that were consistent with the code for transcendence in time were triangulated with video data of the participants in practice during the professional development week. Also, to make the best conclusion as to whether or not participants truly lost sense of time, data were compared with informal interviews that were conducted with participants. According to Csikszentmihalyi (1991), it is when experiences and tasks become effortless in their involvement that a person's perception of time as standing still occurs.

Theme 7: *An awareness of anti-flow will allow professional development facilitators to be sensitive to the frustrations or failures of participants, affording them the opportunity to match challenges with ease.* The element of anti-flow manifested itself as a form of fear, frustration, lack of structure, or overwhelming challenge. Anti-flow refers to all of those factors that, if present, would negate the possibility for a flow experience to occur. Throughout the cluster, participant journal entries make note of challenges that were faced, but there were no participants whose journal entries suggest they were in constant states of frustration or failure. Instead, these entries serve as documentation of which the progress of individuals is marked as they overcome challenges throughout the immersion week.

Theme 8: *The immersion paradigm of the cluster allowed for the total engagement of participants, further promoting such flow indicators as transcendence in time, a growth in one's sense of self, and feelings of effortlessness.* Bakker (2005) reports that the provision of job resources such as performance feedback, support from colleagues, and coaching arrangements combine to provide a constructive balance

between challenges and skills. As a result, these job resources served as predictors of flow among the 178 music teachers involved in his research study. The present study corroborates Bakker's findings, with participants stating the importance of those elements of flow such as having relevant feedback from instructors and peers, and goals that were clear and attainable. This study of the Steel Drum Professional Development Cluster does account for all of the elements of flow as being necessary for an optimal experience to occur, unlike other related studies (Byrne, 2002; Jackson and Marsh's, 1996). Riggs offers a counter-lens on flow when she states, "What might produce flow in one individual is different from another, so it is not the activity that is important, but the perception of skills and challenges by the participant" (Riggs, 2006, p. 269). All students are unique; they will encounter different challenges. Based on the findings of this research, the immersion model of the Steel Drum Professional Development Cluster allows enough time for instructors to successfully meet the needs of the participants, and provide an environment that is conducive to flow.

Attributes of Effective Professional Development

Theme 9: *Encountering multiple methods of instruction, as well as having to take on an unfamiliar role as a student playing steel pan, forced participants to approach learning material in new, fresh ways.* The value of exposure to multiple perspectives was a prominent theme among participants. Langer's (1990) assertions concerning the importance of considering multiple perspectives when learning new material are relevant when evaluating the steel drum cluster. These new perspectives were valuable to participants, and helped to enact teacher change in practice. The importance of an

experience-based perspective is communicated by the research of Tilemma and Imantis (1995). They affirm that experienced-based professional development provides a natural immersion context for the learning of new ideas. Encountering differing perspectives on music education from instructors and peers forced participants to be mindful of their own practice, and of how they were learning a new instrument (the steel pan) so that they could teach it to their students efficiently. Coffman (2002) views the learner-centered perspective as having adults as mutual partners in the design of their learning. The participants in the steel drum cluster worked as partners in learning, and the combination of the new perspectives they gained from instructors, their reflections, and from peers redefined their learning experience.

The curricular coherence of the content presented within the professional development experience was also an indicator as to whether or not participants would use newly learned concepts. When participants were able to relate to the material, there was a much greater likelihood that they would then use the ideas in their own classrooms. Upitis et al. (1999) developed a matrix for analyzing the conditions deemed necessary for teachers' successful transformations after their professional development experience. When participants are able to relate information to their own classrooms, and previous experience, then the goals of the professional development experience will be more successful. A focus on content knowledge, having opportunities for active learning, and providing coherence with other learning activities are also significant positive indicators for teachers' self-reported claims of increase in knowledge, skills, and changes in the classroom (Garet et al., 2001). The steel drum cluster's open discussions allowed for

participants to make the connections between their prior knowledge and what they were being taught during the immersion week. Much of the responsibility was placed on the participants to make these connections. Research has shown that when participants are able to link the concepts that they are being taught with what they already do, or what they could possibly do in their classrooms or in other ensembles, then teacher change is more likely to occur (Penuel et al., 2007).

Many participants were able to learn new pedagogical tools as a result of their experience in the immersion context of the cluster. One of the goals of an immersion context is that teachers will internalize the teaching practices, and pedagogical tools that are being used in their professional development instruction. Ideally, the immersion paradigm would promote a smooth and confident transition for teachers to be able to use some of the same ideas from their own learning experience with their students. Boyle, While, and Boyle (2004) define immersion within a professional development experience as engaging teachers in the kinds of learning that they are expected to practice with their own students. My observations of participants indicate that as a result of the immersion paradigm of this cluster, teachers were successful in implementing newly learned skills with their own students.

The role of support, both positive and negative, proved to be an important factor relating to whether or not teachers continued to use steel drums in their classroom after their professional development participation had ended. According to Klein (2007), about one-fourth of teachers indicated that there was no support in following up their professional development experience by the school administration. Within the Steel

Drum Professional Development Cluster, participants indicated that their school administrations, colleagues, and community were very supportive of incorporating steel pan into the curriculum. Yet, for the majority of participants, this support did not extend into the budget. Having steel drums may be exciting, and great "PR" for school administrators, but finding money and staff to support a program is a different matter. While issues concerning school politics may be out of a professional development program's scope, the steel drum cluster did offer structured discussions concerning the acquisition of funding. However, the realities of school budgeting can put a halt to the institution of new, innovative programs in schools. Proper support for teachers, whether it be follow-up from professional development instructors, financial support from the district, or help from staff in the classroom, remains crucial to the success of any new innovative program. The steel drum cluster could have done more in regards to active support and mentoring in the classroom with participants while they had the pans. Mentoring and coaching support would have resulted in a more positive experience for all participants, and a greater likelihood of maintaining steel drum programs in the schools.

Penuel et al.'s (2007) research asserts that the incorporation of time for curriculum planning and the presence of technical support were also both important factors in encouraging program implementation. Furthermore, their findings showed that teachers reported more change when there was collective participation in professional development experiences. Follow-up support for teachers had a positive impact on teacher knowledge, total data reporting, and protocol use (Penuel et al., 2007). The

findings of the present study support Penuel et al.'s claims on the importance of support and encouragement for program implementation, as well as the value of learning with others in a professional community. Garet et al. (2001) go one step further by stating programs that: a) allocated time for teachers to test new teaching methods and receive follow-up support, b) compelled teachers to actively reflect on their current practice, c) had content that was research-based, and d) led teachers to focus on what students were going to learn and how to adjust to problems their students might encounter, were the most effective programs in promoting teacher efficacy. The immersion context of the steel drum professional development cluster accounts for all of these characteristics of an effective professional development cluster, and participant responses relate how their experiences better prepared them for teaching their students.

Implications for Professional Practice

Implications from this research are that professional development providers should: a) consider using an immersion model with sustained interaction between teachers and instructors, providing follow up professional development to ensure teacher success with implementing pedagogical change, and b) take the indicators of flow and anti-flow into account when planning and implementing professional development experiences. The presence of Csikszentmihalyi's elements of flow within an immersion context creates an atmosphere that promotes teacher change and learning. In combination with the indicators of a successful professional development program as indicated by the research literature, the elements of flow can have a powerful affect on creating and sustaining learning environments.

Directions for Future Research

Csikszentmihalyi (1991) contends that the state of enjoyment one receives from having an optimal experience is the motivating factor for individuals to overcome great challenges: The sense of enjoyment after a flow state is reward enough for people to labor through hardships. This leads me to wonder how to best motivate an individual who has never had an optimal experience.

There is a need for more research into the implementation of immersion paradigms in professional development contexts. It has been shown through the research on the Steel Drum Professional Development Cluster that the immersion approach is effective in motivating teachers to succeed, and instilling the confidence and skills necessary to successfully enact teacher change.

Finally, research is needed to inquire whether there is a transfer of flow from teachers who were able to enter into flow states during their professional development experience, or during the act of teaching to their students.

Csikszentmihalyi's elements of flow may offer the missing link in providing effective, long-term learning experiences that can impact the way that educators learn new concepts and skills and subsequently teach this content/material. In combination with existent research on what makes for long-term change in teacher practice, further research is needed to support the importance that optimal experiences hold in motivating individuals to learn and succeed.

REFERENCES

Association for Psychological Science (2007, September 3). Back to school: Cramming doesn't work in the long term. *Science Daily*. Retrieved February 5, 2008, from http://www.sciencedaily.com- /releases/2007/08/070829122934.htm.

Asmus, E.P. & Zdinsky, S.F. (2008) *How to read a research article from A to Z.* Paper presented at the 2008 International Society for Music Education Conference. Bologna, Italy.

Bakker, A. B. (2005). Flow among music teachers and their students: The crossover of peak experiences. *Journal of Vocational Behavior, 66,* 26-44.

Ball, D.L. & Cohen, D.K. (1999). Instruction, capacity, and improvement. *Consortium for policy research in education.*

Bloom, A. J., & Skutnick-Henley, P. (2005). Facilitating flow experiences among musicians. *American Music Teacher.*

Bowles, C. (2003). The self-expressed professional development needs of music educators. *Update: Applications of research in music education, 21*(2).

Boyle, B., While, D., & Boyle, T. (2004). A longitudinal study of teacher change: what makes professional development effective? *The Curriculum Journal, 15*(1), 45-68.

Bryck, A., Camburn, E., & Seashore, K. (1997). *Professional community in Chicago elementary schools: Facilitating factors and organizational consequences.* Revision of paper presented at the Annual Meeting of the American Educational Research Association. New York: NY.

Bush, J.E. (2007). Importance of various professional development opportunities and workshop topics as determined by in-service music teachers. *Journal of Music Teacher Education, 16*(2), 10-18.

Byrne, C. (2002). Flow and creativity in the music classroom. Paper presented at the *10th anniversary Musical Creativity Conference.* University of Liege, April.

Byrne, C., MacDonald, R., & Carlton, L. (2003). Assessing creativity in musical compositions: flow as an assessment tool. *British Journal of Music Education, 20*(3), 277-290.

Carmichael, L. (1982). Leaders as learners: A possible dream. *Educational Leadership*, *40*(1), 58-59.

Coffman, D.D. (2002). Adult education. In Colwell & Richardson (Eds.) *The new handbook of research on music teaching and learning.* Oxford University Press, U.S.A. 199-208.

Cohen, D.K., & Hill, H.C. (2001). *Learning policy: When state education reform works.* New Haven, CT: Yale University Press.

Colwell, R. (1996). Professional development residency program. *Quarterly Journal of Music Teaching and Learning, 7*(2-4), 76-90.

Conway, C. (2007). Setting an agenda for professional development policy, practice, and

    research in music education. *Journal of Music Teacher Education*, *17*(1)56-

    61.

    Conway, C. (2003). Ongoing professional development. *Great beginnings for*

    music teachers: Mentoring and supporting new teachers. Reston, VA: MENC:

    The National Association for Music Education.

Csikszentmihalyi, M. (1991). *Flow: The psychology of optimal performance.* New York:

    Harper Perennial.

Csikszentmihalyi, M. (1996). *Creativity: Flow and the psychology of discovery and*

    invention. New York: Harper Perennial.

Csikszentmihalyi, M. (1998). *Finding Flow: The psychology of engagement with*

    everyday life.   New York: Basic Books.

Custodero, L. A. (1998). Observing flow in young children's music learning. *General*

    Music Today, 12(1), 21-27.

Custodero, L. A. (1999). Construction of musical understandings: The cognition-flow

    interface." Paper presented at *Cognitive Processes of Children Engaged in*

    Musical Activity conference.

Custodero, L.A. (2002) Seeking challenge, finding skill. Flow experience and music

    education. *Arts Education Policy Review, 103*(3), 3-9.

Custodero, L. A. (2005). Observable indicators of flow experience: a developmental

    perspective on musical engagement in young children from infancy to school age.

    Music Education Research, 7(2), 185-209.

Darling Hammond, L. & Hammerness, K. (2005). The design of teacher education

    programs. In Darling-Hammond & Bransford (Eds.) *Preparing teachers for a*

    changing world. San Francisco: Jossey Bass. 390-441.

Davies, R. & Preston, M. (2002). An evaluation of the impact of continuing professional

    development on personal and professional lives. *Journal of Service Education,*

    3(2), 231-254.

Elliot, D.J. (2002). Philosophical perspectives on research. In Colwell & Richardson

    (Eds.) *The new handbook of research on music teaching and learning.* New

    York: Oxford University Press. 85-102.

Encarta® World English Dictionary (1999). Microsoft Corporation. Word definition:

    Efficacy.

Falk, B. & Blumenreich, M. (2005). *The power of questions: A guide to teachers and*

    student research. Portsmouth: Heinemann.

Flinders, D.J., & Richardson, C.P. (2002). Contemporary issues in qualitative research

    and music education. In Colwell & Richardson (Eds.) *The new handbook of*

    research on music teaching and learning. New York: Oxford University Press.

    1159-1175.

Fullan, M. & Steigelbauer, S. (1991). *The meaning of educational change.* Teachers

    College Press, Columbia University, New York, NY.

Fullan, M.G. (1995) The limits and the potential of professional development. In R.

    Guskey & H. Huberman (Eds.) *Professional development in education: New*

    paradigms and practices. Teachers College: Columbia University. 253-267.

Garet, M.S., *et al.* (2001). What makes professional development effective? Results from

    a national sample of teachers. *American Educational Research Journal. 38*(4),

    915-945.

Gough, N. (1989). From epistemology to ecopolitics: Renewing **a** paradigm for

    curriculum. *Journal of Curriculum Studies, 21*, 225-241.

Guskey, T.R. (1994). Professional development in education: In search of the optimal

    mix. Paper presented at the 1994 annual meeting of the *American Educational*

    Research Association. New Orleans, Louisiana. April.

Hammerness, K., Darling Hammond, L., & Bransford, J. (2005) How teachers learn and

    develop. In Darling-Hammond & Bransford (Eds.) *Preparing teachers for a*

    changing world. San Francisco: Jossey Bass. 358-389.

Heller, J.J. & O'Connor, E.J.P. (2002). Maintaining quality in research and reporting. In

    Colwell & Richardson (Eds.) *The new handbook of research on music teaching*

    and learning. New York: Oxford University Press. 1089-1107.

Hookey, M.R. (2002). Professional Development. In R. Colwell, & C. Richardson (Eds.)

    The new handbook of research on music teaching and learning. New York:

    Oxford University Press. 887-902.

Hord, S. M. (1997). *Professional learning communities: Communities of continuous*

    inquiry and improvement. Austin, TX: Southwest Educational Development

    Laboratory.

Horsley, S. (2002). Creating stronger music educators through group professional

    development. *Canadian Music Educator, 44*(1) 16, 21.

Ingvarson, L., Meiers, M., & Beavis, A. (2005). Factors affecting the impact of professional development programs on teachers' knowledge, practice, student outcomes & efficiency. *Education Policy Analysis Archives. 13*(10).

Jackson, S. & Marsh, H. (1996). Development and validation of a scale to measure optimal experience: The flow state scale. *Journal of Sport and Exercise Psychology. 18*(1), 17-35.

Junda, M.E. (1994). A model in-service music teacher education program. *Journal of Music Teacher Education.3*(2), 6-19.

Killion, J. (1999) *Islands of hope in a sea of dreams: A research paper on the eight schools that received the National Award for Model Professional Development.* Retrieved Jan. 18, 2008, from http://www.wested.org/wested/pubs/online/ PDawards/04descriptions.shtml.

Klein, E.J. (2007). Rethinking professional development: building a culture of teacher learning. *The New Educator, 3*(3), 179-197.

Langer, E. J. (1990). *Mindfulness.* US: Addison-Wesley.

Langer, E.J., & Imber, L.G. (1979) When Practice makes imperfect: Debilitating effects of overlearning. *Personality and Social Psychology, 37*(11), 2014-2024.

Leglar, M. & Collay, M. (2002). Research by teachers on teacher education. In Colwell & Richardson (Eds.) *The new handbook of research on music teaching and learning.* New York: Oxford University Press, 855-873.

Lind, V.R. (2007) High quality professional development: An investigation of the supports for barriers to professional development in arts education. *International Journal of Education & the Arts, 8*(2) pp. 1-18 Retrieved 12-27-07 from http://ijea.asu.edu/v8n2/.

Locke, E. A. (1968). Effects of Knowledge of results, feedback in relation to standards, and goals on reaction-time performance. *The American Journal of Psychology, 81*(4), 566-574.

Maehr, M.L., Pintrich, P.R., & Linnenbrink, E.A. (2002). Motivation and Achievement. In R. Colwell, & C. Richardson (Eds.) *The new handbook of research on music teaching and learning*. New York: Oxford University Press. 348-372.

McCotter, S.S. (2001). Collaborative groups as professional development. *Teaching and Teacher Education, 17*(6), 685-704.

Mevarich, Z.R. (1995). Teacher's Paths on the way to and from the professional development forum. In R. Guskey & H. Huberman (Eds.) *Professional development in education: New paradigms and practices.* Teachers College: Columbia University. 151-170.

Morrissey, M.S. (2000). Professional learning communities: An ongoing exploration. Austin, TX: Southwest Educational Development Laboratory.

Parsad, B., Lewis, L., Farris, L., & Westat. (2000). Teacher Preparation and Professional Development: 2000. *National Center for Education Statistics*.

Phillips, K. H. (2008). *Exploring research in music education and music therapy.* New York: Oxford University Press.

Penuel, W.R., Fishman, B.J., Yamaguchi, R., & Gallagher, L.P. (2007). What makes

    professional development effective? Strategies that foster curriculum

    implementation. *American Educational Research Journal, 44*(4), 921-958.

Pohland, P. & Bova, B. (2000). Professional Development as transformational learning.

    International Journal of Leadership in Education, 3(2), 137-150.

Prawat, R.S. (1999). The value of ideas: the immersion approach to the development of

    thinking. *Educational Research, 3*(2), 3-10, 30.

Resnick, L.B. (2005). Teaching teachers: Professional development to improve student

    achievement. *Research Points, 3*(1), 1-4.

Researchware (2007). HyperRESEARCH 2.8.*<http://www.researchware.com>*

Researchware (2007). HyperTRANSCRIBE 2.8. *<http://www.researchware.com>*

Reyes, P., Scribner, J. D., & Paredes Scribner, A. (Eds.). (1999). *Lessons from high-*

    performing Hispanic schools: Creating learning communities. New York:

    Teachers College Press.

Richardson, V. (1990). Significant and worthwhile change in teaching practice.

    Educational Researcher, 23(5), 5-10.

Riggs, K. (2006). Foundations for flow: A philosophical model for studio instruction.

    Philosophy of Music Education Review, 14(2), 175-191.

Sheridan, M. & Byrne, C. (2002). Ebb and flow of assessment in music. *British Journal*

    of Music Education, 19(2) 135-143.

Shernoff, D.J., Csikszentmihalyi, M., Schneider, B., & Shernoff, E.S. (2003). Student

    engagement in high school classrooms from the perspective of flow theory.

    School Psychology Quarterly,18(2) 158.

Sparks, D., & Hirsh, S. (1999). A national plan for improving professional development. *National Staff Development Council.* Retrieved from *<http://www.nsdc.org/library/authors/NSDCPlan.cfm>.*

Tillema, H.H., & Imantis, J.G.M. (1995). Training for the professional development of teachers. In R. Guskey & H. Huberman (Eds.) *Professional development in education: New paradigms and practices.* Teachers College: Columbia University, 135-150.

Thompson, C.L. & Zeuli, J.S. (1999). The frame and the tapestry: Standards-based reform and professional development. In L. Darling-Hammond & G. Sykes (Eds.) *Teaching is the learning profession: Handbook for policy and practice*, 341-375.

Upitis, R. (2005). Experiences of artists and artist-teachers involved in teacher professional development programs. *International Journal of Education and the Arts, 6*(8), 1-12.

Upitis, R., Smithrim, S., & Soren, B. (1999). When teachers become musicians and artists: teacher transformation and professional development. *Music Education Research, 1*(1) 23-36.

Wade, R.C. & D. B. Yarbrough. (1996). Portfolios: A tool for reflective thinking in teacher education. *Teaching and Teacher Education, 12*(1), 63-79.

APPENDIX A

UNIVERSITY OF DELAWARE

OFFICE OF THE VICE PROVOST
FOR RESEARCH AND
GRADUATE STUDIES

210 Hullihen Hall
University of Delaware
Newark, Delaware 19716-1551
Ph: 302/831-2136
Fax: 302/831-2828

October 10, 2007

Suzanne Burton, PhD
Music Education
313 Amy DuPont Music Building

Dear Dr. Burton:

    Subject: **Flow Theory and Steel Drum Pedagogy**
                     (XMP 165)

    The above-referenced proposal, which you submitted for Human Subjects Review Board approval, will qualify as research exempt from full Human Subjects Review Board review under the following category:

    Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (a) research on regular and special education instructional strategies, or (b) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

    Please note that under university and federal policy, all research, even if exempt, must be conducted in accordance with the Belmont Report, copies of which are available from this office. Changes in this project must be approved in advance by the Human Subjects Review Board.

                            Sincerely,

                            Richard D. Holsten
                            Associate Provost for Research
                            Chair, Human Subjects Review Board

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2007 Exploring Music Theory
through
Investigation of the History, Properties and Construction of the Steel Drum

Research Consent Form

I give permission to the Delaware Department of Education (DDOE), and the Music Education Department of the University of Delaware to:

1. **Gather data specific to the implementation of this cluster. This research will entail,** *but not be limited to*, **the review of archived correspondence and documents throughout the cluster.**

2. **Post and/or publish my units of study developed through the <u>Exploring Music Theory through Investigation of the History, Properties and Construction of the Steel Drum</u> professional development cluster on a website or in other publications. For research purposes, I will also allow the DDOE and UD, to share my journals with the educational community without revealing my name and work place.**

3. **Gather demographic and statistical data during the course of this cluster. Individual school and participant names will remain confidential, and the data will be reported in the aggregate.**

_____

_____

(Signature)   (Date)

_____

(Print your name)

APPENDIX B

Steel Drum Professional Development Cluster Survey

1) How supportive was the administration at your school of your incorporation of steel pan into the curriculum?
Very supportive
Somewhat supportive
Indifferent
Unsupportive
2) How supportive were your colleagues of your incorporation of steel pan into the curriculum?
Very supportive
Somewhat supportive
Indifferent
Unsupportive
3) How supportive was the school community of your incorporation of steel pan into the curriculum?
Very supportive
Somewhat supportive
Indifferent
Unsupportive
4) Were you able to integrate the steel drums into your current curriculum?
Yes, entirely
Often
Sometimes
No
5) How effective was the feedback that you received from instructors during the cluster?
Highly effective
Effective
Neutral
Ineffective
Highly ineffective
6) Was the material presented in the cluster consistent with standards based instruction, school goals, and expectations?
Always
Often
Sometimes
Never
7) Did you feel a sense of collegiality and camaraderie with other participants during the steel pan cluster?
Yes
No

8) Did the material presented in the cluster provide a direct pedagogical link to implementing pan in your curriculum?
Always
Often
Sometimes
Never

9) Was the instructional content presented in a clear fashion, giving you the opportunity to achieve an acceptable skill level playing pan?
Always
Often
Sometimes
Never

10) How prepared did you feel creating and implementing a unit on steel pan at the close of the cluster?
Very prepared
Somewhat prepared
Unprepared

11) In what ways has the implementation of a steel pan curriculum impacted the student that you teach?
Rhythm
Music Theory
Music Literacy
Ensemble playing outside of pan band
Overall proficiency with other instruments/voice
Behavioral issues
Increased awareness of another culture

12) How effective was the follow up to the week-long summer session of the professional development cluster?
Highly effective
Effective
Neutral
Ineffective
Highly ineffective

13) How effective was the follow up to the week-long summer session of the professional development cluster the year after that? (see previous question)
Highly effective
Effective
Neutral
Ineffective
Highly ineffective

14) Was there professional support available as an ongoing resource during the cluster?
Always
Often
Sometimes
Never
15) Was there professional support available as an ongoing resource the school year following the summer session?
Always
Often
Sometimes
Never
16) What do you deem as being the most important factor in whether or not you have continued using steel drums in your curriculum?

17) Are there any pedagogical ideas that you have taken out of the context of the steel drum cluster and applied to other areas of your teaching?

18) Has the training you received through the professional development cluster changed any aspects of your teaching?

19) In what ways did creating a portfolio reinforce or expand your learning experience?

20) What would you identify as the greatest challenge associated with the professional development cluster?

21) What would you identify as the greatest reward of your participation in the Steel Drum Cluster?

22) What suggestions do you have to improve the steel drum professional development cluster?

[Powered by CreateSurvey](#)

APPENDIX C

Steel Drum Symposium
Daily Reflection
e-mail to: slburton@udel.edu

1.   **Response to the demonstrations and discussions:**

• Discuss 1 to 3 aspects you *agreed with or learned from* the teaching and learning demonstrations and discussions of the day.

• Discuss 1 to 3 aspects you *questioned or had issues with* from the demonstrations and discussions of the day.

2.   **Reflection on the culture from which steel drum practice emerged:**

• Discuss and react to the cultural aspects surrounding the steel drum practice (social, socio-economic, political, spiritual, gender, and other cultural aspects).

3.   **Reflection on your personal and professional growth:**

• In what ways have the readings and discussions expanded your knowledge about the practice and teaching of steel drums?

• What new pedagogical skills have you learned through the interaction with clinicians, their demonstrations and instruction, discussion, and your peers?

• In what ways do you see yourself implementing your newly acquired knowledge and skills in your own teaching setting?

• In what ways have you developed as a musician?

4.   **Response to the immersion model for professional development:**

• Discuss any benefits for using a condensed time frame for professional development? (Specifically, being immersed in the steel drum practice.)

• Discuss any disadvantages for using a condensed time frame for professional development? (Specifically, being immersed in the steel drum practice.)

5.   **Further remarks, reflections, concerns, questions:**
• Use this space as an opportunity to voice concerns, ask questions, or provide additional commentary from the day's events.

APPENDIX D

Interview Questions

Participant Questions

Interest
1. How did you initially become involved or interested in this cluster? What made you pursue this interest?
   a. How have these interests/ perspectives changed since your involvement in the cluster?
2. What do you see resulting from your participation in this cluster?

Goals and Expectations
1. Were the goals/expectations of this cluster clearly presented to you?
2. During instruction, were/are there realistic goals that you felt you could achieve?
   a. Was your learning process strictly goal oriented?
   b. Did you feel there was significant focus on the methods needed to achieve these goals?
   c. Were concepts presented in multiple perspectives, with multiple means of completing tasks?
   d. Was their clear and immediate feedback relevant to your activities?

Level of Perceived Challenge
1. Of all of the obstacles you have encountered in the cluster, which was the hardest to overcome?
   a. How did you do it?
   b. Did you feel that your skills were appropriately matched and given avenues for action?
   c. Were you faced with appropriate and flexible challenges?
2. Were there any obstacles that you did not overcome?
   a. If so, why?
3. How would you rate your concern for yourself during the cluster's instruction
   a. Were there points of gratification, self worth, embarrassment, pride, etc.?
   b. What brought on these emotions?

4. To what degree do you feel you were actively engaged in interacting with the environment/atmosphere provided by the immersion model of this cluster?
   a. Discuss the ease in which you were able to focus/concentrate your attention
   b. Discuss the degree of effort that was expended in your learning/performing of steel pan.

c. Was there ever a time when you felt your performance to be effortless, automatic, spontaneous or variation of said qualities? Please explain.
d. To what degree did you feel in control of your actions?
e. Were there ever moments of feeling completely absorbed in the activity you were pursuing?
f. To what degree did you feel aware of yourself while playing, as an individual/ensemble?
g. During your involvement within the cluster do you recall any period of time in which your level of activity led to a feeling in which there was a loss of time perspective and/or a feeling of true interconnectedness with your steel drum?
h. Please Explain.

Instructor Questions

1. Can you describe your working/teaching methods?

2. Overall, how is the way you go about your work different now from the way you worked 10/20 yrs ago?

3. What goals were established that enabled the participants to achieve at a higher level than before?—Do you intuitively or mindfully create the situations for participants to experience flow?

4. How does this musical experience differ from other ones you have encountered?

5. How important is rationality versus intuition in your musical pursuits/practice/teaching methods?
    a. Do you have better success with a methodical, rigorous approach to music?

6. What elements of the immersion model of teaching are most conducive to student learning?
    a. Which elements of the immersion model are most conducive to your teaching style?

APPENDIX E

Working Definition of Flow

A state of optimal experience in which consciousness is ordered through the ability to purposefully focus attention. This experience is so enjoyable that people are willing overcome great barriers for no other reason than achieving it. Activities that set clear goals, provide immediate feedback, offer surmountable challenges, and offer a sense of control over one's actions help to facilitate such experiences. One who engages in the flow experience characterizes the duration of time as being altered. He loses concern for himself, yet emerges with a more complex, stronger sense of self. The flow state can be said to be mindful in that in both a flow experience and a state of mindfulness, we do not have a sense of ourselves as being separate from the task we are engaged in, and our involvement is seemingly effortless.

Observable Indicators of Flow

- Deliberate focus and immersion in musical task at hand
  - Perception of high Challenge level
  - Concentration has been made possible
- Desire to repeat a task due to the exhilarating quality of the experience
- Visible enjoyment once the activity has finished
  - enjoyable experiences inspire a sense of control
- Subject expresses feelings of high competency
  - Feeling that there is a chance of completion
  - Resultant of the achievement of stated goals, and given feedback

Was the involvement effortless?
Was there transcendence in time?

Indicators that a student is not in flow
- Frustration
- Anxiety
- Off Task behavior

APPENDIX F

Exploring Musical Theory through Investigation of the History, Properties and Construction of the Steel Drum

Wednesday, June 27, 2007
Virden Center
University of Delaware Marine Sciences Center
Lewes, Delaware

AGENDA

8:00-9:00am	**Breakfast**
9:00 -10:30 p.m.	**Rehearsal of music, review of chord progressions. Discussion of readings. Assign readings.**
10:30- 10:45	**Break**
10:45 -12:00	**View videos.**
12:00-1:00	**Lunch**
1:00 – 2:30	**Individual practice, beach, walk, reflect**
2:30 – 4:00 pm	**Learning to play in the Engine Room**
4:00 – 5:30	**Rehearsal of music, review of chord progressions.**
5:30- 6:30	**Dinner**
7:30 – 9:30	**Rehearsal of music**

Professional Development Cluster