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Editors' Page

Welcome from the Editors

It is with great excitement that we introduce this revived issue of the *Journal of the International Alliance for Health, Physical Education, Dance, and Sport (JIAHPEDS)*. Our journal serves as a peer-reviewed, open-access platform dedicated to advancing global research, education, and advocacy in the fields of health, physical education, dance, sport, and related disciplines.

The mission of *JIAHPEDS* is to promote culturally-informed, evidence-based scholarship that supports healthy, active lifestyles and enhances well-being worldwide. As an international journal, we aim to connect scholars, educators, and practitioners from diverse contexts to foster dialogue, share innovative practices, and encourage collaboration across borders.

This issue reflects the collective efforts of authors, reviewers, and the editorial team who believe in the power of scholarship to transform communities. As the journal moves forward, we remain committed to providing a space where ideas can be exchanged freely and inclusively, ensuring that knowledge reaches a global audience without barriers.

Acknowledgment of Reviewers

The editors extend our deepest gratitude to the reviewers whose thoughtful feedback and scholarly expertise have been invaluable to the development of this issue. Their commitment to rigor and mentorship reflects the collaborative spirit that defines the *JIAHPEDS* community.

We gratefully acknowledge the following reviewers for their service:

- Dr. Grayson Elmore, Ph.D., ATC, CSCS — Austin Peay State University
- Dr. Amanda Estep, Ph.D, ACSM EP-C — Austin Peay State University
- Dr. Reid Fisher, Ed.D., ATC, LAT — University of the Incarnate Word
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- Professor Darby Wilde, MFA — Illinois State University

Without their dedication, the high quality of the work presented here would not have been possible.

Closing Note

We invite you to join us in shaping the future of *JIAHPEDS* — whether as an author, reviewer, or reader. Together, we can continue to advance research, promote advocacy, and inspire action that contributes to healthier, more active, and more connected communities across the globe.

With appreciation,

Dr. Tyler Nolting, Editor-in-Chief

Dr. Emily Dow, Associate Editor

Table of Contents

Gender and Racial Differences in First-Year College Students' Body Dissatisfaction and Social Physique Anxiety

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Author Note

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Abstract

Body dissatisfaction (BD) and social physique anxiety (SPA) have been well documented in adolescents and mostly females. However, it is understudied among college students. The primary purpose of the study was to examine BD and SPA among college first-year students, while the examination of the differences in BD and SPA by gender and race was the secondary purpose. First-year college students (N=46) participating in a fitness-for-life course completed three questionnaires: (a) the Body Dissatisfaction sub-scale of the Eating Disorder Inventory-2, (b) the seven-item version of the Social Physique Anxiety Scale, and (c) a demographic survey to collect their age, gender, and ethnicity. MANOVA was used to examine BD and SPA differences in gender and race. First-year college students reported a relatively low level of BD and SPA. BD was found to be associated with SPA moderately and significantly. It was found that Asian students reported significantly more negative BD than their White counterparts, while no gender difference in BD was significant. In addition, females reported a significantly higher level of SPA than male students. No race difference in SPA was found, however. Gender and race significantly influence BD and SPA among first-year college students, which need to be taken into consideration when interventions are implemented.

Keywords: first-year college students, body image, social anxiety, sex and ethnicity

Gender and Racial Differences in First-Year College Students' Body Dissatisfaction and Social Physique Anxiety

College years are unique and challenging because it is the first time that college students live independently and transition into the real world, even though they do not have the same full responsibilities as other adults (McGaughey, 2018; Rothberger et al., 2015; You & Shin, 2016). The time and intellectually demanding academic activities and frequent social interactions with other peers on campus have resulted in a high level of stress and social anxiety (Beiter et al., 2015; Eubank & DeVita, 2021). As college students go through significant emotional and mental growth to become physically and mentally mature, they also develop their body image concept, which is one of the most crucial aspects of their mental states (McGaughey, 2018). Therefore, this strand of research is of concern, considering that appropriate body image may help college students complete their academic studies successfully (Eubank & DeVita, 2021).

Overall, body image is conceptualized as a multidimensional psychological construct that consists of four domains: global satisfaction, affective, cognitive, and behavioral facets (Alleva et al., 2015; Menzel et al., 2011). Among these four domains, the global satisfaction [i.e., body dissatisfaction (BD)] and affective facets [i.e., social physique anxiety (SPA)] have received a lot of attention from many researchers (e.g., Demir, 2022; Karazsia et al., 2017; McGaughey, 2018; Pritchard et al., 2021).

Specifically, BD refers to the degree that individuals experience the difference between their self-perception of weight and body shape and ideal weight and body shape (Kakeshita & Almeida, 2008; Sun et al., 2018). Therefore, when self-perception of weight and body shape is the same as the ideal weight and body shape, an individual is satisfied with his/her own body. An individual perceives his/her own body to be bigger than the ideal body he/she desire when self-perception of weight and body shape is larger than the ideal weight and body shape (Kakeshita & Almeida, 2008). However, to date, there is not a universally accepted ideal regarding weight and body shape, given that the ideal body image varies across time (Karazsia et al., 2017), cultures (Ai et al., 2025; Ferreira et al., 2018), and gender (Glashouwer et al., 2020).

In terms of instruments used to measure BD, the Body Dissatisfaction sub-scale of Eating Disorder Inventory-2 (EDI-2) has been one of the most widely used measures in research (Abdollahi et al., 2023; Clinton & Birgegard, 2017; Garrusi et al., 2017; Karazsia et al., 2017; Segura-García et al., 2015). EDI-2 is a self-reported questionnaire with nine items using a six-point Likert scale assessing concerns about the size or shape of an individual's body parts and areas (Garner, 1991). The level of agreement to the nine items is measured using one (never) to six (always), resulting in a higher score for greater BD (Chang et al., 2016; Karazsia et al., 2017). The reliability and validity of EDI-2 have been found to be acceptable in different settings (Frieling et al., 2009; Gilbert et al., 2009; Jung et al., 2009; Lavender & Anderson, 2010). In addition, EDI-2 has also been translated into different languages and showed acceptable reliability and validity (Nevonen et al., 2006; Parra-Fernández et al., 2018). Importantly, it has been suggested that the total score of the nine items, instead of the average of BD, ought to be used to measure BD (Garner, 1991; Parra-Fernández et al., 2018).

On the other hand, as noted above, SPA is also one of the four domains of body image, which has been identified as a form of body-related social anxiety related to perceptions that others are negatively evaluating an individual's body or physical figure (Hagger et al., 2010; Rothberger et al., 2015; Sabiston & Chandler, 2009). The centerpiece of SPA lies in the self-perception of others' negative evaluation of his or her physique (Rothberger et al., 2015). Therefore, SPA is both physical and psychological (Hahn et al., 2025; Yaman, 2017) and can lead to the development of severe physical (e.g., eating disorder) and psychological (i.e., low self-esteem) problems if no interventions are implemented in a timely manner (Hagger et al., 2010; Koyuncu et al., 2010; Sabiston et al., 2014; Yaman, 2017).

Like that for BD, there are also various measures for SPA (Hagger et al., 2010; Sáenz-Alvarez et al., 2013). The Social Physique Anxiety Scale with seven items (SPAS-7) (Hart et al., 1989) has been widely employed to assess SPA in different countries (Alharballeh & Dodeen, 2023; Fletcher & Crocker, 2014; Guan et al., 2025; Pacewicz et al., 2023; Policardo et al., 2023). SPAS-7 uses a five-point Likert scale with a higher score for a greater SPA (Hart et al., 1989). It has also been translated into multiple languages (Pacewicz et al., 2023; Policardo et al., 2023). Multiple studies have indicated that the

reliability and validity of the SPAS-7 were acceptable in various samples and settings (Guan et al., 2025; Policardo et al., 2023; Sáenz-Alvarez et al., 2013).

Literature Review on BD and SPA by Gender and Race

To help readers better understand the current study, it is deemed necessary to examine previous research on the topic (i.e., BD and SPA) in the population of college students. Positive body image, which is not merely the opposite of negative body image (Tylka & Wood-Barcalow, 2015; Wood-Barcalow et al., 2010), was found to reduce the risk for eating disorder (Lokken et al., 2008; Romano & Heron, 2022; Webb et al., 2018) and to be related to various other health indicators such as less depression, more exercise, higher self-esteem, and more likely to protect their skin from UV exposure and damage (Gillen, 2015; Romano & Heron, 2022). In addition, exercise on a regular basis can help female college students maintain a positive body image (Koyuncu et al., 2010; Romano & Heron, 2022; Tylka & Homan, 2015). In essence, increasing attention has been given to research on positive body image in the past (Halliwell, 2015; Tylka & Wood-Barcalow, 2015). Comparing students' own body image to pictures of thin and attractive models, driven by the influence of social media and other social institutions, college students tended to have significantly higher negative images of their own body than they had before seeing the models' pictures (Fitzsimmons-Craft et al., 2014; Koyuncu et al., 2010; Sides-Moore & Tochkov, 2011). More importantly, the positive body image was found to be associated with a unique pattern of superior well-being, such as relative content with their appearance, less body image emotional distress, and a favorable quality of life (Tylka & Wood-Barcalow, 2015).

BD, Gender, and Race

Regarding gender differences in body image, as might be expected, the majority of studies were conducted in female college students (Abdollahi et al., 2023; Chang et al., 2016; Koyuncu et al., 2010; Lim & You, 2017; Nevonen et al., 2006; Shin et al., 2017; Zhang et al., 2018). To date, fewer studies on gender differences in body image have been available in the literature (Romano & Heron, 2022). Among the existing research on the topic of college students, it was reported that there was a significantly higher percentage of college females who were dissatisfied with their body shape than their male counterparts

(DeBate et al., 2008; Neighbors & Sobal, 2007). Similar results were also found in a study conducted by Frederick and colleagues (2007). However, Dye (2016) found no gender differences in BD.

Race difference in BD has also been researched in the college student population (Dye, 2016; Hesse-Biber et al., 2010; Javier & Belgrave, 2015; Lim & You, 2017; Menon & Harter, 2012; You & Shin, 2016). Asian college females were found to have more negative body image than other ethnic groups (Chang et al., 2016; Javier & Belgrave, 2015). However, evaluative concerns perfectionism (ECP) was found to affect the BD of White female college students more than their Asian counterparts (Chang et al., 2016). Among Asian college students, Korean female students had more severe BD than Taiwanese female students (Noh et al., 2018). Different findings were found in India, with 51.04% and 32.29% of female Indian college students found to perceive their body image as good and excellent, respectively (Sachdeva et al., 2012). Although White college females have been found to have lower BD than African American females (Russell & Cox, 2003), the difference was deemed small (Grabe & Hyde, 2006). Interestingly, African American female college students tended to accept greater body size than other ethnic groups and showed a significantly lower level of BD than White female students (Russell & Cox, 2003). Hispanic immigrant college students were under pressure to have thin bodies because of the acculturative stress (Forbes & Frederick, 2008; Menon & Harter, 2012).

SPA, Race, and Gender

Regarding SPA, race, and gender, it has been found that college students with weight problems tended to have higher SPA, while the same trend was not found among males (Hahn et al., 2025; Tsartsapakis et al., 2023; Tsartsapakis & Zafeiroudi, 2025). Guan and colleagues (Guan et al., 2025) noted that female Kinesiology majors had higher SPA scores than their male counterparts.

BD and SPA by Gender and Race

With respect to research on both BD and SPA in college students, only a handful of studies have been reported in recent years (Barnes et al., 2020; Koyuncu et al., 2010; Pritchard et al., 2021; Tsartsapakis et al., 2023). Although a complicated relationship has been reported between BD and SPA in both female and male college students (Barnes et al., 2020; Koyuncu et al., 2010; Pritchard et al., 2021),

with women tending (but not always) to have a stronger correlation between BD and SPA than that for males. Moreover, a study performed by Aysha and colleagues (Aysha et al., 2024) indicated that BD was a predictor of SPA: a higher BD score was associated with a higher SPA level when gender was not considered. Regarding BD, SPA, and race, fewer studies have been available in the literature. It was also found that African American female students had significantly lower BD and SPA than White females (Koyuncu et al., 2010).

Gaps in the Literature

In essence, the existing literature has shown that BD and SPA were significantly correlated (Aysha et al., 2024; Tsartsapakis et al., 2023), even though the correlation value was small (Koyuncu et al., 2010). In addition, BD and SPA were experienced to different extents among male and female students (Sabiston & Chandler, 2009). Among college students of different ethnic groups, Asian students had worse BD and SPA than other ethnic groups (Evans & McConnell, 2003; Zhang et al., 2018). In addition, a thorough examination of previous studies on the topic indicated that research simultaneously examining BD and SPA is rare for college students, considering that most existing studies explored either BD or SPA. The examination of BD and SPA together would help us better understand college students' body image and shed new light on the design of interventional studies on creating positive body image among college students in the future.

Purposes and Hypotheses of the Study

The purposes of this study were to explore the correlation between BD and SPA, and gender and racial differences in first-year college students' body images. It was hypothesized that: (a) BD and SPA were positively correlated; (b) female college students experienced a significantly higher level of BD and SPA than their male counterparts; and (c) Asian students experienced a significantly higher level of BD and SPA than their White counterparts.

Methods

Participants

College freshmen ($N = 46$, $M_{age} = 19.62 \pm 2.33$ years) from a large state university in the U.S. consented to participate in this study. All participants were enrolled in an elective fitness-for-life class. The number of female and male participants was equal ($n = 23$). Half of the participants were White ($n = 23$, 50%), and Asian participants consisted of 30.43% of the sample. The rest of the participants were African American ($n = 2$, 4.35%), Hispanic/Latino ($n = 6$, 13.04%), and Biracial ($n = 1$, 2.17%). The average BMI of the participants was within the healthy range ($M_{BMI} = 23.19 \pm 3.50$) for both males ($M_{BMI} = 23.43 \pm 2.77$) and females ($M_{BMI} = 22.91 \pm 4.26$).

Measures and Procedures

This study was approved by the university's Institutional Review Board before any data collection began. The participants were asked to complete an online survey in class, which utilized the Qualtrics survey tool and included three questionnaires. The first two questionnaires were the Body Dissatisfaction sub-scale of EDI-2 (Garner et al., 1991) and the seven-item version of SPAS-7 (Hart et al., 1989). The two scales measured participants' BD and SPA levels, respectively. EDI-2 uses a 6-point Likert response format, ranging from “never” (scoring one) to “always” (scoring six). A total of nine items were included in the EDI-2 BD subscale. Similarly, SPAS-7 uses a five-point rating scale, with responses ranging from “not at all characteristic of me” (scoring one) to “extremely characteristic of me” (scoring five), with a total of seven items measuring a single domain. As noted earlier, the two scales have been validated among nonclinical adults (Motl & Conroy, 2000; Thiel & Paul, 2006). EDI-2 showed a reliability (internal consistency) of 0.89 (Gleaves et al., 2014), whereas SPAS-7 showed a test-retest reliability of 0.94 (Scott, Burke, Joyner, & Brand, 2004). Construct validity indices were also within the acceptable range for SPAS-7 (Policardo et al., 2023) and EDI-2 (Clinton & Birgegard, 2017). A demographic questionnaire collected participants' gender, age, and ethnicity. No personal information was collected, and only a cover letter was used to provide students with the purposes of the study.

Data Analyses

Due to the non-clinical nature of the participants, the total score of the EDI-2 Body Dissatisfaction subscale and the mean score of SPAS were calculated to represent participants' BD and SPA levels, respectively. Also, due to the small sample sizes of other racial groups, racial difference was examined between White and Asian students. Age and BMI were not examined due to their small variations.

To examine gender and racial differences in body images (i.e., BD and SPA), two sets of one-way MANOVA were performed in SPSS 29.0. Before MANOVA, a power analysis was conducted in G*Power to determine if the minimum sample size for a MANOVA with two measures and two groups was met. Statistical power, effect size, and α were taken to be .80, .25, and .05, respectively. The sample size of this study ($N = 46$) passed the suggested minimum sample of 42. Correlation analysis between BD and SPA showed a moderate correlation ($r = 0.57$, $p < 0.001$), which further substantiated the use of MANOVA to explore gender and racial differences in body images (Meyers et al., 2017).

Assumption checks for MANOVA indicated no violation of linearity, multicollinearity, sphericity, and normality in any gender and racial subgroups. However, the sample size was different for gender ($n = 46$) and race ($n = 37$). Therefore, two simple MANOVAs were performed to test differences in BD and SPA by gender and race, respectively. The follow-up tests were performed to identify potential subgroup differences in BD and/or SPA for a significant MANOVA. The effect size (i.e., η^2) was calculated using SPSS 29.0. We used .01, .06, and .14 as the cutoff values for a small, medium, and large effect size, respectively (Meyers et al., 2017; Stevens, 2009).

Results

Overall BD and SPA, and the Correlation between the Two Variables

Descriptive statistics of BD and SPA in the total sample, gender, and racial subgroups are presented in Table 1. Given that the highest score of BD could be 54, the average score of 25.39 (SD =

7.21) was considered low. A similar low result was also found for SPA [i.e., mean = 2.75 (.83)] as a group. The correlation of BD and SPA was moderate and significant (r=.57, $p < 0.01$).

Gender Differences in BD and SPA

MANOVA results showed a non-significant difference in BD between male and female [Wilks' Lambda = 0.89, $F_{(2, 43)} = 2.62$, $p = 0.08$]. Because the MANOVA test was not significant, no follow-up test was performed.

Racial Differences in BD and SPA

Between Asian and White students, their BD differed significantly [Wilks' Lambda = .61, $F_{(2, 34)} = 10.95$, $p < 0.001$]. The effect of size was large (i.e., $\eta^2 = .39$). Post-hoc analysis results indicated that Asian students report a significantly higher level of BD than White students [$F_{(1, 35)} = 8.37$, $p = 0.007$]. Students of both ethnic groups reported similar levels of SPA, and no significant results were found (see Table 2).

Discussion

Body image, which is complex, subjective, dynamic, fluid, and culturally-situated, is an individual's perceptions, feelings, intended behaviors, and satisfactions regarding his/her body (Alharballeh & Dodeen, 2023; Catikkas, 2011; Pritchard et al., 2021; Tsartsapakis et al., 2023). Of greater importance, body image is not only related to aesthetic attributes, but also closely connected to eating- and weight-associated behaviors (Shagar et al., 2017), mental health (Gillen, 2015), and quality of life (Duarte et al., 2015). College students are a unique young adult population who are very sensitive to others' perceptions of their body image while beginning to form their own identity (Chu et al., 2008; Voelker et al., 2015). In addition, college students' mental health, which is the basis for successful academic learning, is also strongly related to their body image (Gillen, 2015). As such, this strand of research warrants more attention from professionals in education and public health.

As noted earlier, the purposes of the current study were twofold: (a) examining the overall BD and SPA among college freshmen who were enrolled in a fitness course at a large state university in the

US; and (b) identifying the degree to which BD and SPA would be varied by gender and race. The current study contributed to our knowledge about first-year college students' BD and SPA, which is an understudied strand of research. There were three results that were worth noting. First-year college students demonstrated low scores in both BD and SPA in general, indicating that participants had positive body image. Second, the Asian group had significantly worse BD than their White counterparts, while no difference in SPA was found in race. And third, a significant SPA difference was found in gender, given that females reported a higher level of SPA than males.

Overall BD and SPA, and the Correlation between the Two Variables in College Freshmen

Given that the mean scores of BD and SPA represented the neutral point of BD and SPA, it is encouraging that a lower than the average score for BD and SPA, respectively, was found by the current study. Previous research has suggested that BD and SPA are associated with weight-related behaviors and lifestyle choices (Ganem et al., 2009; McGaughey, 2018; Romano & Heron, 2022). Therefore, it is critical to control the two variables by maintaining low scores of BD and SPA. Unfortunately, no data are available for comparisons with findings reported by other studies on the topic since ours is the first study examining college freshmen's BD and SPA together. More studies on the topic are needed in the future.

It is important to point out that the moderate correlation between BD and SPA found in the current study is in line with what has been reported in the literature (Tsartsapakis et al., 2023), indicating that BD and SPA are relatively independent. As such, attention should be given to both BD and SPA. Examining BD or SPA only may produce incomplete results.

Differences between BD and SPA in Gender

It was unexpected that gender differences in BD were insignificant, given that a number of studies have suggested that females tend to have worse BD than male students because females pay more attention to their physique (Blair et al., 2017). However, such a finding is encouraging as it may indicate that female college students in the current study feel very good about their body image, regardless of their body shape. Unfortunately, no BMI data were available to support the above contention. Thus, it is

difficult to judge if all participants had an acceptable weight. On the other hand, the significant difference in SPA by gender was in line with what has been reported in the literature that females had higher SPA than males in college student populations (Hagger & Stevenson, 2010; Mülazimoğlu-Balli et al., 2010). Considering that SPA is related to others' perceptions of his or her body image, it is important to better educate female students not to be affected by others' opinions on their body image so that their SPA can be reduced.

Differences between BD and SPA in Race

It has been well documented that Asians have worse BD and SPA among all ethnic groups, caused by the cultural preference for thinness among Asians (Gilbert et al., 2009; Rakhkovskaya & Warren, 2014; Zhang et al., 2018). Therefore, it is not surprising that our study found that Asian students had a significantly higher level of BD than their White counterparts, which may have resulted from cultural differences, given that Asian females in general, and teenage girls, tend to pursue extreme thinness (Warren & Akoury, 2020). As such, first-year Asian female college students may experience more BD than other minority groups in the US (Liao et al., 2020; Warren & Akoury, 2020). However, the SPA difference was insignificant, suggesting that the level of social pressure was about the same between the two groups. This result may indicate that the two groups lived in the same social environment or reacted the same to different social environments. Unfortunately, to the best of our knowledge, no data are available to confirm this contention. Future research is needed to examine factors influencing first-year college students' SPA. On the other hand, research has indicated that Asian female college students tend to endorse American mainstream beauty standards (AlShebali, 2023; Liao et al., 2020; Rakhkovskaya & Warren, 2014; Warren & Akoury, 2020). Given that the Asian participants in the current study grew up in the US and their BD was worse than that of their White counterparts, more research is needed to explore this situation from a cultural perspective. Such a result may also be caused by the sample differences, as our study only included first-year college students, while the study performed by Evans and McConnell (2003) consisted of all types of college students. Regardless, the data

from the current study echoed the need for implementing culturally relevant weight-related interventions in college students (Azzarito et al., 2017; Claudat et al., 2012; DiGioacchino et al., 2001).

Limitations

The study has some limitations. First, the sample size was small. As such, caution needs to be exercised when interpreting the results found in the current study. Second, participants were enrolled in an elective course related to fitness. There is a need to randomly sample first-year students to provide a more representative sample of freshmen in college. Third, the participants' BMI was within the acceptable range. The results may be different when using samples with unacceptable BMI values, such as underweight, overweight, or obese. Fourth, although race was one of the variables included in the study, only White and Asian American participants were investigated in the study. The exclusion of African American, Hispanic, and Biracial groups has limited the scope of the study. Future research should include the above three ethnic groups to holistically examine the effects of race on BD and SPA. And fifth, there is a lack of data on cultural influences, influences of social media, and socioeconomic status that could impact BD and SPA. First-year college students come to college with these body image constructs, and more information is needed to provide appropriate support for students in the future.

Practical Implications

Based on the findings of the study, the following practical implications were drawn: (a) University health counseling centers can consider offering workshops, such as SPA management, and incorporate BD as a potential warning indicator for anxiety symptoms. Through a comprehensive assessment of BD, they can provide targeted SPA treatment plans for college students or refer them to other healthcare providers; (b) Health promotion professionals should more broadly consider the influence of factors such as race and gender on BD. They should understand BD from a more comprehensive perspective to develop targeted interventions for SP and more effectively promote the mental health of college students. (c) Educators should be aware that assessing and monitoring college students' BD and SPA is of concern. They should be dedicated to developing healthy body image-related

programs for students of different races to address potential racial and gender inequality issues in anxiety through such programs.

Conclusions

Despite these limitations, this research contributed to our understanding of the BD and SPA for first-year college students. From the international perspective, the findings generated from our study suggested that more attention should be given to the role of gender and race in BD and SPA when designing future longitudinal and/or intervention studies.

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Table 1. Descriptive Statistics of Body Dissatisfaction (BD) and Social Physique Anxiety (SPA) by Gender and Race

Variable	**Total Sample *M*(S*D*)**	**Gender (*SD*)**		**Race (*SD*)**	
		Male (*n* = 23) *M*(*SD*)	Female (*n* = 23) *M*(*SD*)	Asian (*n* = 14) *M*(*SD*)	White (*n* = 23) *M*(*SD*)
BD	25.39 (7.21)	23.83 (7.13)	26.96 (7.09)	28.79 (6.65)**	22.52 (6.23)**
SPA	2.75 (.83)	2.48 (.75)*	3.02 (.85)*	2.76 (.71)	2.84 (.87)

Notes: BD = body dissatisfaction; SPA = social physique anxiety; * $p < .05$; ** $p < .01$.

Table 2. Gender and Racial Differences in Body Dissatisfaction and Social Physique Anxiety

Variable	**Sub-variable**	***F***	**Effect size (particle η^2)**
Gender differences	BD	2.23	.05
	SPA	5.28*	.11
Racial differences	BD	8.37**	.19
	SPA	.11	.003

Notes: BD = body dissatisfaction; SPA = social physique anxiety; *$p < .05$; **$p < .01$.

A Comparison of the Impact of Golf Training Aids on Select Golf Metrics Following 14 Weeks of Specialized Training vs No Training

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Abstract

This study investigated improvement in swing speed, distance, launch angle, and smash factor in seven middle-aged golfers following specialized swing training or no training. More specifically, the study measured the impact of speed stick, impact bag, and orange whip training. Two subjects trained for 14 weeks, one subject trained for 8 weeks, and four individuals served as control subjects who completed baseline and post testing without any benefit of specialized training. Baseline data were collected 2 and 3 days prior to the beginning of the swing training using Swing Caddie. Control subjects either did not improve or changed slightly, while training subjects increased their total driving distance by approximately 10%. Training subject 1 increased his swing speed by 4 MPH, while training subject 2 appeared to maintain his swing speed. But even with the same swing speed, he increased his driving distance. The launch angle increased with the driver for training subjects and decreased with the 5 and 9 irons. Smash factor numbers improved for training subjects.

Keywords: golf training aids, swing speed, overspeed training, biomechanics

A Comparison of the Impact of Golf Training Aids on Select Golf Metrics Following 14 Weeks of Specialized Training vs No Training

Almost all golfers, regardless of age, gender, or skill level, have a desire to hit a golf ball farther, in hopes of lowering their golf scores. At the professional level, Bryson DeChambeau has revolutionized how golfers train, think, and attack golf holes, which has become known as the Bryson DeChambeau Effect (Lavner, 2020; Ryan, 2020). Generally, in contrast to previous thinking that golfers would hit a tee shot or approach shot to a selected area, albeit sacrificing distance, from which they felt comfortable in hitting the green on their next shot (Rotella, 1995), DeChambeau hits his driver as far as possible and then plays from there. And although he might miss lots of fairways, his length off the tee still puts him in a good position to successfully recover and score well.

In winning the 2020 U.S. Open, DeChambeau hit just 41% of fairways while averaging 325 yards off the tee with one drive of 375 yards. Porter (2020, para 10) quoted DeChambeau, “Let's take an example of you [making the fairway] like a yard wide. Nobody's got the fairway. Length's going to win. You make the fairways too wide, length's going to win. There's this balance between widths of fairways and where they want to play it and where they're going to try to make you play it." In sum, in 2020, DeChambeau led the PGA Tour in driving distance (322 yards) and gained more than one stroke per round on the field off the tee.

As a professional golfer, DeChambeau spends his workday training for golf or playing golf. Unlike him, recreational golfers have neither the time nor the wherewithal to train like a professional golfer. Knowing that, how does a recreational golfer make small but noticeable increases in hitting golf balls more consistently and farther, attempting to lower one’s score or handicap? The golf market is flush with full swing, short game, and putting aids, with every year bringing new and novel aids (Tremlett, 2025). Three aids that have proven to truly help golfers are speed sticks, the orange whip, and impact bags.

Speed stick training, relatively new to the golf aid industry, has caught on with both professional and recreational golfers. Speed sticks have been marketed as having the ability to increase club head

speed and, as a result, increase the distance a golf ball travels (SuperSpeed Golf, 2021). In essence, speed stick training is overspeed training. Finn (2019) discussed the aspects of overspeed training in relation to sprinting, baseball, cricket, handball, and golf. Relative to golf, Finn stated there appears to be an almost threefold increase with the addition of overspeed training than solely with strength training and conditioning. In six and eight weeks, respectively, the average swing speed gain was just around 3 mph, which is three times the average gain of 1 mph for adult golfers over a 12-week period with just traditional strength and conditioning.

Depending on smash factor, every 1 MPH increase in club head speed may result in up to 3.16 additional yards (Tutelman, 2015). If a golfer can increase his or her club head speed by 5 MPH, the struck golf ball will travel an additional 15 yards, approximately one club, and in some cases, a two-club difference. Instead of hitting an 8-iron approach shot, for example, a golfer could use a 9-iron or a pitching wedge and increase accuracy.

Individual and case studies have demonstrated that speed stick training can result in greater club speed and total distance. Chaney (2020) reported that after six weeks of training, he had increased ball speed by 4 MPH and was carrying the ball 22 yards farther. Barba (2019; 2020) reported that his subjects, in two different trials, increased their club head speed by an average of 7% and 9.8%. Larson and Kroetsch (2021) found that their trial subjects increased swing speed by an average of 12.1% resulting in an estimated additional 29 yards in total distance.

An Orange Whip is a training device that, as its manufacturer states, leads to better flexibility, sequencing, swing tempo, balance, creating lag, and swing plane (Orange Whip, 2020). The weight of the orange whip helps a golfer better control the rhythm of his or her swing by limiting one’s ability to throw the club into an outside-in swing. The Orange Whip is an orange rubber ball attached to the end of a flexible golf shaft with a grip like a normal golf club (The Left Rough, 2021). The trainer is 47” long and weighs 1.75 pounds and has been voted as the #1 teaching and training aid by LPGA and PGA professionals (Shaw, 2021).

Impact bag training is used to help golfers increase hitting distance by correcting an early release and decreasing the launch angle of their clubs, thus improving the moment of impact. At impact, the shaft presses into the bag while the trail arm tucks slightly in, and the right shoulder drops below the left with the body leaning forward (Kelly, 2020).

Launch monitors, becoming increasingly popular with both recreational and professional golfers, provide measures of golf performance. Portable launch monitors range in cost, with the high-end at approximately $20,000 for a TrackMan 4. Leach et al. (2017) tested two commercially available monitors (TrackMan ProIIIe and Foresight GC2 + HMT) and found that the results suggest the launch monitor parameters are of sufficient quality. For more affordable models, the Swing Caddie SC300 was rated as the best portable launch monitor (The Indoor Golf Shop, 2021).

Modern golf analytics have changed the way many golfers train and prepare to play golf (Macleod, 2024). Modern analytics include shot tracking, stroke gains, wearable technology, and virtual reality, to name a few. GPS tracking, launch monitors, swing analytics, and tools such as ARCCOS, TrackMan, and ShotLink have turned every practice session and round of golf into a unique and individual data center (ARCCOS, 2025). Collecting a variety of motions per swing using motion sensors, cameras, and monitors, GolfTEC tried to define what makes a great golfer compared to a competent golfer. The main difference was summarized in their hip sway and shoulder tilt at the top of the swing and then point of impact, as well as the hip turn at the point of impact and the shoulder bend at the finish of the swing. For example, a professional golfer has 45^0 hip turn and 91^0 shoulder turn at the top of the backswing compared to 34^0 hip turn and 68^0 shoulder turn for a high handicap golfer (Arastey, 2020).

Greater hip and shoulder turn, and thus forward rotation, generates more torque and results in greater golf club head speed (Burden, et al., 1998). Although both hip and shoulder rotation are important, proper sequencing, aka timing, is essential for maximizing the stored energy (Joyce, 2017). This release of stored energy in the proper sequence is known as the summation of forces, or also the kinetic chain (Almansoof et al., 2023). Generally, the kinetic

chain involves the body's core, lower extremities, and upper body, with the core transferring forces between the limbs. The chain is based on muscle activation patterns that are pre-programmed for specific activities and requires joint flexibility, muscular strength, and elastic energy storage.

An efficient golf swing requires that each muscle fires and generates force with exact timing to generate and transfer energy to each body segment in the kinetic chain (Reid, 2018).

The kinetic chain in the golf downswing begins from the ground and works its way upward through the body. From the ground forces generated by the back foot, the action moves to the legs and then up sequentially into the hips, trunk, arms, and finally the club. Each segment accelerates and then decelerates, thus allowing energy to transfer to the next segment. By the time the club contacts the ball, significant power is produced (Forman, 2025).

Many recreational, and especially senior-aged golfers, lack the flexibility, clubhead speed, and a perfected kinetic chain required to hit a golf ball as effectively and efficiently as desired. Without improving any one of these constraints, their golf success will be limited. It is hypothesized that training with the above-described devices will result in benefits to the golfers.

Therefore, the purpose of this study was to measure the impact of speed stick, impact bag, and orange whip training on distance, club head speed, ball speed, launch angle, and impact factor. More specifically, distance, launch angle, and impact factor were compared with three sets of golfers (control group 1, control group 2, and training group).

Methods

Participants

Participants for this project were seven adult males, three training subjects, and four control subjects. The control subjects were further divided into two categories: control group 1 (2 subjects) and control group 2 (2 subjects). Control group 1 subjects completed the baseline testing and posttest but did not hit any golf balls during the duration of the study. Control group 2 completed the baseline testing and posttest, plus they hit golf balls at an indoor golf simulation center almost every day during the duration

of the study. The training group (3 subjects) completed baseline testing and posttest and took part in the training protocol.

Control Subjects

Control subject 1 was 52 years old, 6'2" tall, right-handed, and weighed 220 pounds. His average golf score was about 100, and he played golf a couple of times a month. Control subject 2 was 53 years old, 6' tall, right-handed, and weighed 145 pounds. His average golf score was about 85, and he played golf about once every two weeks. Control subject 3 was 68 years old, 5'9" tall, right-handed, and weighed 205 pounds. His average golf score was about 90, and he played five times a week. Control subject 4 was 63 years old, 6' tall, right-handed, and weighed 180 pounds. His average golf score was about 82, and he played five days a week.

Training Subjects

Training subject 1 was 43 years old, 5'8" tall, right-handed, and weighed 150 pounds. His average golf score was about 100, and he played golf about once a week. Training subject 2 was 60 years old, 5'10" tall, right-handed, and weighed 170 pounds. His average golf score was about 100, and he played golf about two times a week. Training subject 3 was 50 years old, 5'9", right-handed, and weighed 180 pounds. His average golf score was about 100, and he played golf about once a week.

Equipment

Equipment used in this study included a Swing Caddie SC 300i launch monitor, three differently weighted (20% lighter than a normal driver, 10% lighter than a normal driver, 5% heavier than a normal driver) super speed sticks, an impact bag, and an orange whip with a 47" flexible shaft attached to a 1.75 lbs. weighted orange ball. The Swing Caddie was used to track golf metrics that included distance, club head speed, ball speed, launch angle, apex, smash factor, and spin.

Smash factor is a ratio of ball speed to club speed and is derived by dividing ball speed by club head speed. Smash factor relates to the amount of energy transferred from the club head to a ball. The higher the smash factor, the better the energy transfer. With a driver, golfers are hoping to achieve a smash factor of 1.50, while for a pitching wedge, a smash factor of 1.25 is considered good. Trackman

data reveals that the smash factor with a driver for scratch golfers is 1.49, for 5 handicap golfers it is 1.45, and for bogey golfers it is about 1.43 (Trackman, 2024a). With a 5-iron, one can hope to achieve a smash factor of 1.35 (Tutelman, 2012). As is noted, as the loft of a club increases, the smash factor drops.

Club head speed, also known as swing speed, is simply the speed at which one swings a golf club. The average swing speed with a driver is approximately 115 MPH for PGA golfers, and 94 MPH for LPGA players and male amateurs. Long drive champions typically have a swing speed of 135 MPH (Bowden, 2024). Factors that impact swing speed include physical fitness and flexibility, technique and mechanics, and equipment (McAnnally, 2023).

Launch angle is defined as the angle at which a golf ball leaves the clubface in relation to the ground and is measured in degrees. Launch angle is impacted by club loft, swing speed, and clubface. Clubs with a lower loft, i.e., driver, have a lower launch angle and travel farther. A closed clubface produces a flatter shot while an open clubface increases the launch angle. The PGA tour average launch angle for a driver is 10.8°, while for an average golfer it ranges from 10-140°. The launch angle for a 5-iron of an average golfer ranges from 16-20° (Coyne, 2024).

The apex in golf is the highest point a ball reaches during its flight. There is typically very little difference in apex height between clubs, with a difference of only 10 feet between a driver and a pitching wedge. The apex average for PGA tour players is between 30-35 yards for the various clubs (Trackman, 2024b). The apex is affected by spin and ball speed.

Spin is the rate at which a golf ball is rotating after having been hit and is measured in revolutions per minute (RPM). Spin is affected by club type (high lofted clubs create more spin than low lofted clubs), angle of attack (a steeper angle of attack creates more spin), and launch angle (the higher the launch angle, the more spin created). Spin affects ball flight by trajectory (greater spin causes a ball to fly higher), distance (too much spin causes a ball to balloon, while too little spin causes it to roll), and control (spin helps control the ball). Additionally, there is both backspin and sidespin. Backspin causes the ball to spin backward as it travels forward, while sidespin causes a ball to spin left or right. A left rotation is typically a hook or draw, while a right rotation is usually a slice or face (Wall, 2024). Golfers with a

swing speed of more than 105 MPH with a driver should have an optimal spin rate of between 1750-2300 RPM, while golfers with a swing speed of 97-104 MPH might have spin rate of 2000-2500 RPM, and golfers with a swing speed of between 84-96 MPH will have a swing speed of 2400-2700 RPM. Golfers with a speed of 72-83 MPH will have a speed of 2600-2900 RPM (Tursky, 2020).

The balls were a variety of brands, including Titleist and Callaway. Each subject used his own golf clubs (driver and 5-iron). Specific golf club information, such as brand, shaft flexibility, and shaft weight, was not collected.

Procedures

Upon university Institutional Review Board approval, subjects were recruited for the study. Training subjects 1 and 2 trained three times per week for 14 weeks, while training subject 3 trained for eight weeks. Training took place in a sports facility on a university campus. All training was conducted indoors. The training site consisted of an area that had a hitting station with a net and a hitting mat, a designated area for hitting the impact bag, and a designated area for the speed stick and orange whip swing training. A Swing Caddie was set up six feet directly behind the ball located on the hitting mat to track swing metrics (carry/total distance, smash factor, launch angle, swing speed, apex, and ball speed) at the beginning of the study to establish baseline, after the completion of level 1 training, and again at the completion of level 2 training.

The training protocol used with the speed sticks was prepared by Speed Stick, Inc. Orange whip and impact bag training was prepared by the PI. Each training session began with a dynamic warm-up. Subjects were trained in dynamic warm-up as prepared by Speed Stick, Inc., but were allowed to do their own warm-up prior to training. After warming up, subjects performed orange whip training, impact bag training, and then speed stick training, and repeated in the same order for the required reps and sets (Table 1). Subjects used their own clubs for impact bag training. Following training, subjects were permitted to hit balls as they desired. Sometimes they would hit for 30 minutes, while other times they did not hit at all. Level 1 training lasted for six weeks, and level 2 training lasted eight weeks.

Table 1

Training Protocol

Training	Exercise	Swings (n)
Level 1		
	Orange whip	10
	Impact bag	15
	Speed Stick Level 1.1 – normal	18
	Orange whip	10
	Impact bag	15
	Speed Stick Level 1.2 - step change	18
	Orange whip	10
	Impact bag	15
	Speed Stick Level 1.3 – normal	3
Level 2		
	Orange whip	10
	Impact bag	15
	Speed Stick Level 2.1 – normal	18
	Orange whip	10
	Impact bag	15
	Speed Stick Level 2.2 – kneeling	18
	Orange whip	10
	Impact bag	15
	Speed Stick Level 2.3 – step change	18
	Speed Stick Level 2.4 – normal	3

Training for subjects 1 and 2 began the second week in January and lasted for 14 weeks. Training subject 3 began training six weeks into the study.

Data Analysis

Baseline Swing Caddie data for all subjects were collected 2 and 3 days prior to the beginning of the swing training. The second set of Swing Caddie data for the training subjects was collected at the conclusion of level 1 training, and the final set of data was collected at the conclusion of level 2 training. Post-testing data for control subjects also occurred at the conclusion of the level 2 training. Speed Stick,

Inc. has additional levels of training, but in this case, the conclusion of the spring semester ended the training protocol. Baseline and post-testing data were obtained by determining the average of 20 balls for each club.

Results

As seen in Table 2, the driving distance for control subject 1 improved by 1 yard, while control subject 2 decreased by 28 yards. Control subject 1's 5-iron distance decreased by 1 yard, and control subject 2 decreased by 2 yards from baseline to post-testing. Control subject 1's swing speed with his driver increased by 1 MPH, while control subject 2's swing speed with his driver decreased by 2 MPH. Control subject 1's 5-iron distance decreased by 1 yard, and control subject 2 decreased by 2 yards from baseline to post-testing. Swing speed for both control subjects did not change with the 5-iron from baseline to post-testing. As mentioned previously, control subjects 1 and 2 simply participated in the baseline testing and post-testing with no golfing between the two testing sessions.

Table 2

Control subjects, no golf

Club Test	Distance (yards)	Swing Speed (mph)	Ball Speed (mph)	Launch Angle (degrees)	Apex (feet)	Smash Factor	Spin (rpm)
			Control Subject 1				
Driver							
Baseline	189	76107	19.0	66	1.40	3172	
Post-test	190	77110	18.4	70	1.43	3115	
5-Iron							
Baseline	173	73105	19.2	72	1.49	3448	
Post-test	172	73102	16.6	52	1.41	4297	
			Control Subject 2				

Driver							
Baseline	228	85	126	13.4	116	1.49	3448
Post-test	200	83	114	17.6	73	1.37	3185
5-Iron							
Baseline	163	73	101	20.4	77	1.38	7660
Post-test	161	73	97	16.9	51	1.35	4524

The driver launch angle decreased with both the driver and 5-iron for control subject 1. For control subject 2, the driver launch angle increased while the 5-iron angle decreased. Smash factor improved for control subject 1 with his driver and decreased with the 5-iron, while the smash factor for control subject 2 decreased for both the driver and the 5-iron.

As seen in Table 3, the driving distance increased by 3 yards for control subject 3 and 2 yards for control subject 4. The 5-iron distance for control subject 3 decreased by 7 yards and increased by 19 yards for control subject 4 from baseline to final testing. Driver swing speed stayed the same for control subject 3, while his 5-iron speed decreased by 1 MPH. Swing speed for control subject 4 increased with both his driver and his 5-iron. The launch angle with both the driver and 5-iron barely changed for control subject 3 and improved by 3 and 2 degrees for control subject 4. The smash factor for control subject 3 remained unchanged with his driver and decreased with his 5-iron. The smash factor for control subject 4 decreased with his driver and improved with his 5-iron.

Table 3

Control subjects, simulator golf

Club Test	Distance (yards)	Swing Speed (mph)	Ball Speed (mph)	Launch Angle (degrees)	Apex (feet)	Smash Factor	Spin (rpm)
			Control Subject 3				
Driver							
Baseline	180	82	106	16.7	59	1.30	3218
Post-test	183	82	108	16.8	60	1.30	3275

5-Iron							
Baseline	156	71	96	19.2	61	1.34	5245
Post-test	149	70	91	18.4	50	1.29	5112

Control Subject 4

Driver							
Baseline	237	91	132	19.7	119	1.45	3456
Post-test	239	94	132	16.1	92	1.41	3242
5-Iron							
Baseline	163	78	107	22.0	97	1.36	6607
Post-test	182	84	117	20.1	106	1.41	5892

As seen in Table 4, training subject 1 increased his total driving distance by 21 yards (11%), training subject 2 increased by 13 yards (9.4%), and training subject 3 increased by 17 yards (9.2%). Training subject 1 increased his 5-iron distance by 10 yards (9.4%), training subject 2 increased from baseline to level 1 testing but then decreased from the end of level 1 testing to final testing, and training subject 3 increased his 5-iron distance by 16 yards (9.1%). During final testing, subject 2 was suffering from a sore back.

Table 4

Training subjects

Club Test	Distance (yards)	Swing Speed (mph)	Ball Speed (mph)	Launch Angle (degrees)	Apex (feet)	Smash Factor	Spin (rpm)
Training Subject 1							
Driver							
Baseline	209	85	124	15.7	67	1.41	2791
Level 1	224	73	93	19.3	103	1.43	3358
Level 2	230	89	128	16.8	99	1.45	2981
5-Iron							
Baseline	155	73	97	22.2	74	1.33	6433

Level 1	148	73 93	19.3	52	1.37	6522
Level 2	165	75102	19.3	83	1.36	6288

Training Subject 2

Driver						
Baseline	211	86 119	16.7	74	1.39	3010
Level 1	219	85 122	16.7	75	1.43	2851
Level 2	224	85 126	17.5	82	1.48	2881
5-Iron						
Baseline	158	74 99	23.2	77	1.33	6925
Level 1	165	74 102	23.3	91	1.38	6689
Level 2	150	71 91	19.5	54	1.28	5554

Training Subject 3

Driver						
Baseline	200	83 118	15.5	61	1.43	2819
Level 1	217	93 128	12.4	56	1.38	3078
5-Iron						
Baseline	165	70 99	16.5	52	1.40	4289
Level 1	181	84 113	18.8	91	1.34	5730

Training subject 1 increased his swing speed by 2 and 4 MPH, training subject 2 lost a bit of club head speed from baseline to post testing, and training subject 3 increased his swing speed by 10 and 14 MPH. The launch angle increased with the driver for training subjects 1 and 2, but decreased for subject 3. The launch angle decreased with the 5-iron for training subjects 1 and 2 but increased for training subject 3. Smash factor improved for training subjects 1 and 2, but not for training subject 3. It is important to note that training subject 3 only participated in six weeks of the study.

Discussion

Rather than aggregate the data for the subjects, this discussion will focus on the three groups of subjects. Specific changes (improvements) being sought included increased club head speed, ball speed,

and distance with both clubs; decreased launch angle with the 5-iron; apex of about 90’ with both clubs; and improved smash factor.

For control subjects (no golf), there were few improvements. These two control subjects did not hit any golf balls during the duration of the study, and their lack of change was predictable. Swing speeds were unchanged from baseline to post testing, but one of them had a negative 28-yard driver distance change from baseline to post. That might be explained by his smash factor of 1.49 compared to 1.37, baseline to post.

For control subjects (simulator golf), subject 4 had greater improvements than subject 3, but neither golfer had a significant improvement in driver distance. Subject 3 had a 3-yard difference in distance, while subject 4 had a 2-yard difference. Five iron distance increased significantly for subject 4, which may be explained by greater swing speed, decreased launch angle, improved smash factor, and reduced spin.

For the training subjects, numerous improvements were noted, as shown in Table 5. As mentioned earlier, training subject 1 was a 53-year-old male who played golf about once a week during the golf season. As training began, it became obvious he had swing faults that needed to be corrected. Although the intent of this training protocol was not to make swing changes, it was necessary to correct two things. First, on his back swing, his weight transferred so greatly to his right side that his knee and hips moved beyond the right foot. For this fix, he worked on keeping his weight on the inside of his right foot and not locking his right knee during the backswing. His second major fault was that his arms and wrists were very locked during his take-away and backswing. This fix involved increasing the degrees of freedom in his wrists on his backswing.

Table 5

Summary of Improvements for Training Subjects

Metric	Subject 1	Subject 2	Subject 3

Increased Distance			
Driver	yes	yes	yes
5-iron	yes	no	yes
Increased Club Head Speed			
Driver	yes	yes	yes
5-iron	yes	no	yes
Increased Ball Speed			
Driver	yes	yes	yes
5-iron	yes	no	yes
Decreased Launch Angle			
5-iron	yes	no	yes
Apex closer to 90’			
Driver	yes	yes	no
5-iron	yes	no	yes
Improved Smash Factor			
Driver	yes	yes	no
5-iron	yes	no	no

Training subject 1 suffered from hand discomfort about halfway through the training and had to curtail some of his forceful swinging. Although he attended all the training sessions, he did not swing as hard as he should have due to the hand discomfort. As a golfer, he suffered from inconsistency in his swing and ball contact. As shown in Table 4, with the training, his distance increased for both clubs, swing and ball speed increased for both clubs, launch angle increased for his driver and decreased for the 5-iron, apex moved from 83’ to 99’, and smash factor improved for both the driver and the 5-iron. He said, “Imagine how much better it would have been if I was able to finish all the training.”

Training subject 2 also had two major swing faults. His first fault was that he opened his club face immediately upon take-away by twisting his hands, and rather than taking the club straight back, he took it hard to the inside. This resulted in an open club face at the top of his swing, which led to an outside-in swing. His second challenge was then to get the club back inside on the downswing and square on impact. Unlike subject 1, he did not want to work specifically on changing his takeaway or other aspects of his swing. He completed all the training sessions. He had moved from one house to another the

weekend prior to level 2 post-testing and had a sore back during that testing. I asked him to come back a week later to do the testing again, but he was not able to do that.

As seen in Table 4, training subject 2's driving distance went from 211 at pretest to 224 at posttest, smash factor improved from 1.39 to 1.48, and ball speed from 119-125 MPH. Results for level 2 post-testing for the 5-iron do not appear to have improved from baseline to level 2 post-testing, but as mentioned, he was suffering from a sore back during that testing. Comparing baseline to level 1 post testing, noticeable improvements are seen, and it is reasonable to assume that level 2 post testing would have been improved if the subject had not had discomfort in his back.

As the golf season got underway, training subject 2 said:

> Good news is this year I am using 1 to 2 clubs less and driving about 30 yards better on average with 50 plus on occasions. Also, long par 3's of 180 yards plus are now reachable with my 3 iron, which was my driver previously. Loved the program. I think the impact bag was most effective for me by making my hips turn sooner and my right elbow tucked in more. The orange whips a bit similar in improving swing path and body mechanics. The speed sticks were okay, but did very little for my mechanics, and I was doing little with those beyond swinging hard. I bought an impact bag and do 10 or so swings into it before heading out, and it seems to help.

There was also a third training subject who was not able to begin the training at the same time as training subjects 1 and 2. Since he began late, he was only able to train through level 1. Unlike subjects 1 and 2, he did not have any noticeable major swing faults that needed to be addressed. As can be seen in Table 4, from baseline to level 1 post-testing, he improved his distance, swing speed, and ball speed for both clubs. His launch angle decreased for his driver and increased for the 5-iron, and the apex increased to more desirable heights for the 5-iron. The smash factor decreased for both the driver and 5-iron at level 1 post-testing.

One year after turning pro, Bryson DeChambeau recorded his first PGA Tour victory. A year later, he won four events and was ranked #1 in the world (LIV Golf, n.d.). Shortly thereafter, he began a training program to gain muscle and build strength, which resulted in gaining 40 pounds of muscle. His

intent was to become the longest driver on the tour. His driving distance increased by 20 yards to an average of 322 yards (Townsend, 2024). This increase in distance resulted in a significant benefit for DeChambeau off the tee box and forced other golfers to try to increase their driving distances. In 2010, the average driving distance on the PGA Tour was 287 yards, while in 2024 it was 301 yards (Fairholm, 2024). Today, almost every professional golfer trains with overspeed swing training.

Conclusion and Implications

Many golf training aids are little researched, but still accepted as effective training tools, mostly through anecdotal evidence. As mentioned in the introduction, speed sticks, the orange whip, and impact bags have been determined to be three of the best golf training aids (Southhampton Golf Club, 2021). Previous research (Barba, 2019, 2020; Chaney, 2020; Larson & Kroetsch, 2021) has shown, and these current findings concur, that speed stick training will result in greater club head speed and, as a result, greater hitting distance. Not researched, however, is the effect that orange whip and impact bag training practiced singly might have on golf swing metrics.

In the present study, club head speed increased along with improved smash factor. A question to consider: Was the increase in smash factor a result of the speed stick training, the impact bag training, or the orange whip training? Or was it the result of a combination of these training aids? Similarly, launch angle decreased with the 5-iron, and was that the result of the impact bag training? But most importantly, results from this study suggest that training with golf aids improves certain golf metrics more than just hitting golf balls at a golf simulator, and of course, more than not hitting any golf balls.

Further research should involve experimental studies in which a control group, along with experimental groups, is trained. The experimental groups could be speed stick training only, speed sticks and impact bag only, speed sticks and orange whip only, and orange whip and impact bag only.

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Intersecting Pathways: Exploring the Integration of Creative Drama and Physical Education for Social-Emotional Growth and Motor Development

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Abstract

At first glance, creative drama and physical education might seem like two entirely separate subjects within education. Creative drama is rooted in imagination, expression, and storytelling, while physical education emphasizes movement, coordination, and physical fitness. Yet, beneath these surface differences lies an extraordinary potential for partnership. When these fields intersect, they unlock unique possibilities to enrich children's development in both social-emotional and physical domains. The integration of creative drama and physical education creates an innovative learning experience where imagination meets movement, expression complements physicality, and emotional growth is nurtured alongside motor skills. By combining the dynamic and exploratory nature of drama with the structure and active engagement of physical education, educators can cultivate spaces that foster emotional intelligence, empathy, collaboration, and resilience. Simultaneously, such integration supports the development of coordination, strength, and physical competence in a way that is both engaging and meaningful for students. This article identifies the intersections of creative drama and physical education, highlighting their shared potential to contribute to the development of the whole child. It examines the unique benefits of combining these disciplines, explores the role they play in nurturing social and emotional growth, and outlines practical strategies for effective integration.

Keywords: imagination, empathy, drama, physical education, movement

Intersecting Pathways: Exploring the Integration of Creative Drama and Physical Education for Social-Emotional Growth and Motor Development

While creative drama and physical education may differ in focus, both disciplines share a profound ability to nurture key aspects of a child's growth, from social-emotional learning to physical competence. Understanding the unique characteristics and historical roots of these fields sheds light on their potential for integration and mutual enrichment (Koff, 2000; Way, 1967).

Background: The Foundations of Creative Drama and Physical Education

Creative Drama: The Intersection of Art and Education

Creative drama is an artistic and educational practice that forms the foundation for the theatrical arts that extends far beyond the performance stage. Unlike traditional theatre, which centers on rehearsed performances for an audience, creative drama emphasizes the process of exploration and self-expression. Through improvisation, role-play, storytelling, and other dramatic techniques, participants engage in imaginative and experiential activities that encourage creativity, critical thinking, and social interaction (Davis & Behm, 1978).

At its core, creative drama provides children with a safe and supportive space to experiment, express, and collaborate (Arda Tuncdemir, 2025). It promotes not only artistic exploration but also the development of essential life skills, such as problem-solving, communication, emotional regulation, and social skills (Dupont, 1992). Physical activity also becomes an inherent part of the dramatic process. Children physically embody characters to enact stories and navigate dramatic scenarios that make it a dynamic and multisensory experience (Ward, 1957).

The roots of creative drama can be traced to educational pioneers like Brian Way and Winifred Ward, whose revolutionary work transformed perceptions of drama as an educational tool. Way (1967) advocated for the idea of drama as a medium for personal growth and self-discovery, while Ward (1957) emphasized its value in fostering empathy, communication, and cognitive abilities. Their visions laid the groundwork for creative drama as a pedagogical approach that enriches the lives of children through

experiential learning. Today, creative drama is recognized as a versatile and impactful tool that nurtures both individual and collective development (Arda Tuncdemir, 2025; Hong & Hong, 2022).

Physical Education: A Foundation for Movement and Well-Being

Physical education focuses on developing children's physical abilities, health, and fitness while fostering a lifelong appreciation for movement. It is grounded in structured activities that enhance motor skills, strength, endurance, and coordination. Yet, the benefits of physical education extend beyond physical development. Research consistently highlights its positive impact on mental health, self-discipline, teamwork, and goal setting, making it a critical component of a well-rounded education (SHAPE America, 2015).

Historically, physical education has evolved from early gymnastic training in ancient cultures to modern approaches that emphasize inclusivity, engagement, and holistic well-being. Today, effective physical education programs aim to inspire children to view physical activity as a source of joy and personal achievement rather than mere exercise. By blending fun, challenge, and collaboration, physical education encourages active lifestyles while fostering resilience, cooperation, and confidence (Koff, 2000; Sansom, 2011).

Complementary Purposes for Child Development

Though creative drama and physical education emerge from distinct fields, their purposes align in impactful ways. Both disciplines emphasize active participation, experiential learning, and the development of critical life skills. Creative drama nurtures emotional intelligence and creative thinking, while physical education enhances physical competence and discipline. Together, they provide a multidimensional approach to education that promotes development in social-emotional and physical domains (Gardner, 1983).

This shared potential sets the stage for exploring how creative drama and physical education can be intentionally integrated to create learning experiences that are engaging and transformative. By combining the imaginative and expressive elements of drama with the physical and structured nature of

physical education, educators can unlock new possibilities for fostering well-rounded development in children.

Definition and Key Principles: Understanding Creative Drama and Physical Education

Defining Creative Drama: A Process-Centered Pathway to Exploration and Growth

Creative drama can be defined by the American Alliance for Theatre and Education as "an improvisational, non-exhibitional, and process-centered form of drama in which participants, guided by a facilitator, engage in imagining, enacting, and reflecting on human experiences" (Davis & Behm, 1978, pp. 10-11). By prioritizing the experience of exploration over the outcome of a polished performance, creative drama becomes an impactful tool for individuals to discover stories, with dramatic situations and ideas, through spontaneous and collaborative enactments. personal growth, social interaction, and emotional development.

At the heart of creative drama lies its focus on the participants' experience. Unlike traditional theatre, which is centered around the product of rehearsals and performances for an audience, creative drama emphasizes the process of creation and reflection (Davis & Behm, 1978). Participants engage in activities that encourage them to step into different roles, imagine alternative scenarios, and explore diverse perspectives. Through this immersive and participatory approach, creative drama fosters a deeper understanding of self and others while encouraging imaginative thinking and empathy.

Key Principles of Creative Drama

Creative drama is characterized by several guiding principles. Several of these ideas include improvisation and spontaneity as central components that enable participants to engage in unscripted and in-the-moment experiences. This spontaneity fosters flexibility, adaptability, and creative problem-solving as participants navigate impromptu unfolding dramatic scenarios (Toivanena et al., 2011).

Collaboration and group work are also fundamental to creative drama (Hu & Shu, 2025). The aim of the art form is to create a space where participants feel empowered to take safe theatrical risks, make discoveries, and learn from their experiences rather than striving for perfection. Participants work together to co-create stories, solve problems, and navigate dramatic situations that in turn promote

teamwork, communication, and a sense of belonging (Arda Tuncdemir, 2025). Through this shared creative process, a supportive community is built. Diverse ideas and perspectives are embraced as participants work together. Additionally, imagination and creativity are at the heart of creative drama. Participants are encouraged to think beyond the confines of reality, using their imaginations to create fictional worlds, embody abstract concepts, or reimagine real-life scenarios that inspire original thinking and creative expression (Arda Tuncdemir, 2025; Elkind, 2007).

Another key aspect of creative drama is reflection and emotional growth. After the enactment, participants are encouraged to reflect on their experiences to share their insights and explore the emotions and ideas that emerged during the activity. This reflective process fosters self-awareness, emotional intelligence, and a deeper connection to human experience (Elkind, 2007; McCaslin, 2006). Finally, the integration of movement and expression is vital in creative drama. Participants use their bodies to express emotions while embodying characters and interacting with the environment, with role-playing and physical movement allowing them to connect with their creative impulses and explore ideas in a multisensory way (Jie, 2021; McCaslin, 2006). Together, these principles make creative drama a powerful tool for personal, emotional, and social growth.

Applications and Benefits

The principles of creative drama enhance communication skills, foster empathy, and develop critical thinking and problem-solving abilities (Jie, 2021; McCaslin, 2006). Engaging the mind and body also provides opportunities for physical activity and self-expression.

Creative drama's flexibility and accessibility allow it to be adapted for a variety of settings, from classrooms to community centers, and for participants of all ages. Whether used to teach academic concepts, address social issues, or simply encourage creative exploration, it creates a safe and inclusive space for participants to grow, connect, and thrive (Švábová & Dolinská, 2024). In essence, creative drama is more than an artistic practice; it is a pathway to discover new perspectives in order to form emotional resilience and build meaningful connections through the imagination and collaboration.

Defining Physical Education: A Foundation for Movement, Fitness, and Lifelong Well-Being

Physical education is a cornerstone of education that provides students with opportunities to explore movement, engage in play, and develop essential skills that extend far beyond physical activity. At its core, physical education is “an academic subject that provides a planned, sequential, K-12 standards-based program of curricula and instruction designed to develop motor skills, knowledge, and behaviors for healthy, active living, physical fitness, sportsmanship, self-efficacy, and emotional intelligence” (SHAPE America, 2015, p. 3). Through structured lessons and activities, physical education cultivates the physical, social, and emotional well-being of students, setting the stage for lifelong health and fitness.

Physical Education is more than a class about sports and games; it is a dynamic and multidisciplinary subject that empowers students to understand their bodies, develop coordination, and embrace physical activity as an essential part of life (Lubans et al., 2010). From early childhood, students begin learning fundamental movement skills and basic concepts like balance, coordination, and spatial awareness. These foundational skills evolve over time, enabling students to master more complex motor tasks such as dribbling in basketball, spiking in volleyball, or executing strategic plays in football (Chen et al., 2023).

Key Objectives of Physical Education

Physical education aims to provide students with a comprehensive set of skills, knowledge, and attitudes that support a healthy and active lifestyle. These objectives are carefully aligned with educational standards and focus on the physical, cognitive, and social-emotional dimensions of learning.

Physical education plays a vital role in the development of motor skills, helping students refine fundamental movements like running, jumping, throwing, and catching (National Center for Biotechnology Information, 2019). Over time, these basic movements are integrated into more advanced skills required for specific sports and physical activities, enhancing agility, balance, and coordination. Equally important is the promotion of physical fitness. Through a variety of activities, students gain an understanding of cardiovascular endurance, muscular strength, flexibility, and overall health, while developing habits to maintain physical fitness throughout their lives (Lim & Lee, 2022)

In addition to physical abilities, physical education encourages healthy behaviors by equipping students with knowledge about nutrition, wellness, and lifestyle choices that support long-term health (Jones &

Johnson, 2016). Lessons on regular exercise, balanced eating, and adequate rest emphasize their critical role in both physical and mental well-being. Moreover, physical education fosters emotional intelligence by nurturing self-awareness, self-regulation, and resilience (NASPE, 2009). Activities involving teamwork, goal setting, and overcoming challenges help students build confidence, cope with setbacks, and grow personally (Martens & Vealy, 2019; More, 2023).

The cultivation of sportsmanship and social skills is another essential aspect of physical education. By engaging in team-based activities, students learn the value of cooperation, respect, fair play, and effective communication, all of which foster a sense of inclusion and community (Durlak et al., 2011). Finally, physical education inspires lifelong active living by introducing students to diverse sports, recreational activities, and fitness routines. By discovering activities they enjoy, students are encouraged to embrace an active lifestyle that extends well beyond the classroom, ensuring their commitment to health and well-being throughout their lives (More, 2023; Sahu, 2024).

Applications and Long-Term Benefits

Physical education provides students with the skills and knowledge needed to lead healthy, balanced lives. Its focus on fitness, motor development, and emotional growth supports academic achievement, as research shows a strong correlation between physical activity and cognitive performance (Hillman et al., 2008). Additionally, physical education lays the foundation for lifelong habits that reduce the risk of chronic diseases, improve mental health, and enhance quality of life (Telama et al., 2015).

By creating a safe, supportive, and engaging environment, physical education empowers students to explore their potential, build resilience, and cultivate a love for movement. Whether refining their jump shot on the basketball court or learning the principles of teamwork through a cooperative game, students gain experiences that shape their physical, emotional, and social development, preparing them for success in all areas of life (More, 2023).

Common Elements and Overlapping Concepts Between Creative Drama and Physical Education

Movement serves as a vital and universal form of expression for children. From the earliest stages of development, physical activity and creative engagement enable young learners to communicate emotions, convey ideas, and explore their surroundings.

According to Koff (2000) and Sansom (2011), children rely heavily on this nonverbal mode of expression to articulate their thoughts and feelings. The integration of movement and creative play is central to both physical education and creative drama, revealing a host of shared principles and overlapping concepts that support children's growth on multiple levels.

The Role of Bodily-Kinesthetic Learning

Both creative drama and physical education prioritize the use of bodily-kinesthetic intelligence, an approach of learning identified by Howard Gardner (1983). This form of learning emphasizes physical activity with hands-on experiences and movement, making it particularly relevant for preschool and early elementary-aged children, who are predominantly kinesthetic and tactile learners.

In creative drama, children use their bodies to enact stories, explore character roles, and express abstract ideas through physical movement (Iroh & Okeh, 2024). For instance, a child may pretend to be a tree swaying in the wind, embodying both physical motion and the imaginative context. Similarly, physical education encourages children to engage in activities that require spatial awareness, coordination, and purposeful movement, such as navigating an obstacle course or learning a new sport.

Both disciplines recognize the importance of tapping into this natural inclination toward movement-based learning, particularly in early childhood, when children understand the world by touching, feeling, and exploring their environment.

Movement as a Form of Expression

Creative drama and physical education share a foundational belief in the power of movement as a form of self-expression. In creative drama, children use improvisation, role-playing, and dramatic gestures to communicate emotions and ideas. For example, acting out a scene as an animal in its habitat allows children to experiment with different ways of moving and thinking while expressing creativity.

Collaboration and Social-Emotional Growth

Teamwork and collaboration are important components of both creative drama and physical education, as both require students to interact with peers, develop empathy, and work toward shared goals (Patil, 2021; Li, 2024; Wee, 2011). In creative drama, group activities like ensemble storytelling or role-playing scenarios encourage participants to listen to others while negotiating their roles, while responding to each other's ideas. For example, a group might work together to act out a story, requiring cooperation and flexibility to create a cohesive narrative (Wee, 2011).

Similarly, physical education promotes social skills through group games, sports, and cooperative challenges. Activities like relay races or team sports require students to communicate effectively, strategize, and respect their teammates, which reinforces social-emotional skills such as empathy, patience, and leadership (Li, 2024). Both disciplines encourage students to navigate and resolve conflicts in a respectful environment, providing valuable opportunities to develop emotional intelligence.

Imagination and Play

Play is a fundamental element of both creative drama and physical education. Both provide children with rich opportunities to experiment, explore, and learn through imaginative and active engagement. In creative drama, children use props, costumes, and storytelling to build imaginary worlds where they can take on different roles and experience new perspectives. For example, pretending to be explorers in search of hidden treasure allows individuals to blend imaginative play with physical movement to create a dynamic and immersive learning experience.

Research consistently highlights the vital role of imaginative play in fostering creativity, cognitive development, and social engagement in children (McCaslin, 2006). Momeni et al. (2017) found that participation in creative drama significantly enhances creativity by allowing children to engage in role-playing through storytelling and scenario-building. These activities provide opportunities to explore diverse perspectives while strengthening problem-solving skills. Similarly, Dominey (2021) emphasized that imaginative play encourages exploratory and creative thinking, a key component of cognitive and social development.

O'Grady (2024) expands on this idea by suggesting that drama-based play enhances creativity and fosters a sense of agency in children. The study found that embodied imaginative performances encourage children to take ownership of their learning experiences, allowing them to better express their thoughts and emotions. This sense of autonomy contributes to both personal growth and social-emotional learning.

Beyond creative drama, integrating imaginative play into physical education offers additional benefits by combining movement and storytelling. Active engagement in play-based movement promotes holistic development by improving coordination, problem-solving, and communication skills (Dominey, 2021; O'Grady, 2024).

Physical education frequently incorporates elements of play through games and activities that challenge children to think creatively while being physically active. One effective approach is the use of obstacle courses that transform movement into an imaginative experience. For example, a physical education teacher might design a course where students navigate a jungle or escape from quicksand, encouraging them to engage both physically and imaginatively through creative drama (Brian et al., 2023; Van Hyfte et al., 2021; Aprilia et al., 2022). Research consistently highlights the benefits of integrating imaginative play into physical education, particularly through obstacle courses. Sensory-based courses create dynamic, multi-sensory environments that enhance movement concepts while simultaneously fostering creativity and cognitive engagement (Brian et al., 2023). Additionally, structured obstacle courses have been shown to significantly improve motor competence in young children by enhancing agility, balance, and spatial awareness through play-based movement scenarios (Van Hyfte et al., 2021). Incorporating storytelling and adventure-based elements, such as acting out survival challenges or exploring new terrains, not only makes physical education more engaging but also reduces resistance to participation while improving gross motor skills (Aprilia et al., 2022). Beyond physical benefits, these activities also serve as powerful tools for social-emotional development. When students work together in teams or small groups to complete obstacle challenges, they cultivate patience, turn-taking, and collaborative problem-solving skills, reinforcing teamwork and communication (Brian et al., 2023; Aprilia et al., 2022). The shared emphasis on imagination and play makes both disciplines highly

engaging and effective for young learners, particularly those who thrive on interactive and experiential learning.

Current Programs Integrating Creative Drama and Physical Education

Programs that integrate creative drama and physical education demonstrate the potential of combining movement, expression, and play to foster complete child development. These initiatives engage students at various age levels, addressing both physical and social-emotional growth while illustrating the connection between these two disciplines. The following programs highlight innovative ways educators can combine creative drama and physical education in meaningful ways.

The Wolf Trap Institute for Early Learning Through the Arts is a program designed for young children, particularly in preschool and early elementary grades, that focuses on integrating performing arts with cognitive and physical development. Through its Arts Integration program, educators are informed to use drama, music, and movement as tools for enhancing learning in early childhood classrooms (Wolf Trap Institute for Early Learning Through the Arts, n.d.). One key aspect of this program is its use of movement-based storytelling and role-playing to encourage children to explore emotions while expressing their creativity and developing their motor skills. For example, a lesson might involve children embodying characters from a story, such as animals in a forest, that requires them to crawl, jump, and stretch while also imagining and dramatizing the narrative. By combining physical activity with dramatic play, this program effectively promotes both physical coordination and emotional intelligence to create an engaging and developmentally appropriate learning environment.

At the elementary and middle school levels, the Creative Arts and Physical Education Program (CAPE), an initiative of the Chicago Arts Partnerships in Education, demonstrates how creative drama can blend with physical education to promote active learning and engagement. CAPE partners with schools to design innovative curricula that combine physical activities with dramatic storytelling, fostering teamwork, self-expression, and body awareness (Chicago Arts Partnerships in Education, n.d.). For example, one notable initiative involves students creating and performing short scenes that incorporate movement patterns like running, balancing, and jumping while experiencing skills such as

teamwork or problem-solving. These activities encourage children to connect physical effort with creative exploration, helping them build cognitive and physical skills simultaneously. CAPE's approach emphasizes the value of hands-on experiential learning.

For upper elementary and middle school students, the MindUP Program, developed by The Goldie Hawn Foundation, offers a unique integration of mindfulness, creative drama, and physical education to support social-emotional learning. The program incorporates role-playing and movement-based activities that help children explore their emotions, build resilience, and improve self-regulation (The Goldie Hawn Foundation, n.d.). A typical MindUP activity might involve students dramatizing scenarios where they practice calming techniques, such as controlled breathing, while mimicking movements of a growing tree or role-playing situations that require empathy and problem-solving. These activities connect to physical education by promoting body awareness, coordination, and active engagement. The combination of physical movement and dramatic expression allows students to develop a deeper understanding of their emotions while strengthening their physical and mental well-being.

These programs collectively underscore the growing recognition of the connections between creative drama and physical education. By combining the imaginative and expressive aspects of drama with the movement and skill-building focus of physical education, both curricula provide students with engaging and impactful learning experiences. Whether through movement-based storytelling for young children, performance-infused physical activities for elementary students, or mindfulness and drama for older learners, these programs show the potential of interdisciplinary approaches to nurture well-rounded, confident, and emotionally intelligent individuals.

Successful Integration Strategies and Implementation

Integrating creative drama and physical education in an elementary classroom requires thoughtful planning, intentional alignment with learning goals, and engaging activities that balance creativity with physicality. Successful implementation begins with designing activities that utilize movement as a tool for both imaginative expression and physical development. For example, a story adventure activity can combine storytelling with physical challenges. Students can create and dramatize a narrative, such as

exploring a magical forest. As the story unfolds, students might jump or leap over created "logs" (using pool noodles or ropes), crawl through "caves" (perhaps using tunnels), and climb "mountains" (on playground equipment). This approach develops motor skills like jumping, leaping, crawling, and climbing, and also engages students' imaginations as they embody a character that navigates the storyline (Mavroudis, 2021).

Another physically active role-playing strategy might involve superheroes training their "powers." Students might run through obstacle courses to build agility, balance on beams as if walking tightropes, or practice rescuing "pets" (played by beanbags) from imaginary villains. Role-playing as superheroes encourages self-expression and self-efficacy while developing coordination, endurance, and teamwork. By providing a narrative context for physical activity, students become more engaged and motivated to participate.

To ensure successful integration, educators should scaffold activities to build confidence, beginning with simpler exercises and gradually increasing complexity. For example, an initial warm-up might involve students embodying basic movements of animals, such as flying like birds or jumping like frogs. Over time, these movements can evolve into more elaborate role-playing activities.

Additionally, reflection is a critical part of implementation. After each activity, students should discuss how their movements told or explained the story. This reflective process deepens their understanding of the link between physical activity and creative expression, reinforcing the goals of both creative drama and physical education.

By designing activities that blend physical and imaginative elements, and by fostering collaboration and reflection, elementary teachers can successfully integrate creative drama and physical education. These strategies support students’ social-emotional growth and motor development and make learning more engaging, meaningful, and fun.

Alignment with SHAPE America National Physical Education Standards

To strengthen the practical application of these integration strategies for physical educators, it is essential to demonstrate how they align with national standards that guide curriculum design and instructional practice. The following chart demonstrates how the integration strategies outlined in this paper align with the 2024 SHAPE America National Standards for K–12 Physical Education. These standards provide a framework for developing physically literate individuals and serve as a foundation for high-quality PE programs.

Table 1
SHAPE America Standard Alignment with Drama and Physical Education

SHAPE America Standard	Connection to Integrated Drama and PE Activities
Standard 1 Demonstrates competency in a variety of motor skills and movement patterns.	Children engage in a range of movement experiences such as crawling, jumping, balancing, climbing, and role-play scenarios that mimic real-world movement, enhancing both locomotor and non-locomotor skills.
Standard 2 Applies knowledge of concepts, principles, strategies, and tactics related to movement and performance.	Students apply movement concepts (e.g., spatial awareness, effort, relationships) while navigating obstacle courses and enacting imaginative scenes, fostering a deeper understanding of purposeful physical performance.
Standard 3 Demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.	Physical tasks embedded within creative storytelling (e.g., superhero training, jungle adventures) promote cardiovascular endurance, agility, and coordination in a fun and developmentally appropriate manner.
Standard 4 Exhibits responsible personal and social behavior that respects self and others.	Group activities and collaborative role-play support emotional regulation, empathy, cooperation, and respectful interaction, reflecting the social-emotional goals of both physical education and creative drama.
Standard 5 Recognizes the value of physical activity for health, enjoyment, challenge, self-expression, and/or social interaction.	Drama-infused PE experiences offer students opportunities for meaningful expression, playful challenge, and emotional engagement, reinforcing positive attitudes toward physical activity.

By designing activities that are purposeful, imaginative, and aligned with national standards, educators can create inclusive and enriching environments that support both physical literacy and social-emotional growth.

Conclusion

The integration of creative drama and physical education presents a transformative approach to fostering both social-emotional growth and motor development in children. By combining the imaginative, exploratory nature of creative drama with the structured, movement-focused elements of physical education, educators can create dynamic learning environments that engage the whole child—mind, body, and heart. This interdisciplinary approach highlights the shared value of movement as a tool for self-expression, collaboration, and exploration, offering children opportunities to develop creativity, physical competence, and emotional intelligence (Hu & Shu, 2025).

Through activities that blend imagination and physical activity, children gain essential life skills such as teamwork, empathy, and resilience that are the foundation for lifelong learning and healthy habits. Although some may view the cross-disciplinary approach challenging, those educators that seek or accept the opportunities of cross-disciplinary collaboration, innovative professional development, and efficient use of resources, profound benefits may result. By embracing novel strategies, schools can unlock the full potential of this integration, enriching both the educational experience and the overall development of students.

The case studies and programs highlighted in this article illustrate the powerful impact of combining creative drama and physical education. From role-playing that fosters emotional awareness to movement-based storytelling that builds coordination and imagination, the potential for meaningful, impactful learning is vast. As education continues to evolve to meet the diverse needs of today's students, the intersection of creative drama and physical education offers an exciting pathway forward. By embracing this interdisciplinary model, educators can inspire children to move, express themselves, explore their creativity, and connect with others. This can empower the next generation with the skills, self-confidence, and emotional intelligence necessary to thrive in an ever-changing world.

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