

2016

# Flow and Performance Competency in Modern and Ballet Dancers

Ella Wilson  
*Scripps College*

---

## Recommended Citation

Wilson, Ella, "Flow and Performance Competency in Modern and Ballet Dancers" (2016). *Scripps Senior Theses*. Paper 725.  
[http://scholarship.claremont.edu/scripps\\_theses/725](http://scholarship.claremont.edu/scripps_theses/725)

This Open Access Senior Thesis is brought to you for free and open access by the Scripps Student Scholarship at Scholarship @ Claremont. It has been accepted for inclusion in Scripps Senior Theses by an authorized administrator of Scholarship @ Claremont. For more information, please contact [scholarship@cuc.claremont.edu](mailto:scholarship@cuc.claremont.edu).

**FLOW AND PERFORMANCE COMPETENCY IN  
MODERN AND BALLET DANCERS**

by

**ELLA S. WILSON**

**SUBMITTED TO SCRIPPS COLEGE IN PARTIAL FULFILLMENT  
OF THE DEGREE OF BACHELOR OF ARTS**

**PROFESSOR STACEY WOOD  
PROFESSOR MICHAEL SPEZIO**

**DECEMBER 11<sup>TH</sup>, 2015**

### Abstract

A qualitative investigation is proposed to examine flow experiences in professional ballet modern dancers in order to understand the nature of this psychological experience. It is not well understood where and when professional dancers experience flow, and whether or not their subjective experience is correlated to what an audience evaluates in a dancer's performance. The psychological state of flow has been studied extensively within sports psychology since Mihaly Csikszentmihalyi first published his work on the theory of flow in the mid 1970s. The nine dimensions of flow—balances of skills and challenges, merging of action and awareness, clear goals, unambiguous feedback, complete focus, paradox of control, loss of self-consciousness, transformation of time, and autotelic experience—have been reported by professional dancers in the past literature. The study of performance quality and subjective experience of the dancer has not been studied within the dance movement analysis literature. This is an important topic to research to further understand what factors facilitate or debilitate a professional dancer's well-being. This study aims to determine any facilitating and mediating factors of flow experiences in professional ballet and modern dancers. Additionally, it aims to address whether a dancer's performance is perceived as being competent, and if the dancer's experiences of the performance matches the levels of competency. Two hundred professional ballet and modern dancers (100M, 100F) will participate in this study. These participants will be recruited from the professional companies based in the United States. This study will also analyze the relationship that the reported flow scores have with evaluations of performance competency. Each participant will be interviewed to determine their personal experiences of flow, if they have had any. Following the interview, they will

complete the Activity Experience Scale – 2 (DFS-2). A researcher will observe a rehearsal and a performance to evaluate each participant using the Performance Competency Evaluation Measure. Following the rehearsal or performance, the participant will complete the Event Experience Scale-2 (FSS-2). The mean scores from the FSS-2 will be analyzed using a two-by-two factorial ANOVA to determine if modern dancers experience significantly higher levels of flow in performance with no effect across gender. The effects of performance competency evaluations between the style of dance and mean flow scores were examined using mediation analysis and Sobel's test. Additionally, it is predicted that the number of hours of rehearsal and performances will be established as a mediating factor between the style of dance and mean flow scores. The same methodology will be used for mediation analysis to test this hypothesis.

*Keywords:* flow, optimal experience, performance competency, modern dance, ballet

## Table of Contents

1. Introduction .....	5
Overview of Positive Psychology and Flow .....	6
2. Literature Review .....	14
Flow in Our Daily Lives .....	14
Flow and Sports Psychology .....	14
Flow and Dance .....	16
Performance Competency .....	21
Overview of the Study .....	22
Hypotheses .....	23
3. Proposed Method .....	24
Participants .....	24
Materials .....	25
Procedure .....	28
Ethics .....	29
4. Proposed Results .....	31
5. Discussion .....	41
6. References .....	43
7. Appendix .....	49

### **Introduction**

While dancing on a stage a ballerina doesn't necessarily have to think about her next steps, they sometimes just happen seamlessly as a result of muscle memory and being 'in the zone.' While being 'in the zone,' her level of absorption in executing the movements to perfection merges her awareness and her actions so that she feels in control of everything without overthinking her next pirouette. Although she may have just performed a ten-minute pas de deux with her partner, when she exits the stage it seems only seconds have passed. This is called experiencing flow, or having an optimal experience. Optimal experiences have been studied in many contexts surrounding physical exercise and sports psychology (Jackson & Kimiecik 2008; Jackson & Wrigley, 2004; Kimiecik & Jackson, 2002; Marsh & Jackson, 1999). Most research in the realm of sports psychology is focused on the relationship between motivation and elite athlete to better understand under what conditions they will have peak performances. Levine (2006) studied the relationship between flow and motivation in a sample of professional male ballet dancers. There have been several other studies of mediating and moderating factors in relation to dancers experience of flow (Hefferon & Ollis, 2004; Thomson & Jaque, 2011; Thomson & Jaque, 2012a Thomson & Jaque, 2012b; Zoller, 2015). There is no literature on the differences in reports of amount of flow across genres or styles of dance. The current study seeks to determine whether or not professional ballet and modern dancers experience flow more during performances or rehearsals. Further, it will explore the interaction of dance style with experiences of flow and evaluation of the performance competency.

### **Overview of Positive Psychology and Flow**

Positive psychology can be seen as relatively new to the evolution of psychology and is related to several philosophical traditions. (Lambert, Passmore, & Holder, 2015). Csikszentmihalyi helped found the movement to study positive psychology but thought that maybe only a few psychologists would be interested in such a “minor theme,” (Csikszentmihalyi, 2009). Unbeknownst to him at the time, the study of positive psychology has now shown ways of improving our satisfaction of our daily lives. It studies satisfaction, contentment, hope, optimism, flow and happiness (Seligman & Csikszentmihalyi, 2000). Positive psychology provides psychologists with indirect and direct approaches to help others have better lives and feel better about their lives (Csikszentmihalyi, 2009). Csikszentmihalyi found that there are two factors that predicted a happy and healthy adulthood nine years after high-school graduation: the amount of challenges they report having during their teenage years and the amount of skills they report having in life (Csikszentmihalyi, 2009). The only other predictor found was cooperation. In the study a watch beeped during certain intervals throughout the day and the teenagers were asked to report whether they felt cooperative or competitive on a ten point Likert scale (Csikszentmihalyi, 2009). The reported amounts of cooperation and levels of feeling challenged determined success in life. Csikszentmihalyi interpreted these results to mean that these children found challenging activities to be enjoyable. Hoped to provide several other ways for children to find pleasure in the challenges of their daily lives to further their development.

Csikszentmihalyi (1975) first published *Beyond Boredom and Anxiety*, as the beginnings of his theory of flow. Csikszentmihalyi (1990) later published *Flow: The*

*psychology of optimal experience* in 1990 where he summarizes his research on optimal experiences and explains in depth the factors and dimensions of flow. By definition, flow is a state of optimal experience when one is completely absorbed in a task, optimal functioning occurs, and when the task is intrinsically rewarding (Csikszentmihalyi, 1990). The psychological concept of flow does not denote any cognitive processes. It is a conceptual tag for these experiences that individuals find to be intrinsically rewarding and extremely enjoyable. Optimal experience and flow are often used interchangeably (Fullagar & Kelloway, 2009). Csikszentmihalyi (1990) states that flow occurs when there is an order in consciousness (psychic negentropy) and there is no disorder in consciousness (psychic entropy). When there is an order in consciousness the stream of information entering one's awareness is congruent to one's goals (Csikszentmihalyi, 1990). This depicts an experience when someone is completely absorbed by what they are doing; they have no concern about anything else.

The organization of the self can be said to be more complex after a flow experience (Csikszentmihalyi, 1990). Personal growth occurs when the self becomes increasingly complex. The theory of flow can be categorized as a humanistic theory; it is a eudaimonic psychological theory of well-being (Lambert et al., 2015). Huta, Park, and Seligman (2006) and Waterman (2007) define eudaimonic as the way of life when an individual strives for personal growth through developing their talents and virtues (as cited in Lambert et al., 2015). By using introspection to discover when as humans we have optimal experiences, we can improve our lives by including more of the activities we experience flow into our daily routines. If a professional dancer is able to determine that the amount of rehearsal they have can increase their experiences of flow, they may



take this into consideration to improve their satisfaction. In turn this may increase their overall happiness during their careers and to positively increase their mental health.

Determining what constitutes this positive mental state started with Csikszentmihalyi's (1975) initial research in determining what brings joy to one's life by interviewing dancers, chess players, rock climbers, surgeons, athletes and musicians. Csikszentmihalyi coined the term flow after finding it as a common description amongst the respondents. These interviews were analyzed using hermeneutic processes. Patton (1990) published a method of evaluating qualitative interviews such as these. The method has been adapted for use in sports psychology by several researchers (e.g., Gould, Eklund, & Jackson in press; Gould et al., 1992; Weiss, Barber, Sisley, & Ebbeck, 1991, as cited in Jackson, 1992). The analysis involves a two-step procedure of identifying raw themes from the transcripts of the interviews, and then organizing them into themes using inductive and deductive procedures.

According to Csikszentmihalyi flow occurs when an individual perceives the challenge of the activity as being high and also that when is a balance with their skill level (Csikszentmihalyi, 1990). If an individual's skills are higher than the level of the perceived challenge, boredom will occur; if one's skills are low but the challenge is at a higher level, anxiety will occur; when there is a balance of skills and the level of challenge in an activity flow will occur (Csikszentmihalyi, 1975). Dancers are constantly being challenged by new choreography and it may take them several weeks of rehearsal before they achieve the necessary skills. Having a balance of skills and challenges is only one of the nine characteristics of flow.

As noted above, the activity has to have a balance of skills and challenges for an individual to achieve flow. Activities that are goal oriented and that have specific rules usually facilitate flow more than non-goal oriented activities (Csikszentmihalyi, 1990). When both the challenges presented in an activity and the skills needed to complete it are at a high threshold, an individual is more likely to enjoy the activity, receive a self-esteem boost and learn new skills (Csikszentmihalyi & LeFevre, 1989). Each movement a dancer executes is a specific goal they must achieve during a performance. Even portraying a character or displaying emotion could be seen as a goal for a dancer performing on stage. However, one study has shown that experiencing flow can occur when there is an imbalance of challenges and skills (Løvoll & Vittersø, 2014). Csikszentmihalyi (1990) makes an important distinction that these “activities” and “skills” need not be physical ones; they can also be mental activities, like reading or social activities like having conversations with others.

Having a merging of action and awareness is the second characteristic flow. Individuals describe being in flow when they are completely absorbed by an activity (Csikszentmihalyi, 1990). This merging of action and awareness focuses your attention on the activity at hand so that no other thoughts can enter your consciousness and disrupt it. Csikszentmihalyi (1990) quotes a dancer from his original research in interviewing professionals who experience flow, who explains what it is like to be in flow during a performance, “Your concentration is very complete. Your mind isn’t wandering, you are not thinking of something else; you are totally involved in what you are doing... Your energy is flowing very smoothly...” (p. 53). When one’s awareness and action merge it

creates a seamless, almost automatic, functioning of the actions they are doing; the task has become effortless.

In order to have an optimal experience the activity must have clear goals and unambiguous feedback, the third and fourth characteristics. When the goals of an activity are clear one can assess whether they have the skills to meet the challenge that is presented. Once you complete the activity, feedback should immediately follow. Csikszentmihalyi (1990) notes that intention of what one is trying to accomplish is important in creative activities. He states that having internalized criteria for what is “good” and “bad” helps the artists have guidelines in order to experience flow (Csikszentmihalyi, 1990). Dancers receive feedback on whether they have completed their goals from several different mechanisms: their movements, the music, and other dancers on stage (Hefferon & Ollis, 2006); they also receive feedback from their instructors and audience members.

Having complete focus on the task, or intense concentration is the fifth element of flow. All of the other troubling thoughts one might have are kept in abeyance. This means that psychic entropy can occur, facilitating flow. Csikszentmihalyi (1990) reports a sensation of intense concentration felt by a dancer in the quote: “Dance is like therapy. If I am troubled about something, I leave it out of the door as I go in [the dance studio],” (p. 59). The activity of professional dancing requires so much intense concentration there is little room for disorganized consciousness.

The sixth characteristic is the paradox of control. Csikszentmihalyi (1990) uses an example from a dancer to explain this element: “A strong relaxation and calmness comes over me. I have no worries of failure. What a powerful and warm feeling it is! I want to

expand, to hug the world. I feel enormous power to effect something of grace and beauty,” (p. 59-60). A paradox of control, as exemplified by this report, refers to the lack of a sense of worry about losing one’s control in a situation. Although a dancer may fall and suffer an injury, it is the possibility that they are in total control that eases their mind during an optimal experience.

Having a loss of self-consciousness is the seventh characteristic of flow. Because an individual is so absorbed and concentrated on the task at hand, there is no room for self-scrutiny. If an individual allows for negative thoughts about themselves to enter their consciousness there will be psychic negentropy and flow will not be achieved. The self is unthreatened during flow because there are rules, clear goals, and a balance of skills and challenges (Csikszentmihalyi, 1990). Csikszentmihalyi (1990) states, “So the loss of self-consciousness does not involve a loss of self, and certainly not a loss of consciousness, but rather, only a loss of consciousness of the self,” (p. 64). Giving up self-consciousness enables self-growth in these enjoyable flow activities (Csikszentmihalyi, 1990). When a dancer performs, he or she may not be aware of the thousands of eyes watching their every move. They lose their self-consciousness once they are ‘in the zone’ on stage.

An essential quality of flow pertaining to sports psychology, the eighth element of flow, is a transformation of time. Jackson and Marsh (1996) added an additional dimension, the transformation of time, as essential to sports related contexts of flow. It is one of the most commonly reported characteristics with descriptions such as time passing very fast, or very slow. The individual’s sense of time becomes distorted. Csikszentmihalyi (1990) uses the example of a dancer executing a difficult turn; although the action of the turn is only a few seconds long, it seems to take an eternity as time

stretches out. The external duration we usually measure time with—seconds, minutes, and hours—is no longer relevant due to the rhythm that is dictated by the activity (Csikszentmihalyi, 1990). An individual experiences flow only when they are completely involved in the activity; they do not worry about the external factors of time. It is predicted that dancers will report higher levels of flow during performances due to the nature of flow. The researcher predicts that the dancer experiencing such intense enjoyment during their performance will facilitate flow more often than during rehearsals.

The final key element of flow is that the activities that produce flow experiences are ends in themselves. Csikszentmihalyi (1990) describes this as being an autotelic experience; derived from the Greek words, *auto* that means the self, and *telos* meaning the goal. These activities are intrinsically rewarding, and do not involve external rewards. Dance, as an art form, has no individual awards present to the performers after they have come off stage; it is more about the collective effort of the group.

There are several different styles of dance and varied situational contexts as well. For the purpose of this study, two professional performance techniques, ballet and modern have been selected. These two styles of dance require a level of technique, and have specific origins where their technique began. A lineage can be used to describe how a technique is passed down from one instructor to the next or from one school of dance. In ballet, techniques can be considered more or less “classical” than others due to which technique is being used (K. White, 2010). There are several different ballet techniques such as: Royal Academy of Dance, Balanchine, French, Vaganova, Bournonville, Checchetti, and Italian (K. White, 2010). Each of these techniques, or schools has a

geographical origin. During the 20<sup>th</sup> century classical ballet was revered as a high art, but at the turn of the twenty-first century the masters of these techniques were gone and there was a focus on contemporary choreography in ballet (Homans, 2010). Some of the companies that emerged from the twentieth century that continue the legacy of classical ballet today are: American Ballet Theatre, New York City Ballet, Pacific Northwest Ballet and San Francisco Ballet. As the artistic directors of these companies have rotated throughout time, more contemporary choreography has been included in their repertory.

As a result of the classical ballet movement in the beginnings of the twentieth century, modern dance was born. Similarly to ballet, modern dance also has several techniques that descend from lineages of different instructors. In comparison, modern dance requires more floor work—moving on the floor—and upper body movement than ballet (White, Philpot, Green, & Bembien, 2004). Other differences include training regimen and movement qualities (White et al., 2004). In contrast to ballet, which often focuses on training and sculpting a body to look a very specific way to carry out the movements, modern dance has a stronger focus on creativeness and expressiveness of movement (Lussier-Ley & Durand-Bush, 2009). Within personality research, modern/contemporary dancers have found to be less conscientious, and more open to experiences than ballet or jazz dancers (Fink & Woschnjak, 2011). Ballet dancers also have scored higher in stereotypes such as, “Fear of Negative Evaluation and Personal Need for Structure,” than modern dancers (Clabaugh & Morling, 2004). In sum, there are differences between these two genres of dance, and it will be examined in the study whether these differences have an effect on where and when dancers experience flow.

## **Literature Review**

### **Flow in Our Daily Lives**

One environment where optimal experiences have been studied the most is within different occupational settings. Understanding what as individuals we enjoying doing can help us improve our lives at work and our overall well-being. Csikszentmihalyi (1990) suggests that increasing the number of optimal experiences we have per day increases our happiness and level of success. Flow has been found to be experience in all strata of occupations (Ramsland, 1989). Flow occurs especially when one finds their tasks at work as meaningful, or intrinsically rewarding (Ramsland, 1989). It is important to note that experiencing flow has been found in both work and leisure settings but are more likely to occur during work-related tasks (Csikszentmihalyi & LeFevre, 1989; Fullagar & Kelloway, 2009). Fullagar and Kelloway (2009) argue these findings are caused by the fact that precursors of flow—clear goals, feedback, balancing challenges and skills—are found more often in work activities than leisure activities.

### **Flow and Sports Psychology**

In recent years, sports psychology shifted its focus onto the positive psychology aspects rather than the negative factors—such as anxiety or stress—to determine what factors facilitate peak performances, peak experiences, and optimal experiences (Jackson & Kimiecik, 2008; Kimiecik & Jackson, 2002). Peak performance is generally defined as being superior functioning of an individual's probable performance capacity (Jackson & Kimiecik, 2008). It is especially seen in athletes who compete professionally when they perform better than expected in an event or activity than seen during their training. In

contrast peak experience refers to Maslow's (1968) research on where we have our happiest moments in life (as cited in Jackson & Kimiecik, 2008). These experiences are said to be transcendent or mystical (Rich, 2013). In a sports psychology context optimal experience can be used as an umbrella term for the positive states an athlete may experience (Jackson & Kimiecik, 2008). In some research, flow has even replaced the word enjoyment in order to address limitations of the definition of enjoyment (Kimiecik & Harris, 1996). Research on flow can provide sports psychologists with a deeper understanding how and when athletes will perform their best. Schoch and Schöler (2012) found that athletes with different motives (implicit and explicit) that were incongruent reported impaired flow experiences. This gives further proof toward the autotelic experience element of flow.

There is little literature on sports research specifically on dancers, therefore for the purpose of this study sports research will be utilized primarily. Jackson (1992) was the first study of elite athletes that have a connection to dance. The study included 16 national champion figure skaters using an interpretive qualitative approach to determine the factors that helped them achieve flow. Elite figure skaters were chosen for this study for their level of experience due to numerous years of training and competing. Professional athletes are more likely to encounter situations where there is a high level of skill and challenges. Jackson (1992) interviewed the skaters individually instead of using the Experience Sampling Method because they found it to be intrusive in nature given the performance aspect of figure skaters. Jackson (1992) adapted the qualitative methods Patton (1990) created to analyze interview data. This process will be used for this study as well.



In a response to Jackson's research, Csikszentmihalyi (1992) responded directly in saying, "The dimensions of flow her figure skaters report are vivid and concrete, and they should be useful to coaches and athletes everywhere," (p. 182). They used a hermeneutic procedure to process and analyze the data from the interviews. A majority 81% of the skaters reported not experiencing flow very often and stated reasons such as: the difficulty to have everything be on point, not feeling in sync with their partners, and that they only experienced it during the largest competitions (Jackson, 1992). They also stated the low reports of flow could be due to a methodological issue of the wording of the questions during the interview being preempted toward their most memorable performance (Jackson, 1992). The factors that helped the skaters achieve flow that were found are: physical readiness; positive mental attitude; positive pre-competitive and competitive affect; maintaining appropriate focus; and unity with partner. The disruptive factors that were found were: physical problems or mistakes; inability to maintain focus; negative mental attitude; and lack of audience response. These are all factors that relate to performing in dance, and should be further researched in professional dance.

### **Flow and Dance**

In comparison to sports, professional dance is an activity that is physically demanding, requires intense training, is creative, and involves performing without the aspect of the goal being a competition to win or be the best in the world. The physiological difference of ballet and modern dancers has been studied in an attempt to correlate technique and overall physical health of dancers (White et al., 2004); somatic and demographic variables amongst these two subgroups have also been an interest in

dance research (Spurgeon, Anderson, & Keith, 1987); personality types have also been a topic of interest within dance research (Biasi, Bonaiuto, Giannini, & Chiappero, 1999; Fink & Woschnjak, 2011; Salapa, 2000); and there has been little research on the connection between psychology and methods of pedagogy (Klockare, Gustafson, & Nordin-Bates, 2011).

Investigations of subjective experiences of dancers have not been researched as widely as sports psychology. Quested, Duda, Ntoumanis, and Maxwell (2013) note that often dancers say they've either had a "good day" or a "bad day," meaning that they felt their performance or execution was on-point, or off somehow. This variability from day to day may have an implication on the overall well-being and mental health of dancers and should be researched further. A study, conducted by Quested et al. (2013), found that dancer's, "daily perceptions of autonomy support positively predicted changes in positive affect," from the beginning to the end of a rehearsal (p.591). In the context of performance, the findings were not the same; levels of autonomy support did not show significance in predicting changes in positive affect either (Quested et al., 2013). This could be explained by the fact that during rehearsal time dancers have more of a sense of camaraderie, while during performances they are focusing more on the individual level. Their other findings included that the social environment in ballet and contemporary technique classes were equally autonomy supportive (Quested et al., 2013). There has been very little research on dancer's subjective states during rehearsal and performance, but it is important to investigate these topics to have a further understanding of how to improve dancer's psychological well-being in their vocational careers.

Panebianco-Warrens (2014) states that, “being able to achieve flow in high-skill investment activities that typically involve commitment, discipline, sacrifice and responsibility (such as ballet, sport and music) can elevate an experience to higher levels of enjoyment and achievement,” (p. 59). Hefferon and Ollis (2006) argue that since dance is a mimicry activity that allows dancers to escape reality and take on an identity of a character, it should fall under Csikszentmihalyi’s definition of flow-enhancing activities. Csikszentmihalyi (1990) defines a flow-enhancing activity as one that “provided a sense of discovery, a creative feeling of transporting the person into a new reality,” (p. 74). It is no wonder then why flow is reported in high levels from professional dancers; the findings of this research will be discussed further below (Levine, 2006; Panebianco-Warrens, 2014; Thomson & Jaque, 2012a).

Hefferon and Ollis (2006) studied the characteristics of flow as reported by male and female professional dancers who specialized in contemporary (modern), jazz, ballet, Irish, and Canadian dance. Their results showed that dancers experience three dimensions of flow the most: balance of challenges and skills, complete focus, and autotelic experience. Factors that facilitated or inhibited flow experiences were music and the choreography, their pre-performance routines, level of confidence, relationships with others, their costumes and makeup, and the stage setting. This study however used a small sample of dancers who participated in several varying genres, which adds another degree of variance.

A dancer’s aesthetic response to the music can determine their ability to achieve flow; the type of choreography is not the only factor that has been found to facilitate flow. Panebianco-Warrens (2014) studied the relationship that professional ballet dancers

had with music. They found that some characteristics of flow are more prominent in professional ballet dancer's reports and more representative of their experiences. In order of prominence they are: "merging of action and awareness; autotelic experience; loss of self-consciousness; sense of control; time transformation; challenge-skill balance; total concentration; unambiguous feedback; and clear goals," (Panebianco-Warrens, 2014). The dancers also reported that when they disliked the music or genre of music it could disrupt or inhibit their flow experiences. These findings further prove that flow is a common experience amongst professional dancers, although this study only sampled ballet dancers from two South African ballet companies within a performance context and did not attempt to find differences between genres of dance.

Dancers gage their execution of their performances on a basis of perfectionism. Nordin-Bates, Cumming, Aways, and Sharp (2011) found that in a cluster analysis 40.59% of their sample of elite ballet and contemporary dancers reported perfectionistic tendencies and had equal representations across both groups ballet and contemporary dancers. The relationship between perfectionism and motivational climates has been studied in young dancers (Nordin-Bates, Hill, Cumming, Aujla, and Redding, 2014). In a climate that has high levels of expected perfectionism, the competition in the job market can be difficult for dancers to attain work. Some of these perfectionist tendencies may inhibit a dancer's ability to achieve experiencing flow during their careers. Further research must investigate whether perfectionism is a moderating factor for flow.

Levine (2006) studied why male ballet dancers stay motivated in their careers as professional dancers when typically they don't get paid well, and the job market can be very competitive. Levine (2006) found that every male ballet dancer in his sample

experienced flow. While 75% of his sample reported frequently experiencing flow, the other 25% reported always experiencing flow when dancing. It was also shown that the male ballet dancers were more intrinsically motivated than extrinsically.

Zoller (2015) studied the relationship between flow triggers and the choreographic process and found that tactile interaction with props, the use of eye contact, the closeness of the audience, physical contact with other dancers, the level of completion of movements, and personal investment in the piece all were triggers that influenced the choreographic process.

Thomson & Jaque (2012b) studied the relationship between dissociation and flow. Dissociation is another state of consciousness and contains many of the same elements of flow and can be positive or negative. Common activities that involve dissociation include: fantasy, daydreaming, and night dreaming (Thomson & Jaque, 2012b). Thomson & Jaque's (2012b) findings suggest that dance is a positive and intrinsically rewarding experience. They also found that dissociation operates differently from flow with respect to mental processes. In their study they found a high median score on global flow within their sample population of ballet and modern dancers (Thomson & Jaque, 2012b).

Thomson and Jaque (2012b) noted bias due to their homogeneous sample as a potential limitation of their research, as well as the relatively small sample size.

A study investigating anxiety and its relationship to flow and other factors found that 75.3% of dancers had high autotelic flow experiences, and 35% of dancers experienced global dispositional flow (Thomson & Jaque, 2012a). They also hypothesized that perhaps the dancers—23.3% of who had clinical levels of anxiety—used anxiety as a facilitating factor in their performances (Thomson & Jaque, 2012a).

Thomson and Jaque (2012a) listed bias and the lack of analysis between novice and advanced group mean differences as limiting factors of their research.

Thomson and Jaque (2011) hypothesized that there were be greater reports of flow during performance than rehearsals. They studied the relationship between flow experiences and ambulatory measurements of performer's autonomic nervous system. Their sample of performers included six dancers and eight other performing artists. Amongst their entire sample they found that the participant's "...state flow responses ranged from agree to strongly agree on all flow scales," during performance using the Dispositional Flow Scale-2 (Thomson & Jaque, 2011). This study is limited to a small sample size, but gives some insight into how flow differs during performance and rehearsal contexts.

### **Performance Competency**

In the past literature, measures of motor components have not been found to positive predictors of qualitative competency. Previous measures have been proposed, such as the Aesthetic Competence Evaluation (ACE), which measures technique, space, time, energy (in terms of Laban Movement Analysis), phrasing, and presence (Krasnow & Chatfield, 2009). Researchers in the field generally have felt that previous measures have been inadequate for qualitatively analyzing dance (Krasnow & Chatfield, 2009).

Irmgard Bartenieff is regarded as the first dance analyst who created the clearest description of dance analysis based off of Rudolf Laban's Effort-Shape movement analysis system. Laban's system measures movement in terms of the effort, space, shape and actions of the body parts (Krasnow & Chatfield, 2009). Effort describes the dynamics

of the movement in terms of flow (bound or free), space (direct or indirect), and weight (light or strong) (Dell, 1997). This model of describing dance movement in qualities of movement was a basis for elements of the PCEM (Krasnow & Chatfield, 2009). The qualitative elements of dance have been defined as being: movement flow, rhythmic precision, kinesthetic communication, ranges of expression, spatial integrity, and individuality (Krasnow & Chatfield, 2009). However, dance technique has a strong focus on the physical component of the art form. Such physical characteristics are: height of jumps, endurance, degree of turnout, and other dance specific skills (Krasnow & Chatfield, 2009). There is a large gap in the literature regarding studies that examine the effects of technical training in dance and the outcomes of performance quality.

### **Overview of the Study**

The purpose of this study is to determine whether male and female professional dancers in ballet and modern experience flow in rehearsal and performance settings. The second aim of the study is to determine if there is a correlational relationship between high-levels of flow and either genre of dance. Further, this study aims to test if there is a significant difference in the number of reports of flow experiences between modern and ballet. Lastly, it will be examined to see if performance competency mediates the relationship between style of dance and flow; the number of hours of rehearsal or performance will also be tested to determine mediation.

Researching and analyzing qualitative data on subjective experiences such as flow is difficult, but has been done. There is very little data on the relationship between different styles of dance and the difference in amount of flow experiences between

genres. Dancers were selected because of the similarities in training and performance they have in relation to athletes. Ballet and modern dance were chosen as the two styles to be studied due to their differences in pedagogy and qualities of movement.

Professional dancers within the genres of ballet and modern dance were selected for this study due to their high level of skill that they have attained after numerous years of training. Male and female participants from United States based professional ballet and modern companies will take part in this study.

Due to the dynamic nature of dance, the Experience Sampling Measure will not be used. This method is known to interrupt individuals during their daily lives to report whether or not they are experiencing flow. Instead, other self-report measures will be used. Experimenters will conduct open-ended interviews and administer flow scales. In hopes of further understanding mediating and moderating factors of flow in dance, there will be questions in the interviews to help identify and evince these factors.

### **Hypotheses**

1. The mean scores on the rehearsal FSS-2, from both ballet and modern dancers, will be lower than the mean scores on the performance FSS-2.
2. Modern dancers will experience significantly higher levels of flow in performances than ballet dancers, with no interaction between genders.
3. Modern dancers will experience significantly higher levels of flow in rehearsals than ballet dancers, with no interaction between genders.
4. Evaluation of competency during a rehearsal will be a mediating factor between style of dance and level of flow.



5. Evaluation of competency during a performance will be a mediating factor between style of dance and level of flow.
6. The number of hours of rehearsal per month will be a mediating factor between style of dance and level of flow.
7. The number of hours of performance per month will be a mediating factor between style of dance and level of flow.

### **Proposed Method**

#### **Participants**

One hundred male dancers and 100 female dancers will be recruited to participate in this study from the following professional ballet or modern dance companies: Pacific Northwest Ballet Company, San Francisco Ballet Company, New York City Ballet, American Ballet Theater, Alvin Ailey American Dance Theater, Paul Taylor Dance Company, Mark Morris Dance Company, and Martha Graham Dance Company. A power analysis was run and for a medium to large effect size the sample size should fall between 130-200 participants. The predicted age range is 18 to 44 years old ( $M = 27$ ); this is a typical age range of dance companies. All participants must have a minimum of five years of training and a minimum of one year of being employed in a professional dance company. There will be no restrictions for gender, race, or ethnicity for participants. The participants will be recruited voluntarily by contacting the director or manager of each company to gain access to company member's contact information to contact them via email offering them the opportunity to take part in the study. Each participant will be compensated with \$10 for his or her time.

## Materials

**Interview Measures of Flow.** The construct of optimal experience, or flow, will first be measured using a semi-structured interview with an open-ended format to gain in-depth qualitative information about the main factors of flow that dancers report, what contexts they experience flow in, and to determine any mediating or moderating factors. First, the interviewer will ask for a description of each dancer's history performing and training in their style of dance to help them feel comfortable speaking about their experiences. Then, the interviewer will give them a clear and concise definition of flow so that they can reflect on their experiences to determine whether or not they have experienced flow before. Questions will be framed toward discovering their experiences of flow, or flow like states. The questions asked would be: (a) Describe an experience of flow that you have had during your career as a dancer. (b) What factors facilitate these experiences you've had? (c) What factors might prevent you from experiencing flow while performing? See Appendix A. The interviewer will use probing when necessary to elaborate on their experiences when it appears that they could provide more details regarding their experience, or ask a clarifying question when they respond with more general terms or in ways the interviewer doesn't understand. The interviews will be analyzed using the adapted methods Patton (1990) created for qualitative data, used by Jackson (1992). First, summary abstracts of each dancer's interviews will be developed after reading their transcripts several times. During this step, raw data themes will also be collected to characterize each dancer's responses to each question. Using an inductive procedure, the general themes will be collected from the raw data themes. The research

will then re-read the transcripts to insure that all data themes are present. The results of the inductive process will be checked for validity using a deductive procedure.

**Scale Measures of Mlow.** *Activity Experience Scale-2 (DFS-2) and Event Experience Scale (FSS-2).* Jackson and Eklund (2004) developed the DFS-2 and FSS-2 that assesses the construct of flow as dispositional and state flow. They are 36-item instruments that are self-report measures. The DFS-2 is administered to have a general assessment of the tendency an individual has to experience flow during a specific activity. The items assess the general tendency to experience the nine characteristics of flow. It includes questions such as, “I am challenged, but I believe my skills will allow me to meet the challenge,” and “I am not concerned with what others may be thinking of me.” See Appendix B. The FSS-2 is administered within one hour of a performance of an activity to determine the level of flow experience during that specific performance. Questions include, “I could tell by the way I was performing how well I was doing,” and “I was completely focused on the task at hand.” See Appendix C.

A 5-point Likert scale (1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, 5 = Always) is used for both scales. The mean scores of the DFS-2 and the FSS-2 are calculated for each scale over the nine dimensions of flow (which have four items each in the scale): Challenge-Skill Balance (CSB); Merging of Action and Awareness (MAA); Clear Goals (CG); Unambiguous Feedback (UF); Concentration on the Task at Hand (CTAH); Sense of Control (SC); Loss of Self- Consciousness (LSC); Transformation of Time (TT); and Autotelic Experience (AE). The scores can be divided into *low agreement* (mean scores ranging between 1-2), *moderate level* (mean scores ranging between 2-4), and *high level* (mean scores ranging between 4-5). A low agreement

suggests that the person did not experience a “flow-like” state during the activity, while moderate level indicates some level of flow experience. Lastly, high level shows that the respondent frequently experienced flow or endorsed frequent flow during the activity. These scales have been tested for adequate reliability, internal consistency, and construct validity and have been found to be excellent measures of flow experiences (Jackson & Eklund, 2004).

**Competency.** *Performance Competence Evaluation Measure (PCEM).* Krasnow and Chatfield (2009) developed the PCEM to have a tool that evaluates the qualitative components of dance performance. The system was created to distinguish levels of dancers who have some degree of training, not non-dancers. The measure evaluates four categories of movement: full body involvement, body integration and connectedness, articulation of joints and body segments, and movement skills in dance. Each of these categories is broken down further into subcategories. Within full body involvement there is axial movement, locomotor movement, and limb energy. The category of body integration and connectedness is subdivided into spine articulation, central energy, and the relationship of body segments. Next, articulation of joints and body segments is divided into the subcategories of activity of lower limbs, and activity of upper limbs. Lastly, the category of movement skills in dance is broken down to include direction changes, levels, speeds, dynamics, and balancing. For scoring purposes, levels of degree of dance training were developed ranging from level I through level III. A level I dancer in each of the four categories can be described as someone with low skills and poor awareness, while a level III dancer on the spectrum would equate to someone with

excellent and advanced technique and heightened body awareness (Krasnow & Chatfield, 2009).

A judge uses the Guide and Score Sheet to evaluate each of the four categories and score the dancer based off of the descriptions of the level I through level III qualifications. See Appendix D. The score sheet is given to the judge and a score is indicated on the five items (overall proficiency rating, full body involvement, body integration and connectedness, articulation of body segments, and movement skills) on a 3-point Likert scale. See Appendix E. These scores will be averaged to report one mean performance competency score.

The PCEM has been tested for validity and reliability. The intra-rater reliability was strong with a range of coefficients of .93 to .99 (Krasnow & Chatfield, 2009). The inter-rater reliability evaluation showed strong reliability as well with Pearson's coefficients ranging from .82 to .94 (Krasnow & Chatfield, 2009).

**Demographics.** A demographic questionnaire will be administered to collect the participant's age and gender. It will also survey the number of years each participant has been dancing professionally, how many hours of rehearsal he or she has per month, and how many hours of performing he or she has per month.

## **Procedure**

This study will be reviewed and approved by the Scripps College Institutional Review Board prior to initiation. The study will be conducted in person with the interviewer being present in the field so that the FSS-2 can be administered after a performance and rehearsal. Upon providing consent, the participants will begin the

interview portion of the study. The participants will be asked to assign themselves a random four-digit code that can be used to keep track of all of the data that will be collected throughout the course of the study. This way, their name will not be included on any of the materials collected. Afterwards, the interviewer will administer the DFS-2. The FSS-2 will be completed after a performance and a rehearsal, but no later than one hour after the participant has completed the performance or rehearsal. During these same corresponding performances and rehearsals, the interviewer will evaluate the participant using the PCEM. After the FSS-2 has been administered for both contexts, the interviewer will debrief the participant and compensate them for their time.

### **Ethics**

This study will benefit choreographers, instructors and dancers to learn why and how they enjoy dancing. They may take this knowledge and apply it to their company to increase rehearsal hours or find a better balance between rehearsal hours and performing hours. It may show that some dancers prefer studying and performing certain styles, or which style—between modern and ballet—has higher reports of flow experiences. The participants of this study may benefit from reflecting on their experiences during their career, as well as having knowledge of the psychological optimal experience. This action of reflecting will not aim to bring upon any psychological harm, as the questions will be geared toward the positive experiences they have had throughout their career. This study does not include any level of risk or harm than that which a dancer would experience during their daily lives. The minimal risks they could experience would be minor frustration about the level of success and enjoyment of their dancing career depending on

how satisfied they have been with their career. These are frustrations a dancer may experience on a daily basis; therefore the benefits will outweigh these minimal risks. The participants will only be asked to reflect on positive experiences, bringing no risk to their psyche or well-being. Most companies require their dancers to be non-minors, but the research will ask for voluntary participation only from non-minors. In the case where there are dancers in a company who are below the age of 18 they will not be contacted to ask for voluntary participation in this study. Therefore, the participants will all be above the age of 18, and will not include any protected populations. The researchers will ask for voluntary participation from the professional dancers that they contact.

If the dancer agrees voluntarily, the consent form will clearly explain the goals of the study and the researcher will be present to answer any additional questions. The questions in the demographic questionnaire will not ask any sensitive information. The dancers will be told exactly what the procedure is and what they are to expect. The interview and scales to measure flow will not require any level of deception. Since the researcher observing and measuring the dancer for their performance competency will be present in the studio during rehearsal or performance hall during a performance, the dancer will be made aware of the procedure and not deceived by the fact that they are being evaluated. The information and data that the researchers gather through the interviews, surveys, and performance evaluation will be kept confidential. The data collected cannot be kept anonymous because the dancers must be tracked between their initial interview, the rehearsal setting, and the performance setting. The dancer will be asked during the interview portion of the study to assign them a random four-digit code that will be used to keep track of all of the data that is collected. After all of the data is

transcribed, this code will be the only identifier for the data. The interviewer will be the only one who has access to the recordings of the interviews on the tape recorder. It will remain with the interviewer at all times while the interviewer is traveling and stored in a locked box when they not conducting interviews. The survey data and performance evaluations will be kept with the tape recordings as well. There will be every precaution taken to not have any identifying information influence the researchers or the dancers during the course of this study.

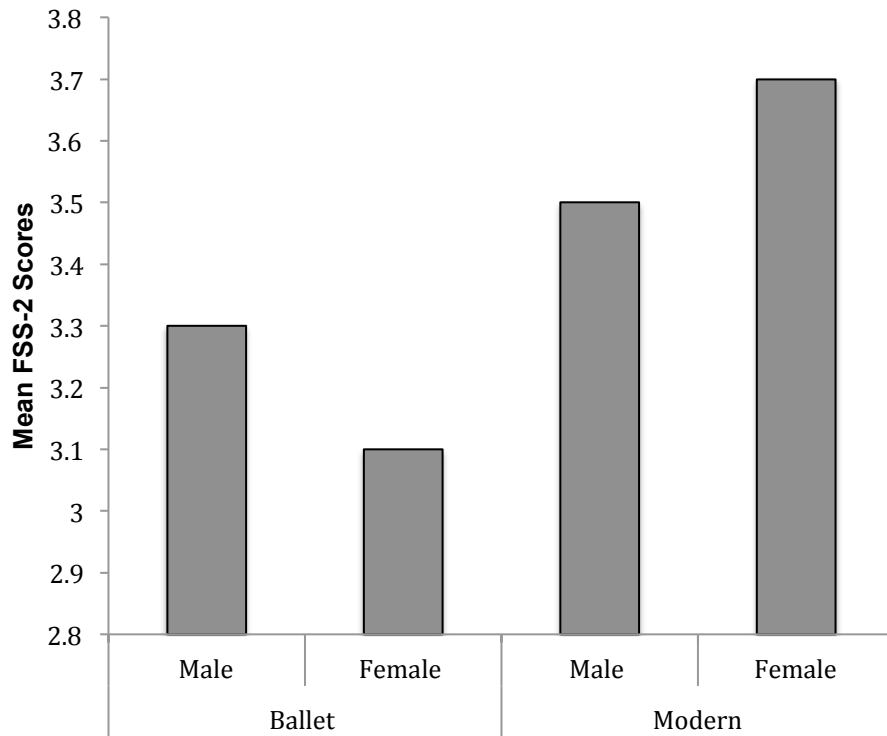
### **Proposed Results**

The researcher predicts that the mean flow scores on the rehearsal FSS-2 will be lower than the mean scores on the performance FSS-2. A paired t-test will be conducted to analyze this hypothesis. It is predicted that the performance FSS-2 mean scores will be significantly higher because during a rehearsal there can be more interruptions to give corrections. The researcher interprets these results to be because if a dancer is in mid-movement experiencing flow, they might be stopped by their artistic director to go over a detail about the movement, which would inhibit the dancer's ability to continue to experience flow.

To further break down this analysis a two-by-two factorial ANOVA will examine whether the mean flow score on the FSS-2 administered after rehearsals would be different between styles of dance with no interaction with gender. The researcher predicts that there will be a main effect between styles of dance, with modern dancers reporting significantly higher on levels of flow following a rehearsal. See Figure 1. The researchers predict that these results will be significant based off the results from the past

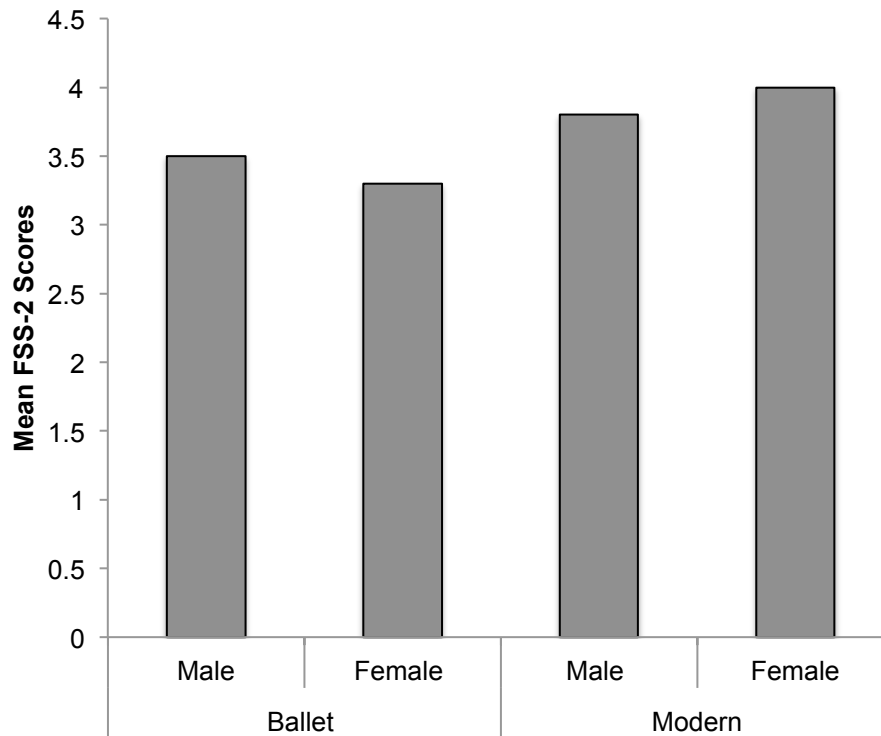


literature. Previous studies have shown that high levels of flow have been reported in professional dancers in the past literature (Levine, 2006; Panebianco-Warrens, 2014; Thomson & Jaque, 2012a).



*Figure 1.* Proposed results of FSS-2 mean scores between gender and style of dance after rehearsals. Both genders of modern dancers significantly report higher levels of flow.

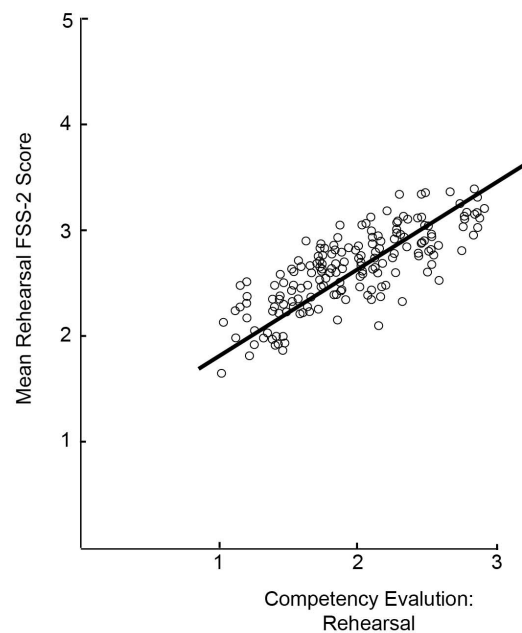
Another two-by-two factorial ANOVA will examine whether the mean flow score on the FSS-2 administered after performances would be different between styles of dance with no interaction with gender. These mean scores would be significantly higher than the mean scores after a rehearsal as previously stated in the first analysis. The researcher predicts that there will be a main effect between styles of dance, with modern dancers reporting significantly higher on levels of flow following a performance. See Figure 2.



*Figure 2.* Proposed results of FSS-2 mean scores between gender and style of dance after performances. Both genders of modern dancers significantly report higher levels of flow.

Using the three steps to determine mediation that Baron and Kenny (1986) established, it will be analyzed to determine whether competency is a mediating factor between experiencing flow in rehearsals and style of dance. Dispositional flow (DFS-2 mean scores) will be controlled for in this analysis. The first step is to show that the style of dance and the mean flow scores on the rehearsal FSS-2 are correlated. The results of this hypothesis were shown previously above. The second step is to show that the style of dance is correlated with the evaluation of competency following a rehearsal. Running a two independent sample t-test will examine the relationship between style of dance and competency scores to show that the modern dancers will have higher scores on their evaluation of competency in a rehearsal. It is predicted that modern dancers will show more significance for higher scores on their evaluation of competency than in ballet

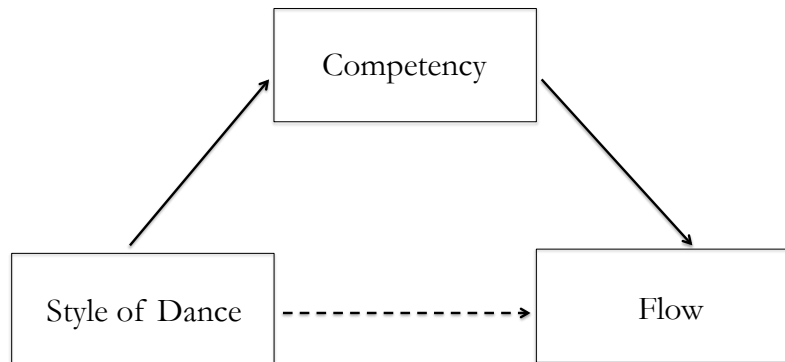
dancers because the style of modern dance can be described as more expressive than ballet. Although ballet requires a high level of skill, there is more freedom in the vocabulary of movement within modern dance. Additionally, competency must be correlated with the mean flow scores on the rehearsal FSS-2. A Pearson correlation test will be conducted to examine the relationship between competency and rehearsal mean flow scores. It is predicted that both of these relationships will be positively correlated. See Figure 3.



*Figure 3.* Proposed results showing a positive correlation between the performance competency evaluation following a rehearsal and the mean rehearsal FSS-2 flow scores.

The next step is to perform a multiple regression to test that competency is a mediator between style of dance and the outcome variable of level of flow experienced. It is predicted that mediation will be established because it will be shown that modern dancers experience significantly higher levels of flow than ballet dancers, and will have

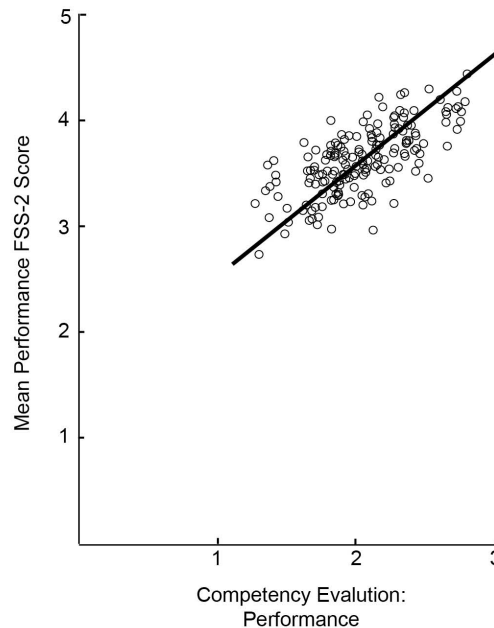
significantly higher scores on their competency evaluations during rehearsals. The relationship between style of dance and levels of flow is predicted to weaken if mediation is established. See Figure 4. Once mediation is established, a Sobel test will be performed to examine the significance of the effects of meditation.



*Figure 4.* Proposed results showing competency evaluation of a rehearsal/performance as a mediating factor between the style of dance and mean flow scores on the FSS-2 following a rehearsal/performance. This figure illustrates that there is an existing relationship between style of dance and flow, but that it is weakened following mediation being established.

Using the same three steps stated previously to establish mediation, it will be analyzed to determine whether competency is a mediating factor between experiencing flow in performance and style of dance. Dispositional flow (DFS-2 mean scores) will be controlled for in this analysis. The first step is to show that the style of dance and the mean flow scores on the performance FSS-2 are correlated. The results of this hypothesis were shown previously above. The second step is to show that the style of dance is correlated with the evaluation of competency following a performance. Running a two independent sample t-test will examine the relationship between style of dance and competency scores to show that the modern dancers will have higher mean scores on

their evaluation of competency in a performance. Additionally, competency must be correlated with the mean flow scores on the performance FSS-2. A Pearson correlation test will be conducted to examine the relationship between competency and performance mean flow scores. It is predicted that both of these relationships will be positively correlated. See Figure 5.

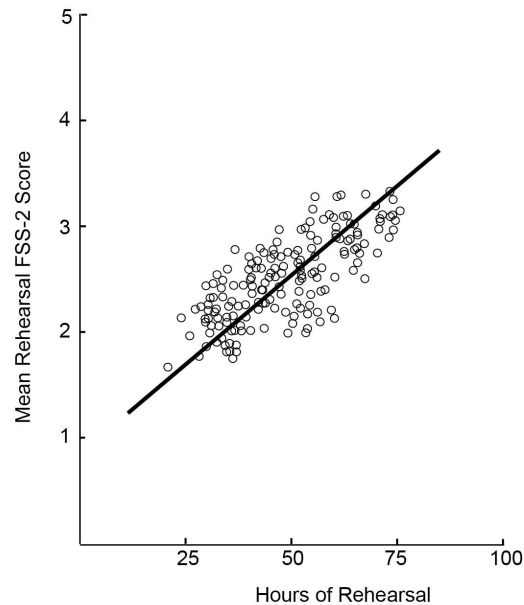


*Figure 5.* Proposed results showing a positive correlation between the performance competency evaluation following a performance and the mean performance FSS-2 flow scores.

The next step is to perform a multiple regression to test that competency is a mediator between style of dance and the outcome variable of level of flow experienced. It is predicted that mediation will be established because it will be shown that modern dancers experience significantly higher levels of flow than ballet dancers, and will have significantly higher scores on their competency evaluations during performances. The relationship between style of dance and levels of flow is predicted to weaken if mediation

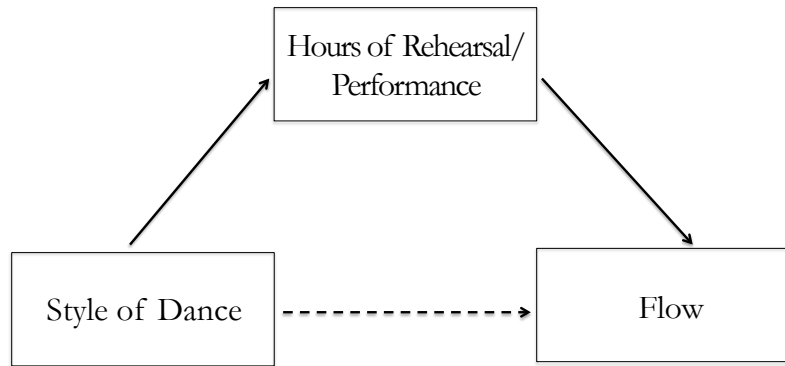
is established. See Figure 4. Once mediation is established, a Sobel test will be performed to examine the significance of the effects of meditation.

The same steps will be used to determine whether number of hours a dancer rehearses per month is a mediating factor between experiencing flow in rehearsal and style of dance. Dispositional flow (DFS-2 mean scores) will be controlled for in this analysis. The first step is to show that the style of dance (predictor) and the mean flow scores on the rehearsal FSS-2 are correlated. The results of this hypothesis were shown previously above. The second step is to show that the style of dance is correlated with the number of hours a dancer rehearses. Running a two independent sample t-test will examine the relationship between style of dance and the number of hours a dancer rehearses to show that the modern dancers will report a significantly higher number of hours of rehearsal per month. Additionally, the number of hours a dancer rehearses must be correlated with the mean flow scores on the rehearsal FSS-2. A Pearson correlation test will be conducted to examine the relationship between number of hours a dancer rehearses and rehearsal mean flow scores. It is predicted that both of these relationships will be positively correlated. See Figure 6.



*Figure 6.* Proposed results showing a positive correlation between the number of hours of rehearsal per month and the mean rehearsal FSS-2 flow scores.

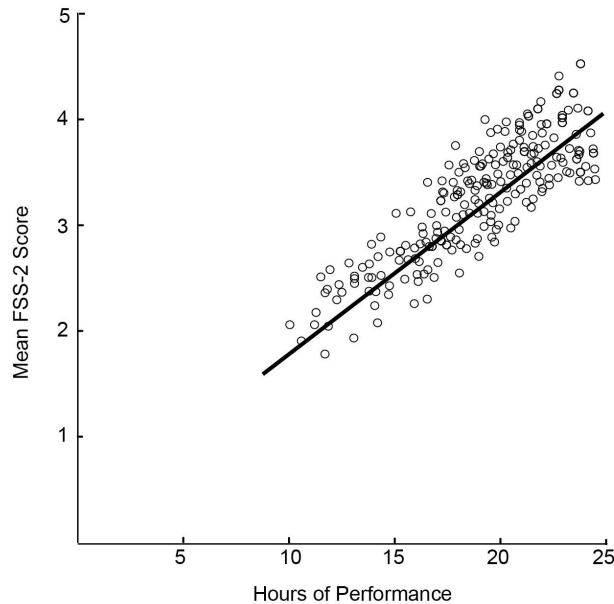
With more hours of rehearsal per month, it is predicted that the relationship between style of dance and flow scores will increase. There are more opportunities to experience flow when the participant has more rehearsal time. The next step is to perform a multiple regression to test that the number of hours of rehearsal is a mediator between style of dance and the outcome variable of level of flow experienced. It is predicted that mediation will be established. The researchers propose that this is because modern dance companies will rehearse as a group, whereas ballet companies may divide their rehearsal more into subgroups based on partner variations or smaller acts of a classical ballet. The relationship between style of dance and levels of flow is predicted to weaken if mediation is established. See Figure 7. Once mediation is established, a Sobel test will be performed to examine the significance of the effects of meditation.



*Figure 7.* Proposed results showing hours of rehearsal/performance per month as a mediating factor between the style of dance and mean flow scores on the FSS-2 following a rehearsal/performance. This figure illustrates that there is an existing relationship between style of dance and flow, but that it is weakened following mediation being established.

Finally using the same steps to establish mediation, the hypothesis that number of hours a dancer performs per month mediates the relationship between the style of dance and mean flow scores will be analyzed. Dispositional flow (DFS-2 mean scores) will be controlled for in this analysis. The first step is to show that the style of dance and the mean flow scores on the performance FSS-2 are correlated. The results of this hypothesis were shown previously above. The second step is to show that the style of dance is correlated with the number of hours a dancer performs. Running a two independent sample t-test will examine the relationship between style of dance and the number of hours a dancer performs to show that the modern dancers will report larger number of hours of performance per month. Additionally, the number of hours a dancer performs must be correlated with the mean flow scores on the performance FSS-2. A Pearson correlation test will be conducted to examine the relationship between number of hours a dancer performs and performance mean flow scores. It is predicted that both of these relationships will be positively correlated. See Figure 8.





*Figure 8.* Proposed results showing a positive correlation between the number of hours of performance per month and the mean performance FSS-2 flow scores.

With a reported higher numbers of hours of performance per month, it is predicted that the relationship between style of dance and mean flow scores will increase. There are more opportunities to experience flow when the participant has more performance time. The next step is to perform a multiple regression to test that the number of hours of performing is a mediator between style of dance and the outcome variable of level of flow experienced. It is predicted that mediation will be established. This is because modern dance companies may perform as a group more often, whereas ballet dancers may not have as much time performing on stage if they are only performing a two-minute variation. The relationship between style of dance and levels of flow is predicted to weaken if mediation is established. See Figure 7. Once mediation is established, a Sobel test will be performed to examine the significance of the effects of meditation.

### **Discussion**

The results of this study will add to the current literature on a dancer's experience of flow in different contexts and how it relates to their level of performance as well. There are three major proposed findings. It is proposed that both ballet and modern dancers of both genders will report experiencing high-level flow in rehearsal contexts and performance contexts. It is also proposed that the findings will be significant in showing that modern dancers will report higher amounts of flow than ballet dancers, with a correlation of their score on their performance evaluation in rehearsals and performance. The levels of flow reported will further support Csikszentmihalyi's (1990) and Jackson's (1992) definition of flow being comprised of nine characteristics. These findings will fill the current gap in the literature, which does not address the difference of flow levels during rehearsal and performance. The findings will also address whether or not there is a significant relationship between how a dancer feels about their performance and how an outside observer evaluates it. If performance competency is found to be strongly associated with flow, it may present a reason as to why certain dancers in certain styles report more frequent occurrences of high level flow experiences. These findings are the first research into these specific contexts of dance performance and should be studied further with improvements in the design of the study. These findings have numerous implications on professional development of dancers.

Further directions for topics of research on flow include understanding the cognitive processes that underlie the experience. Possible questions to add to an interview could pertain to whether dancers believe it is the down regulation of conscious reflection that gives rise to optimal experiences, or as a result of reflection being effortless.

This study has the potential to have experimenter biases due to the fact that the researchers who will carry out this study may have biases toward different styles of dance, specific dancers, or specific techniques of dance. These biases should be noted if the researcher evaluating the participant has any biases they may influence the significance of the correlation. Including an observational measure such as the PCEM automatically includes observer effects. In future research, this should be addressed within the design of the study. Perhaps including video recordings to be evaluated for performance competency instead of live performances. This limitation of the study presents opportunities for the effects to carry over into the data if the participant is aware they are being evaluated and therefore their performance decreases due to nervousness. This may also present an effect on the levels of flow they report for that rehearsal or performance setting due to the fact that they were aware that they were being evaluated. Additionally, there are limitations such as social desirability, surrounding the use of self-report measures. Depending on the actual sample size, there may also be a limitation due to statistical power. These limitations should be taken into account when analyzing the proposed results, and actual results should this study be carried out.

## References

- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Biasi, V., Bonaiuto, P., Giannini, A. M., & Chiappero, E. (1999). Personological Studies on Dancers: Motivations, Conflicts, and Defense Mechanisms. *Empirical Studies of the Arts*. (p.p. p. 171-186). Baywood Publishing; 1999.
- Dell, C. (1977). *A primer for movement description using effort-shape and supplementary concepts* (Rev. ed.). New York: Dance Notation Bureau Press.
- Clabaugh, A., & Morling, B. (2004). Stereotype Accuracy of Ballet and Modern Dancers. *The Journal Of Social Psychology*, 144(1), 31-48.  
doi:10.3200/SOCP.144.1.31-48
- Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety*. San Francisco: Jossey-Bass.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper & Row.
- Csikszentmihalyi, M. (1992). A Response to the Kimiecik & Stein and Jackson Papers, *The Journal of Applied Sport Psychology*, 4(2), 181-183.
- Csikszentmihalyi M. (2009). The promise of positive psychology. *Psihologijske Teme*, 18(2), 203-211.
- Csikszentmihalyi, M., & LeFevre, J. (1989). Optimal experience in work and leisure. *Journal Of Personality And Social Psychology*, 56(5), 815-822.  
doi:10.1037/0022-3514.56.5.815

- Fink, A., & Woschnjak, S. (2011). Creativity and personality in professional dancers. *Personality And Individual Differences*, 51(6), 754-758.  
doi:10.1016/j.paid.2011.06.024
- Fullagar, C. J., & Kelloway, E. K. (2009). 'Flow' at work: An experience sampling approach. *Journal of Occupational and Organizational Psychology*, 82(3), 595-615. doi:10.1348/096317908X357903
- Hefferon, K. & Ollis, S. (2006). 'Just clicks': An interpretive phenomenological analysis of professional dancers' experience of flow. *Research In Dance Education*, 7(2), 141-159. doi:10.1080/14647890601029527
- Homans, J. (2010). *Apollo's angels: A history of ballet*. New York, New York: Random House.
- Jackson, S. A. (1992). Athletes in flow: A qualitative investigation of flow states in elite figure skaters. *Journal of Applied Sport Psychology*, 4(2), 161-180.  
doi:10.1080/10413209208406459
- Jackson, S. A. & Eklund, R. C. (2004). *The Flow Scale Manual*. Morgantown, WV: Fitness Information Technology.
- Jackson, S. A., & Kimiecik, J. C. (2008). The flow perspective of optimal experience in sport and physical activity. In T. S. Horn, (Eds.), *Advances in sport psychology* (3rd ed, pp. 377-399). Champaign, IL, US: Human Kinetics.
- Jackson, S. A., & Marsh, H. (1996). Development and validation of a scale to measure optimal experience: The Flow State Scale. *Journal Of Sport & Exercise Psychology*, 18(1), 17-35.

- Jackson S., & Wrigley W. (2004). Optimal experience in sport: Current issues and future directions. *Sport psychology: Theory, applications and issues (2nd ed.)* [e-book], (pp. 423-451). Milton, QLD, Australia: John Wiley & Sons Australia. Available from: PsycINFO, Ipswich, MA.
- Kimiecik, J. C., & Harris, A. T. (1996). What Is Enjoyment? A Conceptual/Definitional Analysis With Implications for Sport and Exercise Psychology. *Journal Of Sport & Exercise Psychology, 18*(3).
- Kimiecik, J. C., & Jackson, S. A. (2002). Optimal experience in sport: A flow perspective. In T. S. Horn, (Eds.), *Advances in sport psychology (2nd ed)*, pp. 501-527). Champaign, IL, US: Human Kinetics.
- Klockare, E., Gustafsson, H., & Nordin-Bates, S. M. (2011). An interpretative phenomenological analysis of how professional dance teachers implement psychological skills training in practice. *Research In Dance Education, 12*(3), 277-293. doi:10.1080/14647893.2011.614332
- Krasnow, D., & Chatfield, S. (2009). Development of the “Performance Competence Evaluation Measure” Assessing Qualitative Aspects of Dance Performance. *Journal of Dance Medicine & Science, 13*(4), 101-107.
- Lambert, L., Passmore, H. A., & Holder, M. D. (2015). Foundational Frameworks of Positive Psychology: Mapping Well-Being Orientations. *Canadian Psychology. Psychologie Canadienne, 56*(3), 311-321.
- Løvoll, H. S., & Vittersø, J. (2014). Can balance be boring? A critique of the 'challenges should match skills' hypotheses in flow theory. *Social Indicators Research, 115*(1), 117-136. doi:10.1007/s11205-012-0211-9

- Levine, C. L. (2006). *Flow and motivation in male ballet dancers*. PhD thesis, Wright Institute Graduate School of Psychology. Retrieved from ProQuest Dissertations & Theses Global.
- Lussier-Ley, C., & Durand-Bush, N. (2009). Exploring the Role of Feel in the Creative Experiences of Modern Dancers: A Realist Tale. *Research In Dance Education, 10*(3), 199-217.
- Nordin-Bates, S. M., Cumming, J., Aways, D., & Sharp, L. (2011). Imagining Yourself Dancing to Perfection? Correlates of Perfectionism Among Ballet and Contemporary Dancers. *Journal of Clinical Sport Psychology, 5*(1), 58-76.
- Nordin-Bates SM, Hill AP, Cumming J, Aujla IJ, & Redding E. (2014). A longitudinal examination of the relationship between perfectionism and motivational climate in dance. *Journal Of Sport & Exercise Psychology, 36*(4), 382-91.  
doi:10.1123/jsep.2013-0245
- Marsh, H. W., & Jackson, S. A. (1999). Flow experience in sport: Construct validation of multidimensional, hierarchical state and trait responses. *Structural Equation Modeling, 6*(4), 343-371. doi:10.1080/10705519909540140
- Panebianco-Warrens, C. (2014). Exploring the dimensions of flow and the role of music in professional ballet dancers. *Muziki: Journal Of Music Research In Africa, 11*(2), 58-78. doi:10.1080/18125980.2014.966480
- Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage.
- Quested, E., Duda, J. L., Ntoumanis, N., & Maxwell, J. P. (2013). Daily fluctuations in the affective states of dancers: A cross-situational test of basic needs

- theory. *Psychology Of Sport & Exercise*, 14(4), 586-595.  
doi:10.1016/j.psychsport.2013.02.006
- Ramsland, S. E. (1989). *The phenomenology of the experience of flow in work*. PhD thesis, State University of New Jersey Rutgers. Retrieved from ProQuest Dissertations & Theses Global.
- Rich, G. J. (2013). Finding flow: The history and future of a positive psychology concept. In J. D. Sinnott, J. D. Sinnott (Eds.), *Positive psychology: Advances in understanding adult motivation* (pp. 43-60). New York, NY, US: Springer Science + Business Media. doi:10.1007/978-1-4614-7282-7\_4
- Salapa, S. R. (2000). *The relationship between student personality types and traits and instructor corrective feedback in dance education*. PhD thesis, University of Central Florida. Retrieved from ProQuest Dissertations & Theses Global.
- Schoch S, Schöler J. (2012) The effect of implicit and explicit achievement motive incongruence on flow experience in sports. *Advances in psychology research* (Vol 94, pp. 261-272). [e-book]. Hauppauge, NY, US: Nova Science Publishers. Available from: PsycINFO, Ipswich, MA.
- Seligman, M. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55(1), 5-14. doi:10.1037/0003-066X.55.1.5
- Spurgeon, J. H., Anderson, S. E., Keith, J. A. (1987). Somatic and demographic variables of elite female ballet and modern dancers. *Spectra of Anthropological Progress*, 9, 49-64.
- Thomson, P. & Jaque, S. (2011). Psychophysiological study: Ambulatory measures of the ANS in performing artists. *International Symposium on Performance Science*.



- Thomson, P., & Jaque, S. V. (2012a). Anxiety and the influences of flow, trauma, and fantasy experiences on dancers. *Imagination, Cognition And Personality*, 32(2), 165-178. doi:10.2190/IC.32.2.e
- Thomson, P., & Jaque, S. V. (2012b). Dancing with the muses: Dissociation and flow. *Journal Of Trauma & Dissociation*, 13(4), 478-489. doi:10.1080/15299732.2011.652345
- White, K. (2010). Think you know ballet?: Studying a new technique over the summer can be an eye-opening experience. *Pointe*, 10, 74-74, 76.
- White, S. B., Philpot, A., Green, A., & Bemben M. G. (2004). Physiological comparison between female university ballet and modern dance students. *Journal of Dance Medicine & Science*, 8, 5-10.
- Zoller, J. N. (2015). *Uncovering flow: Choreographic structures that support flow characteristics in dance performance*. MFA dissertation, University of Oregon. Retrieved from ProQuest Dissertations & Theses Global.

## Appendices

## Appendix A

## Interview Questions

- (a) Describe an experience of flow that you have had during your career as a dancer.
- (b) What factors facilitate these experiences you've had?
- (c) What factors might prevent you from experiencing flow while performing?
- (d) Tell me about the major factors influencing your experience.
- (e) When you dance in rehearsal do you find at the end of rehearsal that you feel accomplished?
- (f) When you dance in performance do you find at the end of rehearsal that you feel accomplished?
- (g) Do you ever lose track of time while you are dancing?
- (h) Does time ever go by very slowly while you're dancing?
- (i) Do you feel the eyes of others on you while you're in rehearsal?
- (j) Can you feel the audience's presence or gaze influence your performance?
- (k) Do you feel in complete control while dancing?
- (l) How concentrated are you while you're dancing?
- (m) Do you receive feedback from yourself while you're dancing? From others?
- (n) Do you feel that there are clear goals set in place by yourself and others for the level of expected performance?
- (o) Does your actions come seamlessly?
- (p) Do you have to think about the next step in the choreography?

(q) Do you ever feel challenged by the skill level required during rehearsals or performances?

Probing questions:

(a) Can you tell me more about ... ?

(b) And when you were experiencing flow, were you conscious of it?

## Appendix B

## Activity Experience Scale (DFS-2)

Please answer the following questions in relation to your experience in your chosen activity. These questions relate to the thoughts and feelings you may experience during participation in your activity. You may experience these characteristics some of the time, all of the time, or none of the time. There are no right or wrong answers. Think about how often you experience each characteristic during your activity and circle the number that best matches your experience.

<b>Rating Scale</b>				
Never	Rarely	Sometimes	Frequently	Always
1	2	3	4	5
1. I am challenged, but I believe my skills will allow me to meet the challenge.				
1	2	3	4	5
2. I make the correct movements without thinking about trying to do so.				
1	2	3	4	5
3. I know clearly what I want to do.				
1	2	3	4	5
4. It is really clear to me how my performance is going.				
1	2	3	4	5
5. My attention is focused entirely on what I am doing.				
1	2	3	4	5
6. I have a sense of control over what I am doing.				
1	2	3	4	5
7. I am not concerned with what others may be thinking of me.				
1	2	3	4	5

8. Time seems to alter (either slows down or speeds up).

1                      2                      3                      4                      5

9. I really enjoy the experience.

1                      2                      3                      4                      5

10. My abilities match the high challenge of the situation.

1                      2                      3                      4                      5

11. Things just seem to happen automatically.

1                      2                      3                      4                      5

12. I have a strong sense of what I want to do.

1                      2                      3                      4                      5

13. I am aware of how well I am performing.

1                      2                      3                      4                      5

14. It is no effort to keep my mind on what is happening.

1                      2                      3                      4                      5

15. I feel like I can control what I am doing.

1                      2                      3                      4                      5

16. I am not concerned with how others may be evaluating me.

1                      2                      3                      4                      5

17. The way time passes seems to be different from normal.

1                      2                      3                      4                      5

18. I love the feeling of the performance and want to capture it again.

1                      2                      3                      4                      5

19. I feel I am competent enough to meet the high demands of the situation.

1                      2                      3                      4                      5

20. I perform automatically, without thinking too much.

1                      2                      3                      4                      5

21. I know what I want to achieve.

1                      2                      3                      4                      5

22. I have a good idea while I am performing about how well I am doing.

1                      2                      3                      4                      5

23. I have total concentration.

1                      2                      3                      4                      5

24. I have a feeling of total control.

1                      2                      3                      4                      5

25. I am not concerned with how I am presenting myself.

1                      2                      3                      4                      5

26. It feels like time goes by quickly

1                      2                      3                      4                      5

27. The experience leaves me feeling great.

1                      2                      3                      4                      5

28. The challenge and my skills are at an equally high level.

1                      2                      3                      4                      5

29. I do things spontaneously and automatically without having to think.

1                      2                      3                      4                      5

30. My goals are clearly defined.

1                      2                      3                      4                      5

31. I can tell by the way I am performing how well I am doing.

1                      2                      3                      4                      5

32. I am completely focused on the task at hand.

1                      2                      3                      4                      5

33. I feel in total control of my body.

1                      2                      3                      4                      5

34. I am not worried about what others may be thinking of me.

1                      2                      3                      4                      5

35. I lose my normal awareness of time.

1                      2                      3                      4                      5

36. The experience is extremely rewarding.

1                      2                      3                      4                      5

## Appendix C

## Event Experience Scale (FSS-2)

Please answer the following questions in relation to your experience in the event you have just completed. These questions relate to the thoughts and feelings you may have experienced while taking part. You may experience these characteristics some of the time, all of the time, or none of the time. There are no right or wrong answers. Think about how you felt during the event/activity and answer the questions using the rating scale below. For each question circle the number that best matches your experience.

<b>Rating Scale</b>				
Never	Rarely	Sometimes	Frequently	Always
1	2	3	4	5
1. I was challenged, but I believed my skills would allow me to meet the challenges.				
1	2	3	4	5
2. I made the correct movements without thinking about trying to do so.				
1	2	3	4	5
3. I knew clearly what I wanted to do.				
1	2	3	4	5
4. It was really clear to me how my performance was going.				
1	2	3	4	5
5. My attention was focused entirely on what I was doing.				
1	2	3	4	5
6. I had a sense of control over what I was doing.				
1	2	3	4	5
7. I was not concerned with what others may be thinking of me.				
1	2	3	4	5



8. Time seemed to alter (either slowed down or speeded up).

1                      2                      3                      4                      5

9. I really enjoyed the experience.

1                      2                      3                      4                      5

10. My abilities matched the high challenge of the situation.

1                      2                      3                      4                      5

11. Things just seemed to be happening automatically.

1                      2                      3                      4                      5

12. I had a strong sense of what I wanted to do.

1                      2                      3                      4                      5

13. I was aware of how well I was performing.

1                      2                      3                      4                      5

14. It was no effort to keep my mind on what was happening.

1                      2                      3                      4                      5

15. I felt like I could control what I was doing.

1                      2                      3                      4                      5

16. I was not concerned with how others may have been evaluating me.

1                      2                      3                      4                      5

17. The way time passed seems to be different from normal.

1                      2                      3                      4                      5

18. I loved the feeling of the performance and want to capture it again.

1                      2                      3                      4                      5

19. I feel I am competent enough to meet the high demands of the situation.

1                      2                      3                      4                      5

20. I performed automatically, without thinking too much.

1                      2                      3                      4                      5

21. I knew what I wanted to achieve.

1                      2                      3                      4                      5

22. I had a good idea while I was performing about how well I was doing.

1                      2                      3                      4                      5

23. I had total concentration.

1                      2                      3                      4                      5

24. I had a feeling of total control.

1                      2                      3                      4                      5

25. I was not concerned with how I was presenting myself.

1                      2                      3                      4                      5

26. It felt like time went by quickly.

1                      2                      3                      4                      5

27. The experience left me feeling great.

1                      2                      3                      4                      5

28. The challenge and my skills were at an equally high level.

1                      2                      3                      4                      5

29. I did things spontaneously and automatically without having to think.

1                      2                      3                      4                      5

30. My goals were clearly defined.

1                      2                      3                      4                      5

31. I could tell by the way I was performing how well I was doing.

1                      2                      3                      4                      5

32. I was completely focused on the task at hand.

1                      2                      3                      4                      5

33. I felt in total control of my body.

1                      2                      3                      4                      5

34. I was not worried about what others may have been thinking of me.

1                      2                      3                      4                      5

35. I lost my normal awareness of time.

1                      2                      3                      4                      5

36. I found the experience extremely rewarding.

1                      2                      3                      4                      5

## Appendix D

## Performance Competency Evaluation Method Guide for Judges

***Full Body Movement***

	<b>Stabilized base Axial</b>	<b>Stabilized base Locomotor</b>	<b>Limb Energy</b>
<b>Level I</b>	In off-center torso movements, little or no ability to maintain center of weight over base of support	In off-center torso movements, little or no ability to accurately transfer the center of weight from one support base to the next	Repeated signs of “dead” or unattended body segments when focus of the movement is elsewhere
<b>Level II</b>	In off-center torso movements, demonstrated but inconsistent ability to maintain center of weight over base of support	In off-center torso movements, demonstrated but inconsistent ability to accurately transfer the center of weight from one support base to the next	Occasional displays of “dead” or unattended body segments when focus of the movement is elsewhere
<b>Level III</b>	In off-center torso movements, consistent ability to maintain center of weight over base of support, resulting in great freedom of movement in the torso work	In off-center torso movements, consistent ability to accurately transfer the center of weight from one support base to the next, resulting in great freedom of movement in the torso work	No displays of “dead” or unattended body segments when focus of the movement is elsewhere, resulting in all body segments being energized regardless of how minimal the movement is

***Body Integration and Connectedness***

	<b>Central Energy</b>	<b>Spine Articulation</b>	<b>Relationship of Body Segments</b>
<b>Level I</b>	In isolated limb gestures, little or no central body energy or core support underlying the action	Lack of awareness and sensitivity to articulating various portions of the spine; poor spine sequencing	Poor alignment; appropriate relationship of body segments to each other rarely or never demonstrated in movement phrases
<b>Level II</b>	In isolated limb gestures, occasional but inconsistent central body energy or core support underlying the action	Occasional but inconsistent awareness and sensitivity to articulating various portions of the spine; inconsistent understanding of appropriate spine sequencing	Some alignment problems; appropriate relationship of body segments to each other only occasionally demonstrated clearly in movement phrases
<b>Level III</b>	In isolated limb gestures,	Clear and consistent	Good alignment; well-

consistent central body energy or core support underlying the action	awareness and sensitivity to articulating various portions of the spine; consistent demonstration of appropriate spine sequencing	executed and consistent demonstration of the appropriate relationship of body segments to each other in movement phrases
--	---	--

### *Articulation of Body Segments*

	<b>Lower Limb Activity</b>	<b>Upper Limb Activity</b>
<b>Level I</b>	Incapacity to generate thigh and leg activity without obvious, undesired movement of the pelvis; poor articulation of the femur in the hip socket, demonstrated by lack of mobility of the femur	Poor articulation of the humerus in the shoulder joint; very limited mobility of the humerus, with no accompanying mobility of the scapula and rib cage to support humeral movement; inability to avoid undesired scapula and rib cage movement during full range humeral movement; poor scapula-humeral rhythm
<b>Level II</b>	Occasional inability to generate thigh and leg activity without obvious, undesired movement of the pelvis; restricted articulation of the femur in the hip socket, demonstrated by limited mobility of the femur	Restricted articulation of the humerus in the shoulder joint; limited mobility of the humerus, with inconsistent accompanying mobility of the scapula and rib cage to support humeral movement; occasional ability to avoid undesired scapula and rib cage movement during full range humeral movement; uneven scapula-humeral rhythm
<b>Level III</b>	Thigh and leg activity clearly differentiated from the pelvis; excellent articulation of the femur in the hip socket, resulting in the capacity to move the lower limbs with good mobility and no unnecessary pelvic movement	Clear articulation of the humerus in the shoulder joint; good mobility of the humerus, with accompanying mobility of the scapula and rib cage to support humeral movement; clear ability to avoid undesired scapula and rib cage movement during full range humeral movement; good scapula-humeral rhythm

### *Movement Skills*

	<b>Direction Changes</b>	<b>Balancing</b>	<b>Levels, Speed, Dynamics</b>
<b>Level I</b>	Great difficulty with quick changes of direction, resulting in instability and rhythmic inaccuracy	Little success at sustaining balances in the middle of movement phrases, resulting in repeated loss of concentration on the qualitative aspects of the movement phrase	Sluggish or awkward when attempting shifts in levels, speeds, and/or dynamic qualities
<b>Level II</b>	Some success, but awkward with quick changes of direction, resulting in occasional losses of stability and	Moderate ability to sustain balances in the middle of movement phrases, resulting in occasional loss of concentration on the	Unpredictable at achieving clear and appropriate shifts in levels, speeds and/or dynamic qualities

---

	rhythmic accuracy	qualitative aspects of the movement phrase	
<b>Level III</b>	Ease at achieving quick changes of direction, resulting in consistent stability and overall accuracy	Consistent ability to sustain balances in the middle of movement phrases, resulting in consistent concentration on the qualitative aspects of the movement phrase	Well-executed shifts in levels, speeds, and dynamic qualities, creating transitions which are clear and appropriate for the given material

## Appendix E

## PCEM Score Sheet

Performer ID _____	Rehearsal / Performance		
Overall proficiency Rating	1	2	3
Full Body involvement	1	2	3
Evaluation of use of stabilized base, and limb energy			
Body integration and connectedness	1	2	3
Evaluation of central energy, spine articulation, and inter-relationship of body segments			
Articulation of body segments	1	2	3
Evaluation of lower limb activity, and upper limb activity			
Movement Skills	1	2	3
Evaluation of direction changes, balancing, changes in levels, speeds and dynamics			