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Mindfulness and Dance: The Effect of Yoga Practices in College-Aged Dancers

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MINDFULNESS AND DANCE: THE EFFECT OF YOGA PRACTICE IN COLLEGE-AGED DANCERS

By

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Introduction

Defining Mindfulness

Mindfulness is the self-regulation of attention toward conscious awareness of bodily sensations and perceptions (Howell & Marich, 2015). As opposed to other forms of attention training, mindfulness focuses on a non-judgmental monitoring of stimuli and experiences which adopts a curious, open, and accepting attitude (Creswell, Denson, & Schofield, 2015). Mindfulness practitioners develop an ongoing awareness of changes in their internal experiences of sensations, thoughts, and feelings, as well as awareness of external experiences (Daubenmier, Dunn, Farb, Gard, Kerr, Klein, Mehling, Paulus, & Price, 2015). Traditionally, mindfulness involves quietly sitting and observing various experiences without judging or attempting to change the experience itself. However, any activity, whether or not the practitioner is sitting still, that permits a systematic regulation of attention and energy that influences and potentially affects perception of an experience can be classified as mindfulness (Howell & Marich, 2015). Mindfulness activities include yoga, somatic practices, dance, Tai Chi, and other practices that enhance awareness of the body (Howell & Marich, 2015).

Mindfulness has several psychological and neurological effects. Mindfulness increases subjective well-being, and reduces psychological symptoms and emotional activity (Creswell, Denson, & Schofield, 2015). Other psychological effects include enhanced sensitivity to body sensations, non-reactivity to adaptations, regulation of multiple sensations and changes, insight of one's internal experience to the external surroundings, presence and agency, and positive experiences (Daubenmier et al., 2015). With regards to psychological symptoms, mindfulness-based interventions provide effective treatment for anxiety, depression, and stress. Mindfulness also alters neural expressions of sadness, positively alters neural activity, and positively affects

working memory capacity and emotional experience (Howell & Marich, 2015). In clinical cases, mindfulness buffers the decline of working memory after high-demanding cognitive activity and reduces biological stress reactivity in high stress situations (Creswell, Denson, & Schofield, 2015). These observations can be associated with beneficial changes in brain structures as a result of mindfulness practice such as in the hippocampus, which functions in learning and memory, and in the amygdala, which undergoes thinning, leading to decreases in fear-based responses (Howell & Marich, 2015).

Interoception is a key component of mindfulness practices. Interoception is the "receiving, processing, and integration of body-relevant signals together with external stimuli to affect motivated behavior" (Falahpour, Haase, Hickman, Isakovic, Liu, May, Paulus, & Simmons, 2015, p. 2). Enhanced interoception occurs as mindfulness practitioners redirect from "distraction to attentional control, effort to ease, separateness to connection" (Daubenmier et al., 2015, p. 14). Increased interoception, through mindfulness practices, can also lead to changes in self-reference, attention, emotion regulation, pain regulation, agency, and relationships with others (Daubenmier et al., 2015). Prior research argues that interoception is the first way through which mindfulness focuses attention on signals from the breath and from bodily sensations. Mindfulness teaches bottom-up integration of attention; rather than trying to change the body to match practitioners' expectations, practitioners adjust according to the sensations they experience in their body. As a result, practitioners enhance awareness of sensory inputs that allow for greater adaptive responses (Daubenmier et al., 2015).

Somatic Studies: A Dimension of Mindfulness

Somatic studies are a dimension of mindfulness which involve enhanced bodily awareness. Somatics, as defined by Thomas Hanna, is the "art and science of the inter-relational

process between awareness, biological function and the environment, with all three factors understood as a synergistic whole" (Adams, Caldwell, Greeson, Harrison, & Quin, 2013, p. 2). Somatics is also referred to as body therapy, bodywork, body-mind therapy, body-mind integration, body-mind discipline, movement awareness, and movement re-education (Batson, 2009a). Benefits of somatics include improved strength and alignment and increases in body awareness and sensory authority.

Somatic studies began in the late 19th century when somatic pioneers began studying more "natural" methods of awareness of bodily sensations such as touch, changes in breath, and movement (Batson, 2009a). During this time, somatic researchers discovered that through enhanced mind-body awareness, they learned better, decreased their pain, improved their movement abilities, worked more efficiently, and performed with greater strength and expression (Eddy, 2009). Early students practiced conscious relaxation by lying down on the floor or a table. Since the beginning of somatic studies, practitioners have created over 100 contemporary body-mind practices in addition to traditional mind-body practices such as yoga and tai chi (Batson, 2009a). Today, goals of somatic practices include "self-organization, self-healing, or self-knowing" (Eddy, 2009, p. 8).

Mindfulness in Dance

The evolution of modern dance laid the foundation for dance as a method of somatic study and mindfulness practice. Dancers such as Isadora Duncan (1878 – 1927) and Rudolf von Laban (1879 – 1954) challenged the rules of dance and emphasized freedom of expression and movement exploration in their work (Eddy, 2009). Martha Myers, a dance educator and choreographer in the 1980s and 1990s, connected dance and somatic studies when she worked with doctors and researchers from Duke University at the American Dance Festival. Myers'

work helped dancers explore their movement on the floor in order to enhance their mind-body awareness (Eddy, 2009). Today, there are a variety of somatic techniques in the dance community which share the common theme that there are many ways in which one can enhance body awareness.

Although dance is considered a method of improving sensory awareness, there are differences between the philosophies of dance and mindfulness practices. Sensory authority, the role of sensory awareness in the body, is one of five common forms of inner experience, which includes inner speech, inner seeing, feelings, and un-symbolized thinking (Batson, 2009b). While dance, specifically modern dance, does emphasize sensory awareness, instructors focus more on sensory awareness as an "indicator of motor skill" rather than as a "primary agent in learning the motor skill" (Batson, 2009b, 178). Instead of emphasizing awareness of mind-body sensations while learning a skill, dance often focuses on sensory awareness once dancers learn a skill. For example, dancers often rely upon the mirror to determine whether they have proper alignment in a position. Once the dancer sees what the proper alignment looks like in the mirror, the dancer will bring awareness to how that position feels in his or her body.

Mindfulness in Yoga and Yoga's History in Dance

Yoga provides similar enhancements in mind-body awareness as somatic studies and dance. Participants individually explore inner sensations while also participating in a group, developing mindfulness in social situations. Practicing yoga develops a foundation for understanding mental experiences through focus of attention on and toleration of physical sensations which arise during the practice. Yoga regulates the internal state of the body while simultaneously building a strong, flexible body and mind. As a result, individuals are able to

adapt both physically and mentally to their surrounding environment. Overall, yoga allows a participant to grow and sustain mental and physical wellbeing (Barton, 2011).

Several researchers in the field of somatic studies and dance incorporated yoga in their work. Ida Rolf, who joined the Rockefeller Institute during World War II and studied movement in classes in Alexander Technique, learned from yoga that, through working with the body, one could improve "all aspects of the human being" (Eddy, 2009, p. 14). Through lengthening the body and creating more space in the joints in yoga practice, Rolf believed the yoga practitioner improved mind-body awareness. Bonnie Bainbridge Cohen, a dancer and certified instructor of Rudolf von Laban's movement analysis, studied yoga in New York City. She incorporated the holistic approach of yoga in her own somatic and mindfulness teachings in the 1980s and 1990s (Eddy, 2009).

A major difference in yoga and dance is the inclusion of intentional rest, referred to as *savasana,* or corpse pose, in yoga. Almost all mindfulness practices include a period of intentional rest during which the practitioner listens for "messages received from body movement, touch, voice and other modalities" (Batson, 2009b, p. 179). The dance community, especially in Western culture, predominantly views rest as unproductive and detrimental to progress. Dancers who do not train constantly, whether in the dance studio or through other cross training activities, appear not dedicated or committed to their career. Sports psychology, motor learning, and neuroscience research, however, provide evidence for the importance of rest between practice sessions in order to enhance acquisition and retention of motor skills. Rest also has been shown to decrease overuse injuries, which are common in dance (Batson, 2007). Another benefit of rest in dance involves use of mirrors, which are utilized in most all dance studios. As explained above, mindfulness emphasizes sensory awareness while learning a

movement, whereas dance brings attention to sensory awareness after learning a movement. Rest enhances mindfulness so that movement comes from sensory awareness rather than mimicking another person doing the movement or observing oneself doing the movement in a mirror (Batson, 2009b). As a result, dancers can enhance their awareness of micro-movements such as subtle weight shifts, breathing, body postures, and body image. The enhanced awareness of collective micro-movements contributes to larger movements, positively impacting dancers' overall performance abilities (Batson, 2009b).

Purpose and Hypotheses

The emphasis on learning from the body through mindfulness has helped dancers heal from injuries and improve performance (Eddy, 2009). Dancers improve their technique, enhance their expression while dancing, and experience greater self-development through somatic practices (Eddy, 2009). Not only do mindfulness practices enable dancers to enhance their physical awareness, but dancers also enhance their mental capabilities to train and to achieve more.

The purpose of the current study is to identify the effects of increased mindfulness, through yoga practice, upon classical ballet performance in college-aged dancers. While there is research connecting mindfulness, somatics, and modern dance, the effects of mindfulness in the classical ballet genre is limited. This study is based on findings from research by Adams et al. (2013) on Pilates, mindfulness, and somatic education in overall well-being of college dancers. Adams et al. (2013) observed that students participating in Pilates showed improved mindfulness, decreases in negative mood, and more relaxation compared to students that only participated in exercise training. Furthermore, the Pilates students experienced more self-regulated self-efficacy, lower stress levels, and improved mood. Self-efficacy refers to a person's

judgment of his or her ability to organize and successfully achieve a variety of actions (Adams et al, 2013). While yoga and Pilates are different mindfulness techniques involving different movements and goals, both practices enhance overall mind-body awareness.

Participating in the yoga classes is expected to have several effects upon dancers during their ballet technique classes including:

1. Increased overall mindfulness.
2. Enhanced internal focus.
3. Decreased reliance upon mirrors.
4. Increased awareness of breath.
5. Improved artistic awareness.

Methods

The Internal Review Board of the University of South Carolina approved the current study. The study was assigned exempt approval and was assigned a formal letter of approval but did not require a stamped and dated consent form. Funding for the project was obtained from the University of South Carolina Honors College through the Honors Thesis Grant.

Participants of the study were recruited from the Ballet II, III, and IV Technique classes of the University of South Carolina Department of Theatre and Dance during the Spring 2017 semester in January. Dancers were recruited with an email advertisement and in-class announcements about the study. The email advertisement described the purpose of the study and participant requirements. Participants provided their name, age, and phone number. There was a total of 10 responses to the email advertisements and in-class announcement; however, only eight dancers participated in the study and one dancer was no longer able to participate due to an injury after the fourth yoga class, leaving a total of seven participants.

Dancers participated in seven Vinyasa-style yoga classes beginning in February 2017 and ending in late March 2017. Two instructors from a local yoga studio taught the classes. One instructor taught the first two classes and the last class and the second instructor taught the third, fourth, fifth, and sixth yoga classes. During each yoga class, observations of instructor methods and the dancers' participation were made. Dancers provided their prior yoga experience before starting their first class.

Dancers completed their first Five Facet Mindfulness Questionnaire (FFMQ; Appendix 1) and guided journal questions (Appendix 2) the week before yoga classes started. Each dancer created a personal identification number so that FFMQ results and journal questions would remain anonymous. The dancers participated in four yoga classes and then completed the second FFMQ and journal questions. After the final yoga class, dancers completed their final FFMQ and journal questions. The FFMQ was manually scored and results were documented in a Microsoft Excel Spreadsheet. The FFMQ measures elements of mindfulness: observing, describing, acting with awareness, nonjudging, and nonreactivity. Each element has a certain number of questions which correspond to that element. Participants self-score themselves on a scale from 1 to 5, 1 meaning the statement is rarely or never true for them and 5 meaning the statement is very often or always true for them. A total score for each element, along with an average score for each statement in that element, and a total FFMQ score, along with an average score per item, were calculated. The total FFMQ score quantified the participants' total mindfulness. Themes and common words and/or phrases in the journal responses were identified manually.

Results

Participants

Table 1 summarizes dancers' ages, dance class and rehearsal schedules, academic class schedules, and any other commitments dancers listed having outside of school. Most dancers took ballet technique classes four to five times per week. Some dancers listed taking other dance classes such as contemporary, jazz, and pointe. Most dancers had rehearsal four to five days per week as well. Outside of their dance classes and rehearsal schedules, most dancers said they were taking three to five academic courses. Some dancers listed going to the gym and working as other commitments they have outside of school. Participants 6 and 7 missed one and two yoga classes, respectively.

Table 1. Participant Age, Dance and Class Schedule, and Other Commitments

Participant	Age	Dance Classes/Rehearsals	Academic Schedule	Other Commitments
1	19	Ballet 5 times per week; Contemporary 2 times per week; Rehearsals 5 times per week; Jazz 2 times per week	5 classes	Gym/cardio 3-5 times per week; additional 3-4 yoga classes including Vinyasa flow and hot Bikram yoga
2	20	Ballet 5 times per week; intense rehearsals for 4 weeks of the study	4 classes	
3	19	Ballet 5 times per week; Pointe 2 times per week; Contemporary 2 times per week; Rehearsal 5 times per week	Morning classes on Monday and Wednesday; afternoon classes on Tuesday and Thursdays	Work on Saturday and Sunday; Ideally yoga 1-3 times per week but often too busy
4	18	Ballet 4 times per week	16 credit hours (total)	
5	18	Ballet 4 times per week; Contemporary 2 times per week; Jazz 2 times per week; Rehearsal 4 times per week	3 classes	Work on Tuesday and Thursday evenings
6	19	Dance classes from 11:00 am - 4:00 pm on Monday, Wednesday, and Friday and from 10:00 am - 4:30 pm on Tuesday and Thursday	Morning classes Monday through Friday	
7	19	Ballet 4 times per week; Rehearsal 4 time per week	Mornings until 11:00 am four days per week	

Yoga Instruction and Class Observations

All seven yoga classes were Vinyasa-style yoga classes. Common themes of the classes included connecting the breath with the movement, bringing awareness to the breath, and individualizing the poses. Each class began with the dancers in a seated position. Instructors asked the dancers to "find your comfortable seat" and then guided the dancers through a breathing practice. Dancers were instructed to breathe as if they were fogging a mirror, to breathe in the back of their throats as if making an "ocean sound," and to breathe deeply, filling up their stomachs with air before exhaling from their shoulders to their chest and to their stomach. Throughout the classes, instructors asked dancers to connect their inhales and exhales with movements. For example, in *chaturanga*, the push-up which connects different movement flows throughout the practice, dancers connected their exhales when lowering down in *chaturanga* and then connected their inhales when curling up to *upward dog* and back to *downward dog*.

The yoga classes also emphasized bringing awareness to the breath throughout the practice. Between movement flows, instructors would have dancers fold forward while standing, rest in *child's pose*, or stand in *mountain pose* and take a moment to return to their breath. These moments of bringing awareness back to the breath were often after two or three movement flows. Instructors asked dancers to recognize their thoughts toward their practice at that moment, and used phrases such as "with loving awareness," "let go of that which does not serve you," and "feel the breath pulsating through your body" to guide dancers in bringing their awareness back to their breath. In *pigeon pose*, one instructor described using the breath to release into the pose and to fill and release the areas of tension dancers felt. The instructor described the tension as more than just physical, referencing the emotional tension which the pose also reveals, stating

"all our issues lie in our tissues" and instructing dancers to "let go of everything you can that is no longer building you up in a positive way." Instructors also encouraged using the breath to "open through the heart" throughout the practices.

While the instructors did guide the dancers through set sequences of poses, instructors also emphasized dancers making the practices "theirs" and to make the classes times for themselves. In the first class, the instructor told dancers to "make this your own movement" and reminded dancers that "all [*chaturanga*] push-ups are self-inflicted." When instructors gave poses, they gave different variations. For *chaturanga,* dancers had options to come up through *cobra* or *up dog*. The second instructor would tell dancers to use "whatever is going to allow you to melt into this pose a little bit more." When coming to the top of their mats from *downward dog*, dancers had the options to hop or walk to the front of their mat. The instructors also acknowledged individuality in the dancers' practices in poses. For example, one instructor explained that "forward folding is about folding deeply toward yourself" and the second instructor explained to dancers they were "growing poses from within" and that their poses are more of "a felt experience rather than outer feelings." Dancers were also encouraged to move with their own breath, with their own inhales and exhales, and to know "that you're breathing."

During six of the classes, dancers practiced facing away from the mirror. One class was in a different studio than usual and although dancers continued facing the same direction as in the other studio, they ended up facing the mirror. When dancers were side-ways on their mats during forward folds, some dancers would look at themselves in the mirror during the fold. During the first classes, half of the dancers would look in the mirror at some point during the forward fold when side-ways on their mats. In the last two classes, less than half of the dancers looked in the mirror. Most dancers also went from looking into the mirror multiple times during

the forward fold to only once or not at all during the forward fold. Since all other poses were facing the back of the room, away from the window, dancers did not look into the mirror during the other poses. The dancers faced the mirror during the fifth yoga class of the study. Other than when standing in *mountain pose,* facing directly toward the mirror, and during *prayer twist*, a newer pose for the dancers during this class, the dancers did not look into the mirror.

Dancers' attention to the instructors and awareness of one another was also observed. During the first class, which was either the first class for dancers or the first yoga class dancers had taken since at least summer, the dancers looked at the instructor throughout the first class. At one moment, the instructor cued the dancers to do a forward fold. The dancers, watching her, did not move into a forward fold until she did the forward fold herself, at which time the instructor said "you fold over, not me." During the first *upward dog* of the first class, dancers looked around at one another. As the dancers continued going through *vinyasas* in the practice, they looked around at one another less often. When dancers were in standing poses, their eyes moved as if they were looking at different points outside of the studio through the window. When the dancers were just told to go to *downward dog*, and the *vinyasa* was not mentioned by the instructor, most dancers did not flow through the *vinyasa*. When the instructor cued the *vinyasa*, dancers moved through the *vinyasa* before going into *downward dog*. As classes continued through the study, dancers looked around at one another less often and looked at the instructor less often. During new poses in the last few classes, such as *crow* pose and *side plank*, dancers would look around at one another. In standing poses, during the last three classes as well, dancers' gazes were most stable during standing poses rather than shifting to different outside points through the window.

Five Facet Mindfulness Questionnaire

Dancers completed the Five Facet Mindfulness Questionnaire before the yoga classes started, after taking four yoga classes, and after the final yoga class. Dancers answered thirty-nine questions, each of which had a score of 1 to 5, 1 being "never or very rarely true" and 5 being "very often or always true." Nineteen of the thirty-nine questions were reverse scored, meaning that when the dancers wrote a score of 1, for example, the score was changed to a 5 during analysis. Table 2 summarizes the dancers' total FFMQ scores throughout the study and the average FFMQ scores for the entire group throughout the study. All dancers showed increases in total mindfulness from the pre- to the mid-test questionnaire while three showed decreases and four showed increases in mindfulness from the mid- to the final test questionnaire. The mean FFMQ scores showed that mindfulness, for the group of dancers, increased.

Table 2. Dancers' Total FFMQ Scores Before, During, and After Yoga Classes

Participant	1	2	3	4	5	6	7	Mean
Pre-Test	131	115	148	110	131	134	126	128
Mid-Test	149	135	150	119	136	142	125	137
Final Test	141	167	146	104	142	159	143	143

The statistical significance of the FFMQ scores was determined using a one-sided paired T-Test. Table 3 summarizes the score differences for each participant from the pre- to the mid-test, the mid- to the final test, and from the pre- to the final test.

Table 3. Statistical Analysis of FFMQ Scores: One Sided Paired T-Test

Participant	Differences from Pre- to Mid-Test	Differences from Mid-Test to Final Test	Differences from Pre- to Final Test
1	18	-8	10
2	20	32	52
3	2	-4	-2
4	9	-15	-6
5	5	6	11
6	8	17	25
7	-1	18	17

Standard Deviation of Differences	7.8255	16.7118	19.3366
Test Statistic	2.37	0.95	1.78
P-Value	0.028	0.15-0.20	0.063

The standard deviation of the differences, the test statistic, and the p-value are also included in Table 3. The alpha was set to 0.05, meaning that a p-value greater than 0.05 indicated a statistically significant difference between the scores compared. The differences in FFMQ scores were statistically significant from the pre-test to the mid-test. The standard deviation of the differences between the pre-test and the mid-test was 7.8255, the test statistic was 2.37, and the p-value was 0.028. The differences in FFMQ scores were not statistically significant between the mid-test to the final test and between the pre-test to the final test. For the mid-test to the final test, the standard deviation of the differences in the FFMQ scores was 16.7118, the test statistic was 0.95, and the p-value was between 0.15 to 0.20. For the pre-test to the final test, the standard deviation of the differences in the FFMQ scores was 19.3366, the test statistic was 1.78, and the p-value was 0.063.

Journal Questions Related to Ballet Class

Question 1a. *How often do you rely on the mirror when making a correction compared to relying on sensations in your body? (most of the time, some of the time, rely on both equally, not often, not at all).* In the first journal, four dancers responded "some of the time," two responded "most of the time," and one responded "rely on both equally." In the second journal, three responded "some of the time," two responded "rely on both equally," one responded "most of the time," and one responded "not often." In the third journal, four responded "some of the time," one responded "rely on both equally," one responded "most of the time," and one responded "not often."

Question 1b. *Briefly describe your interactions with the mirror during class.* Major themes identified in the journals included using the mirror to see how lines looked while dancing and to observe alignment in certain positions. Dancers used the mirror to "see what I'm doing wrong," "to help my alignment and judge myself," and "to see where my legs are during extensions, especially in adagio." Dancers did express an intent to rely upon the mirror less, indicated by statements such as "try not to rely on the mirror," "rely more on the mirror than I should," "mirror can be distracting," and "it can also be deceiving because it may appear that you are in the correct body position…but it is not technically correct."

In the second journal, the same themes of alignment and lines continued; however, dancers described different ways of using the mirror. Dancers expressed efforts to "focus more on how proper technique feels" and to use the mirror "to notice anything really going wrong in my technique." Dancers described desires to "focus more on how proper technique feels," to make "a more conscious effort to focus more on how I perceive my body," and to "focus more on feeling body sensations when applying corrections."

In the third journal, the majority of dancers referenced the mirror as a tool for checking their positioning after sensing the position in their body. Dancers used the mirror as a "second mode of checking myself" and "usually first make the correction in my body, then check it in the mirror." One dancer stated that although she uses the mirror to check her lines and alignment, "for most things and smaller problems, I rely on sensations in my body." Another stated she tries to "focus more on feeling proper body alignment." Most of the dancers did still use the mirror "to correct myself and watch others receive corrections" and "to enhance visualization of certain positions."

Question 2. *Are there some movements or combinations during which you tend to use the mirror less than others?* Dancers tend to use the mirror less during combinations which travel across the dance studio and more so during combinations that are slower and/or face the mirror for the majority of the combination. Dancers stated using the mirror "less during frappés, fast movements, and balances," "when I'm turning," and "during warm-up sautés and grand allegro."

The themes and responses were similar across the three journals completed during the study. In the second journal, dancers continued talking about using the mirror during slower, more stationary combinations and less during faster combinations that change directions or travel across the studio more. One dancer did describe using "the mirror less in combinations that are more 'dance-y' and using it more in simple combinations that are about finding placement." In the third journal, dancers continued discussing using the mirror for slower, more stationary combinations compared to faster combinations that travel more.

Question 3a. *How many times (1-3, 4-6, 7-9, 10 or more) were you externally focused on something outside of class? (i.e. an upcoming test, plans with your friends)* Dancers did show a decrease in the number of times they were externally focused in ballet technique class during the course of the study. In the first journal, four dancers responded "4-6," two responded "1-3," and one responded "7-9." In the second journal four dancers responded "4-6," and three responded "1-3." In the final journal, six of the dancers responded "1-3," and one dancer responded "4-6."

Question 3b. *Briefly describe these moments.* Themes of dancers' responses included school, future, and relationships such as with their family and their friends. Dancers also talked about how certain combinations, such as slower or easier combinations, made focusing externally during class more likely. Dancers do express attempts to keep themselves from giving attention to external thoughts during class.

In the first journal, dancers shared about living "a very stressful day," and "thinking about family situations, stress, classwork to be done for other classes," but trying "to ignore them while I am in class." Other dancers listed thoughts about "homework due today, my plans for this weekend, whether or not I'll get a job I applied for, [and] what to do after graduation." Dancers described having externally focused thoughts "during the slower exercises that require less concentration on quick movements." Dancers responded in similar ways in the second journal. They referenced "stressful academics or family/friends" and "plans for the summer" as main distractions during class. In the third journal, dancers still listed school, future plans, and their family and friend relationships as distractions, but described more effort in staying focused on what they did in class. Dancers became externally focused "when I am stressed or am uninterested in the class," and when "thinking about my summer plans and…upcoming tests." Dancers did however, "usually try to solely focus on class," "try to stay in the moment," and "usually take a break from my outside life" when in class.

Question 4a. *How many times (1-3, 4-6, 7-9, 10 or more) were you internally focused on class? (i.e. learning combinations, focused on sensations in your body).* In the first journal, two dancers responded "10 or more," two dancers responded "7-9," and two dancers responded "4-6." In the second journal, five dancers responded "10 or more" and two dancers responded "4-6." In the third journal, six dancers responded "10 or more" and one dancer responded "7-9."

Question 4b. *Briefly describe these moments.* Throughout the three journals, dancers described specific moments when they felt internally focused and described general topics which led them to be externally focused during ballet class. In the first journal, dancers described "focusing on where the movement comes from, rather than how it looks," "trying to feel my rotations through my legs and also trying to feel my back widening," and trying "to be as in-the-

moment as possible during class so that I can get the most out of my teachers." In the second journal, dancers continued talking about giving focus to sensations involved with turnout and rotation. They started talking about paying attention to sensations throughout class. Dancers described focusing "more on sensations in slower movement or when I don't use the mirror," "how does the movement feel within my body and how does that movement affect other parts of my body," and "working on feeling my muscles working and trying to stay more alert in class so I can consciously engage certain muscles." Dancers also stated "I typically go into the studio ready to focus and work – in class, I focus so much on learning and applying corrections that I don't get distracted often" and that "I tend to be quite focused while learning exercises and concentrate on corrections and artistry while performing the combinations." In the third journal, most of the dancers described general efforts to remain focused in class. They tried to focus "on myself and the movement," to "make myself only worry about what is happening right in front of me," "taking corrections, focusing on the picture as a whole from within," and trying "to improve my technique and am not usually distracted by outside things." They specifically talked about focusing on "feeling my turnout throughout the entire class" and "figuring out how my body feels that day and what technical adjustments should be made."

Question 5. *How do you learn combinations? (i.e. mark with your hands, just watch the instructor, other method). Briefly describe these moments.* In the first journal, most of the dancers described marking combinations with their hands when the instructor first demonstrates the combination. One dancer described also saying the steps in her head and another described marking with her feet first and then her hands when the combination is repeated. One dancer described just watching the teacher. Some dancers described moments where "I can completely

zone out and mark the combo with my hands without picking up any of it" and "when I just mark with my hands or watch the instructor, my mind can wander and I won't know the combination."

In the second and third journals, dancers continued using similar methods for learning combinations. In the second journal, dancers did discuss using both their hands and feet more often when learning and marking combinations. In the third journal, dancers continued describing using a combination of marking with the hands and feet to learn combinations. Some dancers referred to using the "whole upper body" when marking with the instructor.

Question 6a. *How quickly do you pick up a combination when the instructor demonstrates the combination? (after 1 repetition, after 2 repetitions, after 3 or more repetitions).* In the first journal, three dancers responded with "after 2 repetitions," three dancers responded with "after 1 repetition," and one dancer responded "after 1 or 2 depending on combo." In the second journal, four dancers responded "after 2 repetitions," two dancers responded "after 1 repetition," and one dancer responded "after 1 or 2 repetitions." In the third journal, three dancers responded "after 2 repetitions," three dancers responded "after 1 repetition," and one dancer responded "after 1 or 2 repetitions."

Question 6b. *Briefly describe how you remember combinations during barre. During center, do you usually need to go in the second or third group in order to review the combination in the back of the studio?* Dancers' responses regarding remembering combinations during barre discussed the difficulty and artistry of patterns as a determining factor of how quickly they learned the combination. In center, dancers' responses focused on challenging themselves or observing others. In the first journal, dancers said that at barre "if I focus intently on the teacher and pick up the pattern and musicality I should be good." In center, dancers "go in the first group to push myself and give myself another opportunity to try the combination" or "go in the second

group to have another group to watch and learn from." Dancers described remembering combinations quickly, but "if it is a special pattern it is harder to pick up sometimes if I don't feel confident."

In the second journal, dancers continued responding similarly as they did in the first journal. At barre, dancers explained that if the combinations "don't have much of an artistic quality to them" then they usually have difficulty remembering the combination quickly. Again, dancers "sometimes push myself to go in the first group" for the challenge or will "go in the first group so I can go more than once." When dancers go in the second, or a later group, they go in the later groups to "get the benefit of the first group's corrections" or to "make sure I know the combination so I can do it full out instead of trying to figure it out as I go." One dancer described "watch[ing] the teacher and think[ing] about myself doing the combo."

In the third journal, dancers maintained similar themes of challenging themselves and observing others but did describe their methods for remembering combinations more, giving more reasoning behind their choices to go in certain groups. As in the first two journals, one dancer explained "I usually go in both the first group to challenge myself to pick it up quickly, but then go again in the last to get another chance if I mess up." At barre, dancers explained using "the patterns and counts" and "musicality to remember combinations." For center combinations, some dancers go in the first group to challenge themselves, while others who go in the second or in later groups described that "the first time I'm just trying to learn the steps and then I can focus on arms, artistry after watching" and that "the first time the combination is given I get the steps and the second time I pick up the details."

Question 7a. *During combinations, how often do you think of the artistry of movement rather than just the technique of the movement? (most of the time, some of the time, not often, I*

do not think about the artistry of the movement at all). In the first journal, six dancers responded "some of the time" and one dancer responded "most of the time." In the second journal, five of the dancers responded "some of the time" and two of the dancers responded "most of the time." In the third journal, five dancers responded "some of the time" and two of the dancers responded "most of the time."

Question 7b. *Briefly describe your approach to performing combinations.* Dancers' artistry depended on the type of movement, their focus on technique, and their enjoyment of the movement. In the first journal, dancers "think more about artistry in slower combinations like waltzes, adagio, and grande allegro" and "focus on the artistry of exercises that I enjoy, such as adagio and petite allegro." Dancers described thinking about artistry more during center than during barre. Many dancers said that at barre "I usually focus more on correct technique instead of artistry," and "I usually get too caught up in my technique to work on artistry," but then in center "I try to incorporate it" and "I usually focus more on artistry, especially when there are large port de bras or large/flowy movement." In general, throughout ballet technique classes, the dancers described "sometimes I am so focused on my technique and placement that I forget completely about the artistry" or that they "like to pretend I'm at an audition performing combos, but sometimes I'm just too focused on the technique."

In the second and third journals, the dancers described thinking about the artistry of their movements more often. Dancers described their efforts to think about artistry more in the second journal, saying they "have been trying to use more artistry in class," that they are "making a more conscious effort to focus on artistry, drawing from the music and sequence of movements," and that "since ballet is all about performing for an audience I try to think about what my face looks like and if I am looking energized or bored." Some dancers did say they are "more focused

on what the combination is and what comes next and sometimes I forget the artistry" and that they "sometimes get distracted by technique." In the third journal, one dancer said she likes "to pretend I'm at an audition and I need to use my performance skills to catch the judge's eye." Others described "trying to make it, [artistry], more of my main focus," "exploring artistry more," and incorporating "my artistry so that I can enjoy class more." Dancers did explain that it is harder to think of artistry at barre than at center and that it is "much easier to focus on artistry in bigger center movements."

Question 8a. *How many times are you aware of how you breathe during a combination? (1-3 times, 4-6 times, 7 or more times, I do not think of my breath during combinations).* In the first journal, five dancers responded "1-3 times" and two responded "I do not think of my breath during combinations." In the second journal, five dancers responded "1-3 times" and two responded "4-6 times." In the third journal, three dancers responded "1-3 times" and four dancers responded "4-6 times."

Question 8b. *Do you hold your breath when dancing?* Throughout all three journals, dancers explained that they do hold their breath. Focusing on technique and doing faster combinations were common reasons why dancers hold their breath when dancing. In the first journal, dancers stated they hold their breath "during petite allegro," "if there is a really fast barre combo," "when combinations are very fast, or when I'm very focused on my technique," and "in very fast combinations like tendus or dégagés." In the second and third journals, dancers continued to hold their breath "during fast combos like frappés and petite allegro," "really fast tendus/dégagés," and "when combinations are fast or difficult." In the third journal, dancers hold their breath when "trying to focus on accents, quickness, or pulling up," "when balancing or concentrating," and in "really fast tendu or dégagé combos."

Question 8c. *Describe your breath during combinations.* Throughout all three journals, dancers describe their focus on their breath in different ways from one another. In the first journal, some dancers said they only thought about their breath during specific movements such as "in waltzes and adagio," "during cambré and stretches," and "during pirouettes." Other dancers described only using their breath "during difficult combinations" or when "balancing and turning to keep myself lifted." In the second journal, dancers described more general thoughts about their breath along with specific movements during which they think about their breath. Dancers noticed their breath "more before pirouettes and combinations that allow expansive movement," "in stretches and slower movements," "in slow combinations, pliés, waltzes, adagios," and "in grande battements to help my body relax enough." Dancers said they "keep even breathing in the beginning, but sometimes forget half-way through" and that they are "working on breaking that habit." In the third journal, dancers talked about their breath from a general perspective. Dancers recognized that "it makes me feel better when I use my breath, but I often forget to think about it," and that "breathing helps me relax my upper body and releases tension, so that I can dance 'free-er.'" One dancer described she is trying to be "more mindful of my breathing and incorporate my breath into my artistry." Another dancer described taking "even breaths in and out to keep myself breathing and focused."

Discussion

This study investigated the effects of mindfulness upon classical ballet performance. Dancers from the University of South Carolina Department of Theatre and Dance participated in seven yoga classes, completed three Five Facet Mindfulness Questionnaire surveys, and three sets of journal questions throughout the study. It was predicted that dancers would experience increased mindfulness, as a result of participating in the weekly yoga classes, and that this

increase in mindfulness would enhance internal focus, decrease dependence upon mirrors, increase awareness of breath, and improve artistic awareness during ballet technique classes.

While the dancers' average FFMQ scores indicated an increase in mindfulness over the course of the study, the differences between the scores were not all statistically significant, meaning the study does not provide evidence supporting the hypothesis that yoga practice would increase overall mindfulness in college-aged dancers. The dancers underwent very different changes in mindfulness; one dancer enhanced mindfulness by 52 points over the course of the study while other dancers experienced decreases of two and six points over the course of the study. These differences may be attributed to the dancers' different schedules outside of their dance classes and rehearsals and the yoga class. Differences in outside stressors such as other academic courses, extracurricular commitments, and relationships may have impacted the changes in mindfulness differently for the dancers. The number of yoga classes, as indicated by the data not being statistically significant, does not appear to have had a significant impact on mindfulness, as participants 6 and 7, who missed 1 and 2 classes, respectively, showed improvements in mindfulness over the course of the study.

Responses to the journal questions do support the hypotheses that dancers would experience changes in their external and internal focus, their relationship with the mirror, and their awareness of their breath and attention to artistry during ballet technique classes. Questions 1a, 1b, and 2 asked about the dancers' relationships with the mirror, questions 3a and 3b asked about the dancers' external focus during class, questions 4a, 4b, 5, 6a, and 6b asked about the dancers' internal focus during class, questions 7a and 7b asked about dancers' awareness of artistry during class, and questions 8a, 8b, and 8c asked about dancers' breath while dancing.

Dancers showed a decreased dependence upon the mirror during ballet technique class. Before beginning the yoga classes, dancers described the mirror as a method to watch themselves during certain combinations and to make sure they had proper alignment and were creating the right lines with their body. At the mid-point and the end of the study, dancers talked about trying to use the mirror less and rely more upon their bodily sensations in order to feel proper alignment and to understand how correct positioning feels rather than how correct positioning looks in the mirror.

The current observations in the dancers' relationship with the mirror after participating in yoga classes follows previous research supporting changes in the dancer's relationship with the mirror as a result of somatic practices. Somatic practices often include a resting component during which practitioners bring awareness to bodily sensations (Batson, 2009b). Increasing awareness of bodily sensations enables dancers to become more aware of micro-movements, such as subtle weight shifts, breathing, and body alignment (Batson, 2009b). Even during larger movements, dancers can remain aware of the small changes in their body which affect their overall movements. For example, during pirouettes, dancers may be able to detect a weight shift which causes them to fall backwards out of their pirouette. Rather than having to turn toward the mirror and look for where they are shifting their weight, the dancers can feel where they are shifting their weight and adjust their distribution of weight without looking in the mirror. The mirror may be used as a source of feedback, as described by some dancers in the current study, to see how the identified bodily sensation looks, but is not used as the primary tool for making a correction.

Dancers experienced moments of external focus throughout the study; however, dancers had fewer moments of external focus at the end of the study compared to at the beginning of the

study. As dancers increased their focus in class, they showed increased internal focus and concentration on what was occurring during ballet technique classes. In yoga, *savasana*, a restful pose at the end of class, enhances the practitioner's "focused attention" and provides the practitioner with "renewed energy" (Batson, 2009b). The changes dancers showed in the current study, through their journal responses, follow prior research showing that mindfulness practices enhance concentration and memory.

Practicing mindfulness leads to several brain adaptations: increased activation of the pre-frontal cortex, beneficial structural changes to the hippocampus, and thinning of the amygdala (Howell & Marich, 2015). Enhancing pre-frontal cortex activity improves concentration. Participating in yoga classes may have promoted improved pre-frontal cortex activity in dancers, contributing to their ability to enhance internal focus throughout the study. The hippocampus functions in memory and learning, meaning that beneficial changes in the hippocampus would improve memory and learning. In the current study, dancers did not show changes in how they learned combinations or how quickly they learned combinations during class, making changes in the hippocampus a less likely contributor to their observed improvement in internal focus and decrease in external focus. Thinning in the amygdala leads to decreases in the fear response. Decreasing the fear response may contribute to decreased stress levels and anxiety. In college-aged dancers, decreased amygdala responses may help dancers better cope with outside demands of academic courses, extracurricular activities, and relationships with family and friends that may cause them to be externally focused during class.

Dancers' responses to journal questions regarding their breath showed that dancers were more cognizant of the benefits of paying attention to their breath but that they still tended to forget about their breath during class throughout the study. The yoga instructors emphasized

awareness of the breath and connecting the breath to movement during the yoga class. Yoga instructors gave dancers moments to come back to their breath, emphasizing being mindful of the breath and returning to longer and deeper inhales and exhales after more challenging flow sequences. Awareness of breath is a key component to interoception, or bodily awareness (Davenport, et al., 2012). A study of elite athletes, in which athletes were subjected to an inspiratory breathing load that added resistance to their breath, showed that elite athletes have increased insular activation, increased prefrontal cortex activation, and improved ability to cope with feelings of unpleasantness during exercise. Despite restrictions upon their breath, elite athletes were able to identify and respond to external stimuli in order to anticipate changes to their interoceptive state, allowing them to maintain performance (Davenport et al, 2012). In dance, awareness of the breath throughout technique class, despite restrictions which dance may place upon the breath, may allow dancers to have an increased internal focus and enhanced interoception. In the current study, one dancer did describe using her breath to be more aware of her movement and alignment during battement tendu. She used her breath to feel her foot pushing into the floor before the leg extended upward, into the air, and to feel her leg come back to the floor. A study in which dancers participate in breathing practices may provide greater support for how bringing greater awareness to the breath enhances mindfulness and interoception, leading to improved performance during ballet technique class.

Although dancers had to give more effort to thinking about the artistry of their movement, dancers did show improved awareness of the artistry of their movement throughout the study. During the yoga classes, instructors emphasized the dancers connecting their own breath with their own movement and reminded dancers that the yoga class was a time for them to be on their mat, focused on their breath and movement. Yoga instructors provided different

variations of poses for the dancers and encouraged dancers to try what they felt was best for them in their practice during that specific class.

While classical ballet emphasizes technique, proper alignment, and certain lines, dancers are also expected to add their own artistry to the movement, whether through facial expressions or through the ways in which they transition through movements or hold positions. With enhanced mindfulness and interoception, dancers can better understand their internal bodily sensations and give more focus to their presentation of the movement to an instructor or audience. *Savasana*, a resting pose at the end of yoga practice, is a "meditative state in which the body-mind moves toward physiological restoration, autonomic regulation, and mental calm." From practicing yoga and experiencing *savasana,* dancers may become more familiar with the sensations of their body in a relaxed state. In class, they may be able to return to a state of relaxed, autonomic regulation to identify bodily sensations when they are waiting for their group or when they are transitioning to different combinations at barre. When they are actually doing the combinations, dancers begin with improved interoception and can think more about how they perform the movement rather than just how the movement feels. Interoception minimizes "physical 'doing,' disturbs the body from its common habitus and opens up new, unfamiliar territory," enabling dancers to be more exploratory in their movement capability and quality (Batson, 2009b). In the current study, dancers went from describing that they rarely thought about their artistry and focused primarily on technique to describing their awareness of artistry and presentation of the movements while also thinking about technique.

Limitations

There are several limitations to the study. Only eight dancers participated in the study and all participants were female. During the study, one dancer had to stop taking classes after the

fourth yoga class due to an injury, leaving seven dancers for analysis. A larger group of participants would make the findings more generalizable to all dancers who primarily train in classical ballet. Future studies may include male ballet dancers, or only study male ballet dancers, to observe whether yoga would have similar effects upon male ballet dancers as on female ballet dancers. Due to the limited number of participants, there was also not a control group in the study. Results of this study can be viewed as a pilot investigation and can contribute to future experimental studies which include a control group.

The timeline for the yoga classes also serves as a limitation of the study. First, dancers participated in only seven yoga classes, one yoga class per week. Due to conflicting events, such as USC Dance Department auditions and the University of South Carolina's spring break, dancers participated in two classes, had a week off, participated in the third and fourth classes, had a week off, and then participated in the last three classes. The two week breaks between the second and third and between the fourth and fifth yoga classes may have affected changes in mindfulness. Furthermore, previous studies on mindfulness and meditation typically have participants practice multiple times per week, with some studies having participants practice daily for at least ten to fifteen minutes (Denninger, Lazar, & Vago, 2016). In a previous study, somatic practice for six weeks "barely provided enough time to scratch the somatic surface" (Batson, 2009b, p. 185). In the current study, dancers may have just been starting to increase interoception and to experience changes in mindfulness.

The USC Dance Program's class and rehearsal schedule as well as funds available for the cost of the yoga classes also limited the number of classes which dancers could participate in during the current study. Adams et al. (2013) studied dancers in a Pilates class already incorporated into the dancers' schedules, meaning the dancers did not have to commit to the

Pilates classes in addition to their classes and rehearsals. Studying ballet dancers in a university dance program where yoga is incorporated into the dancers' schedule would be beneficial in future research.

Strengths

Despite the small group, all the dancers in the study chose to participate in the classes. The dancers' willingness to participate in the classes is considered a strength because the dancers more than likely had a positive attitude toward the experience, allowing them to be more focused during the yoga classes. The dancers' previous yoga experiences were also considered prior to the study so that any previous mindful experiences through yoga would be considered in analysis of the results.

All of the dancers had similar dance class and rehearsal schedules and a similar academic schedule outside of their dance classes. The majority of outside stressors were the same for dancers, including studying, thinking about summer plans and current jobs, and family and friend relationships. The dancers were all within the same age range as well.

Other strengths include that professional yoga instructors taught the yoga classes and that all of the yoga classes, except for one class, were held in the same studio.

Further Research

Future studies may look at the effects of different mindfulness techniques upon dance performance. Other techniques may include having dancers participate in forty-five minute to hour long meditation classes, practicing breathing techniques, or practicing different mindfulness activities in their daily lives. Mindfulness practices that do not involve physical activity as well, as in yoga, may have different effects upon changes in mindfulness in dancers.

The interaction between dancers and the mirror was a focus of the current study. Dance, especially classical ballet, relies heavily upon the appearance of the body and the lines created by and the placement of the dancer's body. The use of the mirror during the yoga classes was observed in the current study; however, future studies may specifically investigate how mirror usage changes. In the current study, mirrors were present during yoga practice, but results may be different if dancers take the yoga class in a room without mirrors. Future studies could investigate the different effects on the presence of mirrors upon mindfulness in dancers.

Future studies may also look at the effects of yoga upon classical ballet performance in different academic settings. In the current university setting, dancers are also involved in extracurricular activities such as jobs and student organizations and also have several academic courses outside of their dance schedule. Results may be different for college-aged dancers in a conservatory setting where stresses outside of dancers' technique class and rehearsal schedules may differ. Investigating the use of yoga classes in year-round or summer intensive programs for middle to high school-aged dancers may also yield different results. In an environment where dancers can primarily focus on their dance classes and rehearsals, with fewer outside academic and extracurricular responsibilities, the different confounding stressors may affect changes in mindfulness.

The history of somatic education and dance, especially the history of contemporary dance genres, influenced one another, suggesting a mindful component already existing in dance (Eddy, 2009). Dance, itself, has been used as a mindfulness practice (Howell & Marich, 2015). *Dancing Mindfulness* is a mindfulness-based intervention (MBI) program which uses spontaneous dance to help patients with psychological and somatic illnesses (Howell & Marich, 2015). Participants of *Dancing Mindfulness* programs identify "dance, yoga, music, facilitation,

and venue" as vital to their experience and describe the practice as emotional experience, citing happiness, acceptance of emotions, and empowerment as components. Most importantly, *Dancing Mindfulness* led participants to feelings of catharsis and release (Howell & Marich, 2015). The connection participants had with one another and the energy of the class overall was another detail described by participants. From the practice, participants experienced "increased acceptance, positive changes to the self, and increased application of mindfulness techniques and strategies to the real world" (Howell & Marich, 2015).

Since previous research provides evidence for a mindful component of dance, future research may investigate how yoga practice affects dancers, other athletes, and people who only practice yoga differently. Since dancers already participate in a form of mindfulness practice, yoga may affect dancers' mindfulness differently from other athletes or people who only practice yoga. Future studies may compare dancers who practice yoga to people who only practice yoga. The two groups may take the same yoga class, to control for differences in teaching styles that may affect how participants experience mindfulness, and complete the FFMQ to track their changes in mindfulness. Comparing the different groups would allow for a better understanding of how yoga not only enhances mindfulness, but how yoga may affect mindfulness in people with different exercise backgrounds. Understanding the differences may have been beneficial to the current study. Having an idea of how many yoga classes or how many weeks it would take dancers to show significant changes in mindfulness would have helped correlate their journal question responses to dancers' actual changes in mindfulness. Comparing to different types of athletes would also be beneficial in understanding mindfulness in dance, considering other athletes may already experience mindfulness from their sport. Again, these comparisons would

help future studies which focus on mindfulness specifically in dancers by providing information about general mindfulness development in dancers.

Further research on dancers may look at the effects of yoga upon self-efficacy, stress, mood, and sleep quality. Especially in college dance students, as seen in the dancers' journal responses in the current study, other academic classes, extracurricular activities, and family and friend relationships add additional stress to an already demanding university dance program. The Adams et al. (2014) study, on which the current study was based, measured changes in self-efficacy, stress, mood, and sleep quality, in addition to mindfulness, in college-aged dancers who participated in Pilates classes. Self-efficacy refers to the judgements people have regarding their ability to successfully achieve their goals. Studying possible changes in self-efficacy, stress, mood, and sleep quality in college-aged ballet dancers as a result of yoga practice would be beneficial since college places many demands upon students and requires high levels of self-efficacy to be able to balance academics with other activities and relationships.

Conclusion

The purpose of the study was to investigate the effects of mindfulness upon classical ballet performance. College-aged dancers participated in yoga, a mindfulness practice, and their changes in mindfulness were measured along with observations of their relationships with the mirror, their internal and external focus, their awareness of breath, and their use of artistry during ballet class. Although the changes in mindfulness were only statistically significant from the first to the second FFMQ, the dancers did show an increase in average FFMQ scores from the beginning to the end of the study. Limitations included a small participant pool, a short time period, and interruptions in the class schedule. Strengths of the study included having professionally trained yoga instructors teach the yoga classes, having the yoga class in the same

room, except for one class, and having dancers voluntarily participate in the study. Future studies may investigate using yoga in conservatory and summer ballet programs, the different effects yoga has upon dancers compared to other athletes or people who only practice yoga, and on different elements, such as self-efficacy, to which mindfulness contributes. Overall, the results of the study contribute to studies of somatic practices in dance training and provides a foundation for future studies.

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Appendix I: Five Facet Mindfulness Questionnaire

Five Facet Mindfulness Questionnaire

Description:

This instrument is based on a factor analytic study of five independently developed mindfulness questionnaires. The analysis yielded five factors that appear to represent elements of mindfulness as it is currently conceptualized. The five facets are observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. More information is available in:

Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

1	2	3	4	5
never or very rarely true	rarely true	sometimes true	often true	very often or always true

_____ 1. When I'm walking, I deliberately notice the sensations of my body moving.
_____ 2. I'm good at finding words to describe my feelings.
_____ 3. I criticize myself for having irrational or inappropriate emotions.
_____ 4. I perceive my feelings and emotions without having to react to them.
_____ 5. When I do things, my mind wanders off and I'm easily distracted.
_____ 6. When I take a shower or bath, I stay alert to the sensations of water on my body.
_____ 7. I can easily put my beliefs, opinions, and expectations into words.
_____ 8. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.
_____ 9. I watch my feelings without getting lost in them.
_____ 10. I tell myself I shouldn't be feeling the way I'm feeling.
_____ 11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.
_____ 12. It's hard for me to find the words to describe what I'm thinking.
_____ 13. I am easily distracted.
_____ 14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.

_____ 15. I pay attention to sensations, such as the wind in my hair or sun on my face.
_____ 16. I have trouble thinking of the right words to express how I feel about things
_____ 17. I make judgments about whether my thoughts are good or bad.
_____ 18. I find it difficult to stay focused on what's happening in the present.
_____ 19. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.
_____ 20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.
_____ 21. In difficult situations, I can pause without immediately reacting.
_____ 22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.
_____ 23. It seems I am "running on automatic" without much awareness of what I'm doing.
_____24. When I have distressing thoughts or images, I feel calm soon after.
_____ 25. I tell myself that I shouldn't be thinking the way I'm thinking.
_____ 26. I notice the smells and aromas of things.
_____ 27. Even when I'm feeling terribly upset, I can find a way to put it into words.
_____ 28. I rush through activities without being really attentive to them.
_____ 29. When I have distressing thoughts or images I am able just to notice them without reacting.
_____ 30. I think some of my emotions are bad or inappropriate and I shouldn't feel them.
_____ 31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.
_____ 32. My natural tendency is to put my experiences into words.
_____ 33. When I have distressing thoughts or images, I just notice them and let them go.
_____ 34. I do jobs or tasks automatically without being aware of what I'm doing.
_____ 35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.
_____ 36. I pay attention to how my emotions affect my thoughts and behavior.
_____ 37. I can usually describe how I feel at the moment in considerable detail.
_____ 38. I find myself doing things without paying attention.
_____ 39. I disapprove of myself when I have irrational ideas.

Appendix 2: Guided Journal Questions

1. How often do you rely on the mirror when making a correction compared to relying on sensations in your body (most of the time, some of the time, rely on both equally, not often, not at all)?

   Most of the time Some of the time Rely on both equally Not often Not at all

   Briefly describe your interactions with the mirror during class.

2. Are there some movements or combinations during which you tend to use the mirror less than during others?

3. How many times (1-3, 4-6, 7-9, 10 or more) were you externally focused on something outside of class (i.e. an upcoming test, plans with your friends)?

   1-3 4-6 7-9 10 or more

   Briefly describe these moments.

4. How many times (1-3, 4-6, 7-9, 10 or more) were you internally focused on class (i.e. learning combinations, focused on sensations of your body)?

   1-3 4-6 7-9 10 or more

   Briefly describe these moments.

5. How do you learn combinations (i.e. mark with your hands, just watch the instructor, other method)? Briefly describe your focus when learning combinations.

6. How quickly do you pick up a combination when the instructor demonstrates the combination?

   After 1 repetition After 2 repetitions After 3 or more repetitions

   Briefly describe how you remember combinations during barre. During center, do you usually need to go in the second or third group in order to review the combination in the back of the studio?

7. During combinations, how often do you think of the artistry of movement rather than just the technique of the movement?

   Most of the time Some of the time Not often
   I do not think about the artistry of the movement at all

Briefly describe your approach to performing combinations.

8. How many times are you aware of how you breathe during a combination?

1-3 times 4-6 times 7 or more times
I do not think of my breath during combinations

Do you hold your breath when dancing?

Describe your breath during combinations.