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Physical activity has many physical and psychological benefits; however, many college students are currently inactive. More research is needed to understand how to improve physical activity behaviors in college students. This study evaluated the influence of a fitness and wellness course on the students' physical activity motivation and behavior and the influence of specific components of the course based on feedback from the students and course instructors. Forty students (13 female, 27 male) participated in the study while enrolled in the course in fall 2018. Participants completed a pre and post survey measuring physical activity motivation, intention, self-efficacy and physical activity behavior, and a post-course evaluation survey. Results of repeated measures ANOVA tests on the pre-post survey measures demonstrated a significant improvement in the student's intrinsic motivation to participate in physical activity from pre ($M = 35.98$, $SD = 9.33$) to post course ($M = 38.62$, $SD = 7.84$); $F(1,39) = 7.71$, $p = .008$ and self-efficacy to exercise from pre ($M = 2.75$, $SD = .963$) to post course ($M = 3.07$, $SD = .823$); $F(1,39) = 13.31$, $p = .001$. Program ratings and open-ended responses from students and instructors indicated that participating in physical activity was the most influential component of the course. More research is needed to explore other methods for incorporating additional physical activity within similar collegiate classes.

THE INFLUENCE OF A COLLEGIATE FITNESS AND WELLNESS
COURSE ON THE STUDENTS' PHYSICAL ACTIVITY
MOTIVATION AND BEHAVIOR

by

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CHAPTER I

PROJECT OVERVIEW

Physical inactivity is a substantial health problem in the United States and is a major risk factor for serious health concerns such as coronary heart disease, diabetes, cancer, and depression (WHO, 2017). There is a significant drop in physical activity levels from high school to college years due to factors such as a decline in organized sport participation, less motivation to exercise on one's own, and the stress of a major life change (Madonia, Cox, & Azul, 2014). Additionally, students may enter college never taking a physical education course in high school due to budget cuts and increased time in the classroom preparing for state mandated exams (Sorenson & Cardinal, 2013). This is a substantial problem because the habits college students set during the formative college years typically continue after college (Mack & Shaddox, 2004). Currently, 50% of college students are physically inactive (Edlin & Golanty, 2016); and only half of adults meet the federal recommendation for weekly physical activity (CDC, 2017). Many college students take a required fitness and wellness course during college to gain knowledge on the importance of physical fitness. However, students may complete the course without developing the requisite knowledge, motivation, or skills to pursue physical activity, thus fueling a rise in physical inactivity rates and the associated major health concerns. There is a critical need to understand the effect of such a course on the students' motivation for physical activity and their actual physical activity behavior.

Physical Activity and Health in College Students

Lack of physical activity among college students is a significant problem because physical inactivity is a major risk factor for obesity and other health-related issues such as diabetes, hypertension, and depression in this population (ACHA, 2016). In response to the obesity epidemic, the United States Department of Health and Human Services created *Healthy Campus 2010*, which proposes that post-secondary educational institutions are ideal settings where physical activity should be promoted among young adults given the large impact colleges can make on their student community (Barfield & Hutchinson, 2012). The current *Healthy Campus 2020* student objectives for physical activity state that the target goal is for 53.5% of college students to meet the federally recommended amount of aerobic exercise by 2020 (ACHA, 2016). Currently, only 48.7% of college students meet this federal recommendation (ACHA, 2016). The majority of colleges and universities in the United States (84%) offer a fitness and wellness course to students, which may provide a vital intervention opportunity for increasing college students' physical activity levels (Sorenson & Cardinal, 2013).

Many students take a fitness and wellness course during their college years, but this course has changed tremendously in the last century. In the 1920's, 97% of students attending a four-year educational institution were required to take a physical education course (Sorenson & Cardinal, 2013). In the 1940's and 1950's, most universities required two to four semesters of physical education courses, in which students participated in activities such as aerobics, jogging, and outdoor activities (Kulinna et al., 2009). By the early 1960's, the requirements for physical education courses changed due to student

demand for more choices in the curricula and less perceived need for fitness (Kulinna et al., 2009). This change led physical education courses to adapt to be more academic, and many colleges began offering “conceptually-based” fitness and wellness courses, which include both physical activity and education-based lectures. This trend continues today with most collegiate fitness and wellness courses spending a significant amount of time in the classroom, rather than only participating in physical activity (Quartioli & Maeda, 2016).

Although many college students take a fitness and wellness course, numerous studies highlight the need for the course to have a significant physical activity component to change the exercise habits of college students (Cardinal & Cardinal, 1997; Quartioli and Maeda 2016; Pearman et al., 1997; Soukup, 2010). Students who partake in continuous physical activity within a semester time frame, such as taking a 14-week aerobics class or participating in regular fitness classes, increase their physical activity behavior and are more likely to continue with physical activity after the semester (Cardinal & Cardinal, 1997; Keating et al., 2005; Soukup, 2010). In essence, to increase physical activity, students must partake in habitual physical activity throughout the course. Additionally, the course must focus on developing the psychological skills necessary to overcome barriers to physical activity throughout one’s lifetime (Lockwood & Wohl, 2012). These skills may include motivation, self-efficacy, competence, or appropriate goal setting.

Physical Activity Motivation and Behavior

College fitness and wellness courses aim to promote physical activity behavior, but behavior change is a complex process and simply learning about a behavior does not necessarily lead to a change in the behavior (Lockwood & Wohl, 2012; Quartiroli & Maeda, 2016). Therefore, it is important that any health promotion program, such as a collegiate fitness and wellness course, be rooted in a theoretically sound approach to promote physical activity (Rhodes & Nigg, 2011). Many of the more effective physical activity promotion programs use an integrated approach, including behavioral strategies as well as drawing from multiple theories such as the Theory of Planned Behavior (TPB), The Transtheoretical Model (TTM), and the Self-Determination Theory (SDT).

The TPB is a social cognitive model proposing that a person's intention is the main determinant of one's behavior (Ajzen, 1991). The TPB predicts exercise behavior based on the person's intention to be physically active, which is determined by three constructs: the person's attitude towards the behavior, the person's perceived behavioral control (the person's belief about his or her perceived control over the behavior), and subjective norms (social pressure to participate in the behavior) (Antikainen & Ellis, 2011). According to TPB, intention is a precursor of a behavior (Ahmad, Shahar, Teng, Manaf, Sakian, & Omar, 2014). In a meta-analysis review of 111 TPB exercise studies, Downs and Hausenblas (2005) found that the most important predictor of physical activity was intention. In essence, the TPB theory proposes that if a person intends to exercise, then the person is likely to follow through with his or her intention.

The SDT proposes that human motivation varies from externally-regulated motivation to intrinsic or self-determined motivation depending on the fulfillment of three basic psychological needs: competence, relatedness, and autonomy (Ryan & Deci, 2000). A person may feel least autonomous (external motivation) partaking in the activity when seeking rewards or avoiding punishment, and most autonomous (internal motivation) when engaging in the activity for inherent satisfaction such as enjoyment or fun (Silva et al., 2009). Motivation is modifiable from an intervention standpoint and predicts future engagement in physical activity (Silva et al., 2009).

Both of these theories have similar constructs, such as perceived behavioral control (TPB) and perceived competence (SDT); these are also similar to self-efficacy, which is a key predictor of physical activity in Bandura's social cognitive theory (Bandura, 2001). Specifically, a person's belief about his or her ability to perform the behavior influences the person's engagement in the behavior (Antikainen & Ellis, 2011). Building self-efficacy helps people progress through the stages of change in the TTM for behavioral change. By highlighting similar constructs within the SDT, TPB, and TTM such as self-efficacy, intention, and motivation, a course that incorporates these constructs should, in theory, improve the students' physical activity behavior and motivation. Ideally, this would help create a lasting change with an increase in physical activity participation.

The current course includes seven key components with each component specifically targeted to improve the constructs of the aforementioned behavior theories. The seven components of the course include lectures, labs, participating in physical

activity, journaling/ SMART goals, physical activity logs, a student workbook, and information in the online management system Canvas. The rationale for undertaking this project is that identifying specific aspects of the course that influence the students' physical activity behavior and motivation will provide a vital stepping-stone in establishing best practices to create a more effective, behavior-modifying course. In the current course, students spend 10 of the 28 class days participating in physical activity (Appendix A). The physical activity days also include times when students partake in various labs to better understand their own fitness level and then make goals for improving or maintaining that area of fitness (Appendix B). College students can benefit from increasing their physical activity rates to improve their health and meet federal physical activity recommendations. Understanding how completing a collegiate fitness and wellness course with activities that target physical activity motivation and behavior affects the students will inform modifications to optimize the course.

Purpose Statement

The purpose of this study was to determine the influence of a required collegiate fitness and wellness on the students' physical activity motivation and behavior. The course includes activities that were specifically designed to promote physical activity motivation and behavior. The aims of this study were as follows:

Specific Aim #1: Determine the extent to which completing a 16-week fitness and wellness course affects college students' physical activity motivation, intention, self-efficacy, and actual physical activity behavior.

Specific Aim #2: Evaluate students' and instructors' perceptions of the course to identify the most effective components for influencing students' physical activity behavior and motivation.

Methods

Following IRB approval, participants were recruited through two sections of a Personal Fitness and Wellness course at a private university in the southeastern United States taught by the same instructor. Study participants completed a pre- and post-course survey assessing changes in physical activity motivation, intention, self-efficacy, and physical activity behavior.

Participants

Fifty students in the two sections of the fitness and wellness course were invited to participate in the study. IRB approval was obtained for this study from the university. The students read and agreed to the informed consent form before participating. Forty-five students completed the pre-course survey and 48 students completed the post-course survey. Forty students completed both the pre- and post-course survey. The students completed the surveys in the first ten minutes of class time on the first and last day of class. The students were informed that taking the survey was optional and participation would not affect their grade in the course. The participants in this study included 27 males and 13 females. The majority of participants were freshmen ($n = 21$), but sophomores ($n = 11$), juniors ($n = 5$), and seniors ($n = 3$) also participated in the study. The mean age of participants was 18.7 years old. Additionally, the ethnicity of the students included white ($n = 28$), African American ($n = 6$), Hispanic ($n = 3$), Other ($n =$

2), and Asian ($n = 1$). The most common majors among the participants were Music ($n = 8$) and Undecided ($n = 6$). Additionally, nine instructors completed the post-course evaluation survey (female = 6, male = 3) with an average among the group of 2.5 years of teaching of the course.

Table 1

Student Participant Demographics: Gender and Ethnicity

	<u>Asian</u>	<u>African American</u>	<u>Hispanic</u>	<u>Other</u>	<u>White</u>	<u>Total</u>
<u>Gender</u>						
Male	0	3	1	1	22	27
Female	1	3	2	1	6	13
Total	1	6	3	2	28	40

Measurements

The pre- and post-course survey drew from several social cognitive theories that have common and overlapping constructs. Additional demographic questions in the survey included gender, class-level, age, major, ethnicity, and current physical activity level.

Intrinsic Motivation Inventory. The Intrinsic Motivation Inventory (IMI) (Ryan & Deci, 2000) was used to measure a person’s subjective experience related to exercise in a 16-question survey, using a Likert scale from 1 (not true at all) to 7 (very true). For example, one question states, “ I enjoy doing physical activity very much” and the student rates this statement from 1 to 7. Higher scores indicate more internal, autonomous motivation. The survey for this study only included the Interest/Enjoyment subscale (7 items) to measure intrinsic motivation. The IMI has been used extensively in different

studies and has shown high reliability through Cronbach's alpha scores and Composite reliability scores, and this scale is appropriate to evaluate a person's level of intrinsic motivation (Monterio et al., 2015).

Intention Measure. The Intention Measure is based on the Theory of Planned Behavior (TPB). As with most TPB research, the one item of intention, is the key variable to measure to understand the respondents' intention to engage in physical activity now (in the upcoming week) and in the future (the next six months) (Macdonald, Milfont, & Gavin, 2015).

Self-efficacy. Self-efficacy was assessed using a 5-item questionnaire that measures an individual's belief in his/her ability to continue exercising in the face of barriers (Marcus et al., 1992; Marcus & Forsyth, 2008). In the questionnaire, these barriers to exercise include feeling tired, while on vacation, or if perceiving there is not time for exercise. For this measure, items are added together and divided by five to derive the mean score. Studies show reliability of the self-efficacy scale (Cronbach's alpha = .79), as well as the test-retest reliability of the questionnaire ($r = .90$) (Marcus et al., 1992).

Godin Leisure-Time Exercise Questionnaire. The Godin Leisure-Time Exercise Questionnaire (GLTEQ) is a self-report measure that assesses leisure-time physical activity, including the number of times a person engages in light, moderate, or strenuous activity for at least a 15-minute duration in the last week. This questionnaire gives a continuous score based on estimated total MET (Metabolic Equivalent of Task) expenditure (Amireault, Godin, Lacombe, & Sabiston, 2015). The survey asks the

number of sessions per week that the student engages in each activity: light, moderate, and strenuous. Total METs is calculated by adding three times frequency of light exercise, five times frequency of moderate exercise, and nine times frequency of strenuous exercise. Moderate to vigorous physical activity (MVPA) METs is the sum of five times frequency of moderate exercise and nine times frequency of vigorous activity. The GLTEQ is both reliable and valid for assessing a person's exercise behavior (Sari & Erdogan, 2016).

Stages of Change. The Stages of Change measures a person's current and intended regular exercise, which is defined as engaging in physical activity 3-5 days per week for 20-60 minutes per session. The Stages of Change short form uses one question to assess current stage of exercise adoption. Based on the response to this question, the participant is classified in one of the stages of change: pre-contemplation, contemplation, preparation, action, or maintenance; pre-contemplation is not exercising and not intending to exercise, contemplation is intending to exercise in the next six months, preparation is planning to exercise in the next 30 days, action is exercising regularly less than six months, and maintenance is exercising regularly more than six months (Marcus et al., 1992). Additionally, the survey asked the type of exercise that the students typically engage in during physical activity.

Evaluation Measures. The evaluation questions assessed the participants' experience with the course, including if the course motivated them to be physically active. The students and instructors were asked to rate each component of the course (lectures, labs, physical activity, journaling/SMART goals, physical activity logs, the

student workbook, and information on Canvas) from 1 “none at all” to 5 “a great deal” on how much each component influenced their physical activity behavior. The course survey also included open-ended questions regarding what the most influential aspect was and why and suggestions for improving the course.

Procedures

Participants completed the pre- and post-course survey online using Qualtrics from their phone, tablet, or laptop during class time (Appendix C). In combination with the post-course surveys, the participants completed five course evaluation questions. The students also indicated which aspects of the course were more helpful to them, and any suggestions that they have to improve the course. As an incentive to participate in the study, students who completed the study had the option to be entered into a raffle for one of five \$20 gift cards. The course instructors ($n = 9$) completed a course evaluation survey using Qualtrics at the conclusion of the semester. The instructors answered similar course evaluation questions as the student survey regarding the components of the course that were perceived to be most helpful for improving students’ physical activity based on their observations of students (Appendix D).

Repeated measures ANOVA were run using SPSS 25 to determine changes in the main variables from pre- and post-course. Similar responses to open-ended questions were grouped into categories.

Results

The primary aim of this study was to determine changes in the students’ physical activity behavior, motivation, self-efficacy and intention from pre to post course. An

additional aim was to determine the most effective components of the course for influencing students' physical activity behavior and motivation.

Table 2

Pre- and Post-Course Comparison of Main Variables

	Descriptives	Pre-Course	Post-Course	F value	Effect Size (η_p^2)
Intrinsic Motivation					
Physical Activity (Range 13-49)	<i>Mean</i>	35.98	38.62	7.71*	.165
	<i>SD</i>	9.33	7.84		
Self-Efficacy					
Physical Activity (Scale of 1-5)	<i>Mean</i>	2.75	3.07	13.31*	.255
	<i>SD</i>	.963	.823		
Intention					
Physical Activity (Scale of 1-5)	<i>Mean</i>	4.36	4.25	.767	.019
	<i>SD</i>	.967	.906		
MVPA METs					
Moderate & Vigorous PA (Range 0-126 METS)	<i>Mean</i>	43.80	43.03	.029	.001
	<i>SD</i>	26.99	20.19		
Total METs					
Mild + MVPA METS (Range 0-373 METS)	<i>Mean</i>	52.63	54.26	.10	.003
	<i>SD</i>	29.16	21.34		

* $p < .05$

Results from a repeated ANOVA analysis of the main variables showed participants reported greater Intrinsic Motivation (pre course $M = 35.88$, post course $M = 38.62$; $F(1,39) = 7.71$, $p = .008$) and Self-Efficacy (pre course $M = 2.75$, post course $M = 3.07$, $F(1,39) = 13.31$, $p = .001$) to be physically active at the end of the course compared to the beginning of the course. Self-reported total METs, which included mild, moderate, and vigorous physical activity also improved from pre ($M = 52.63$, $SD = 29.16$) to post course ($M = 54.26$, $SD = 21.34$); however, the improvement in self-reported Total METs scores was not statistically significant ($p = .754$) There were no significant differences in

the outcomes of self-reported MVPA (moderate to vigorous physical activity) METs ($p = .865$) and intention ($p = .387$) (see Table 2).

Regarding the type of activity that students participated in regularly pre and post course, there was an increase in the number of students who stated that they participated in certain exercises: walking increased from eight to 15, runners from nine to 18, and weightlifters from 12 to 19. There was a decrease in students who stated that they regularly participated in football from seven to three and swimming from four to zero.

Table 3

Pre- and Post-Course Stage of Change Percentage and Frequencies

<u>Stage of Change</u>	<u>Pre-Course</u>		<u>Post-Course</u>	
	Percentage	Number	Percentage	Number
Pre-Contemplation	5%	2	5%	2
Contemplation	8%	3	3%	1
Preparation	22%	9	10%	4
Action	8%	3	25%	10
Maintenance	57%	23	57%	23

The results also showed a change in the number of students at stages of their readiness to participate in physical activity (Table 3). There was a drop in the number of students in the contemplation stage (“I intend to exercise in the next 6 months) from pre-course ($n = 3$) to post course ($n = 1$) and preparation stage (“I intend to start exercising regularly in the next 30 days”) from pre-course ($n = 9$) to post course ($n = 4$). The most notable change was the number of students in the action stage, stating they have been

exercising regularly for less than 6 months, from pre-course ($n = 3$) to post course ($n = 10$). The maintenance stage had the same large number ($n = 23$) in pre to post course.

Course Evaluation Results

The students and the instructors completed a course evaluation survey at the end of the semester to understand the influence of the course on the students' physical activity motivation and behavior from the students' and instructors' point of view. Eight of the nine instructors felt that the course improved the students' physical activity behavior. Of the students who completed the post course survey ($n = 41$), almost all ($n = 36$) stated "yes" the course did motivate them to be more physically active. When asked why, one main theme that emerged among the students was that the course improved the students' knowledge ($n = 13$) of the benefits of being physically active with one student stating, "having more knowledge about physical exercise helped me understand it more. By knowing more about exercise and the benefits, I was more motivated to continue exercising." The second theme that emerged from the open-ended question was that the course improved the students' motivation ($n = 13$) to be physically active, as summarized by one student stating, "After studying this course I've been more motivated to be physically active. After learning the proper and correct ways to work out, the results have finally started to show." Eight of the nine course instructors felt the course improved the students' physical activity behavior with one instructor commenting, "I have had several students remark that this class got them started in trying new ways to exercise and that they understand the benefits that being active provides."

Influential course components. From the course evaluation survey, both students and instructors rated participating in physical activity as being the most influential to their physical activity behavior and completing class labs as the second most influential (Table 4).

Table 4

Student and Instructor Course Component Evaluation Means

<u>Course Component</u>	<u>Student</u>	<u>Instructor</u>
Physical Activity	3.71	3.78
Labs	3.47	3.22
Lectures	3.28	3.12
Canvas Information	2.89	2.89
Journaling/ SMART Goals	2.93	2.67
Physical Activity Logs	2.76	2.25
Student Workbook	2.47	2.22

Note: Rating range from 1 (not at all) to 5 (a great deal)

These results are consistent with the open-ended question asking students and instructors what aspect of the course was most helpful at improving their physical activity behavior. Almost all of the instructors ($n = 8$) commented that participating in physical activity was most helpful in improving the students' physical activity behavior.

Additionally, the majority of students ($n = 22$) responded that physical activity was most helpful with one student stating, "Getting out and actually doing the exercise or activity for myself. It's engaging and fun compared to sitting and being told what is right and what I should do." Many students commented that participating in a variety of physical activities in the course was helpful with one student stating, "when we went into the gym and did multiple exercises it showed me the different things you can do to exercise that

you don't even realize it.” A few students commented on the other components of the course as being helpful: Labs ($n = 10$), Lectures ($n = 5$), Journaling ($n = 2$), Other ($n = 2$), Activity Log ($n = 1$), and Canvas Information ($n = 1$).

Suggestions for the course. Many students ($n = 19$) commented that they had no suggestions for further improvement of the course. Of the students who did make a suggestion for the course ($n = 15$), the most common suggestion ($n = 11$) was to include more activities, particularly more group and structured activities. Suggestions for improving the course from instructors were split between more time spent in physical activity ($n = 3$), expanding the course to include more topics (e.g. stress management and motivation) and overall wellness ($n = 2$), or no suggestion ($n = 2$).

Discussion

The findings suggest that the collegiate Fitness and Wellness course did have an impact on the students from pre to post course. Results from the study indicate a significant increase in the students' intrinsic motivation and self-efficacy to participate in physical activity. Additionally, fewer students were in the “lower” stage of change intending to exercise in the next 30 days (preparation) and more stated that they have been exercising regularly for the past six months (action) at post-course. With an increase in the students' motivation and self-efficacy of exercise, coupled with moving into the action stage of the behavior change, a consideration for a future study would be to see if these students continue to exercise and move into the maintenance stage in the next few months.

Almost all of the students and instructors felt the course did improve the students' physical activity behavior. Many students particularly commented on how the class improved their knowledge of the importance of physical activity and their motivation to participate in physical activity. Interestingly, the students' physical activity behavior, measured in self-reported MVPA METs and Total METs, did not improve from pre- to post-course. This could be due to the timing of the survey, with students feeling particularly active the first day of class coming off of summer break and not feeling as active the last week of class moving into exam week. Using the Godin Scale Score for Health, MVPA METs above 24 are in the category of "Active with substantial health benefits" (Godin, 2011). The students pre- and post-course MVPA METs scores both were over 24 (pre-course MVPA METs = 43.80, post-course MVPA METs = 43.03), suggesting the students were active before the class began and were just as active when the class ended.

Evaluation ratings and open-ended responses suggest that students and instructors both believe that participating in physical activity is the most influential component of the course for improving the students' physical activity behavior. Students and instructors both stated that participating in labs and attending lectures were the second and third most influential for improving physical activity behavior. The findings suggest that the other components of the course, such as journaling/SMART goals, physical activity logs, the student workbook, and the information on Canvas were not viewed as particularly influential components of the course for improving the students' physical activity behavior. It is possible that because the labs integrate goal-setting into

assignment, this may have caused the lab activities to be rated as more influential than goal-setting on its own. The class may need to be restructured to increase the amount of time students participate in physical activity, particularly in more structured and group activities as suggested by the students. The extra time in physical activity may come at the expense of spending less class time on the least influential aspects of the course such as the student workbook and completing physical activity logs.

The study results provide vital information on the influence of a collegiate fitness and wellness course on the students' physical activity motivation and behavior. Spending time in physical activity was reported from students and instructors as the most influential aspect of the course. Also, the students' intrinsic motivation and self-efficacy significantly improved from pre to post course. This may have occurred because the most influential component of the course, physical activity, also focused on improving the theoretical construct of self-efficacy from the TPB through teaching students how to properly and successfully participate in a range of physical activities. Additionally, the course is set-up to provide students with autonomy, or a sense of control over their behavior, by providing students with a range of physical activities to choose from and having the students learn about their own self-fitness through interactive labs. Through the SDT, a person's autonomy is a main determinant of a person's intrinsic motivation. The most influential aspects of the course, physical activity and labs, also focused on supporting autonomy (Appendix E). The study results provide the necessary information to modify the course to further improve physical activity behavior within the collegiate student population.

CHAPTER II

DISSEMINATION

The first step in disseminating this research is to present the findings of the study to the nine Personal Fitness and Wellness course instructors, as well as the Dean of Sports Sciences, at the home university. Although all course instructors use a similar model using a combination of lectures and activities to teach the course, there is a difference in the amount of time the instructor spends on each component of the course. The presentation will include the purpose of the research, the study details, results, and an explanation of best practices to teach the course moving forward. This will, in turn, likely create more consistency in teaching practices with all instructors following the model presented in the PowerPoint presentation. Additionally, instructors will teach the course emphasizing the components that are most likely to improve students' physical activity motivation and behavior.

Presentation Details

The following sections will be outlined by topic. The complete PowerPoint presentation is in the appendices (Appendix F).

Introduction and Background (Slide #1 & #2)

Good afternoon! My name is Heather DeLangie and I am an adjunct professor, as well as a 4th year doctoral student. I have been teaching the Personal Fitness and Wellness course here for seven years and I have seen this course evolve immensely

throughout my time here. As some of you who have taught this course for a while know, we used to have a textbook that students were required to purchase for the course. As instructors, our job was to relay the information from the textbook to the students, usually through PowerPoint presentations and lectures. As a result, students spent a lot of time sitting at their desks learning about physical activity, and not necessarily spending a lot of time actually participating in physical activity. In the fall of 2017, the course replaced the textbook with a student workbook that I created. The workbook contained all the necessary labs, as well as readings from public domain websites such as the Centers for Disease Control and Prevention and the American Council of Exercise. Additionally, in the spring of 2018, the instructors started using the online learning management system Canvas for the students to access the course information online. In Canvas, the information from the student workbook, the labs, and ancillary materials such as videos and self-quizzes were easily accessible to the students.

Taking a broader view, let's look at physical activity and college students (slide #2). As many of us know as professionals in the health and wellness field, physical inactivity is a major problem in the United States. There is a significant drop in physical activity levels from high school to college for reasons such as a decline in organized sport participation, living on one's own for the first time, and the stress of a major life change. Statistics show that 50% of college students are currently inactive. There is a need to improve physical activity levels among college students. At the national level, the United States Department of Health and Human Services created *Healthy People 2020*, which is a national health initiative that states college and universities are ideal places to

implement programs to improve physical activity among college students to make a large impact within this population. The specific *Healthy People 2020* student objectives state that the target goal is for 53.5% of college students to meet the federal recommendations for aerobic exercise by 2020. Currently 48.7% of college students meet this recommendation. Eighty-four percent of colleges and universities offer a fitness and wellness course, which provides a vital intervention opportunity for increasing physical activity levels among this population.

There has been a change in the collegiate fitness and wellness course in the past century. In the early 1900's, the collegiate fitness and wellness course was mostly fitness-based with students participating in activities such as jogging, aerobics, or gymnastics. In the 2000's, the course has changed to be more "conceptually-based," which means the course includes both physical activity and education-based lectures. Students in most fitness and wellness courses today spend time in the classroom learning about the importance of physical activity, rather than only participating in physical activity.

Course Components (Slide #3)

As you can see in this slide, there are seven components of the Personal Fitness and Wellness course, with each component rooted in a specific construct from a theoretical framework. The seven components of the course first include journaling, with an emphasis on goal setting to improve the students' intention to be physically active and to improve their attitude towards physical activity. Next, the students participate in various labs where they can test their own level of fitness with an emphasis on goal setting to improve their intention to exercise (and improve that specific area of fitness),

and autonomy to help the students build confidence exercising on their own. The lectures of the course help increase the students' knowledge of physical activity by emphasizing the importance of being active in their everyday life. Next, in this course, students are introduced to a variety of modes of physical activity such as basketball, group fitness, strength training, hiking, and cardiovascular machines. By actually participating in physical activity, students are able to improve self-efficacy ("I can do this!"), subjective norms by working out with others, competence in being able to do the activity, and autonomy through choosing their own mode of physical activity during class. The physical activity logs help students track their physical activity throughout the semester to improve their self-efficacy and competence in participating in physical activity. Next, the information provided in the student workbook, such as information on the FITT Principle and Target Heart Rate, helps the students to improve their attitude towards physical activity. Finally, learning about physical activity in Canvas through videos, readings, and self-quizzes also helps to improve the students' attitude towards physical activity.

Study Purpose (Slide #4)

The purpose of this study was to understand the influence of a collegiate fitness and wellness course on the students' physical activity motivation and behavior. In essence, I wanted to know whether this course did indeed help improve physical activity levels in the students and if the students completed the course feeling more motivated to continue with physical activity on their own. The "why" for completing this study was to identify the specific components of the course that had the greatest influence on the

students' physical activity motivation and behavior. Next, I wanted instructors at our university, and around the country that teach this course, to have a set of best practices to implement when teaching this course. Finally, ultimately, I wanted to complete this study with the necessary information to create an effective, behavior-modifying course for college students to be more physically active and motivated to continue being physically active after completing the course.

Study Design (Slide #5 & #6)

The design of this study included a pre and post course survey for students to complete on the first and last day of class. The survey drew from several social cognitive theories that have common and overlapping constructs. The survey included questions from the Intrinsic Motivation Inventory (IMI) that assessed motivation, the intention to exercise measured intention, the Self-Efficacy for Exercise (SEE) questionnaire assessed self-efficacy, and the Godin Leisure-Time Exercise (GLTEQ) Questionnaire assessed the student's current level of physical activity, and a question from the Transtheoretical Model to determine the student's readiness for change when participating in physical activity. Additional demographic questions in the survey included gender, class-level, age, major, ethnicity, and current physical activity level. The post course survey also included course evaluation questions.

Students were asked to participate in the study from two sections of the Personal and Wellness course in the fall of 2018 with the same instructor. The nine instructors of the Personal Fitness and Wellness course completed a Post-Course Instructor Survey to

help identify aspects of the course instructors felt were most influential at improving the students' physical activity motivation and behavior.

Study Participants (Slide #7)

Forty students completed the pre and post course survey. The students completed the surveys in the first ten minutes of class time on the first and last day of class. The students were informed that taking the survey was optional and participation would not affect their grade in the course. The participants in this study included 27 males and 13 females. The participants included 21 freshman, 11 sophomores, five juniors, and three seniors. The race/ethnicity of the participants included 29 white participants, six African Americans, three Hispanics, two participants who identified as "other" for their ethnicity, and one Asian participant. The most common majors among the participants were eight Music majors and six "Undeclared" majors

Results of the Study (Slide #8, #9, #10, #11)

Using a repeated ANOVA analysis of the main variables between the pre and post course, you can see that there was a statistically significant positive change of two main variables within the participants: intrinsic motivation and self-efficacy. Total METS, which included mild, moderate, and vigorous physical activity also improved from pre to post course, however, the improvement was not statistically significant. There was no significant change in MVPA METs and intention to exercise from pre and post course. Regarding the type of activity that students participated in regularly, there was an increase in the number of students who stated that they participated in certain exercises

from pre to post course: walking increased from eight to fifteen, runners from nine to eighteen, and weightlifters from twelve to fifteen.

Using the Stages of Change behavior model, there was a drop in the number of students in the contemplation and preparation stages whereas the number of students engaging in regular exercise (action) increased. These results indicate that the course, particularly the time spent in physical activity, helps students become regular exercisers. Students and instructors were asked to rate each of the seven components of the course from 1 “not at all” to 5 “a great deal.” The components of the course included lectures, labs, physical activity, journaling/SMART goals, physical activity logs, the student workbook, and information on Canvas. Looking at the chart in the slide, both students and instructors rated participating in physical activity as being most influential to their physical activity behavior and completing class labs as the second most influential. These results are consistent with the open-ended question asking students and instructors what aspect of the course was most helpful at improving their physical activity behavior. Eight of the nine instructors, and 22 of 40 students, commented that participating in physical activity was most influential. The most common suggestion for improving the course from the students and instructors was for the course to include more time participating in physical activity, particularly more group and structured activities. These findings indicate that physical activity is most influential at improving physical activity and students want to participate in more physical activity. As instructors of this course, my recommendation from these findings is to modify the course to increase the amount of time and variety of physical activities that students participate in during class time.

Action Plan (Slide #12 & #13)

There are a few actionable steps to take to implement the results of this study into the course. The first step is to share the results of the study with instructors that teach this course at the university, as well as key personnel within the department, which we are doing today. Primarily, everyone should take note that the most influential aspect of the course from the students and instructors from the program ratings and open-ended questions is time spent in physical activity. Second, as a group, we need to revisit the learning objectives of the course. If the main objective of the course is truly to help students improve their physical activity behavior and their motivation to continue with physical activity after the course, then I believe we need to implement more physical activity into the course as suggested by the study results.

This brings me to the third step, which is to modify the course schedule. I have included the current course schedule and a revised course schedule in the next slide. As you can see, the current schedule has the students participating in physical activity ten of the 28 course days. The revised schedule has the students participating in physical activity 18 of the 28 course days, which almost doubles both the amount of days that students participate in physical activity and the array of activities they experience. The new schedule still includes all of the activities, lectures, and labs from the current schedule, with an addition of more structured and group activities as suggested from the students including swimming, sand volleyball, pickleball, ultimate Frisbee, canoeing, and additional yoga and weightlifting days. I was able to include additional physical activity class time by having students complete some the classwork outside of the classroom. For

example, I made non-fitness labs (Lab 1: Lifestyle Evaluation and Lab 11: Putting it all Together) and reviewing articles and videos on Canvas as homework rather than doing them during class time. Next, I reformatted the student workbook by adding the relevant information from the workbook document to pages on Canvas. Originally, the students printed out the student workbook and used it to complete labs and have access to class information such as Target Heart Rate calculations and Rate of Perceived Exertion (RPE) since there was no longer a textbook. Since the labs moved from the workbook to pages on Canvas, it makes sense that students may be more inclined to look at a page on Canvas with the aforementioned information rather than open a separate PDF document. In the study, zero students mentioned the student workbook as influential at improving their physical activity behavior in the open-ended questions. Then, I took SMART goals/journaling and physical activity logs, which were not viewed as particularly influential, and used them as homework assignments outside of class time to create additional time for physical activity. Students complete their lab assignment, which includes a write-up of the results of their fitness lab and goals to improve that area of fitness, outside of class time so it makes sense to have all goal-setting activities as outside of classroom assignments. I also combined short lecture days together or combined a lecture and a lab day, which created additional free days to the schedule. Finally, I added a short burst of physical activity, like a walk, during test review days, which generally take less class time. I have created a teaching guide with the study results and strategies for implementing these changes that I can share with all of the instructors as blueprint for revising the course (Appendix G).

The results of this study were eye-opening and provide data that displays that actually participating in physical activity is most influential at improving physical activity behavior. Using this data, we can modify the course by decreasing the class time spent on the aspects of the course that are not viewed as particularly influential such as the student workbook, SMART goals/ journaling, and PA logs. This allows extra class time to provide the students with twice as much time spent in physical activity, while still completing all the labs and lectures of the course.

CHAPTER III

ACTION PLAN

This dissertation project provides excellent information on the influence of a collegiate fitness and wellness course on the students' physical activity motivation and behavior. The first step is to share the study findings with course instructors and key personnel at my university and use the information to modify the course. Next, because many colleges offer a fitness and wellness course, I plan to post the teaching guide that I created on the university website to publicly share the findings for instructors at different universities (Appendix G). The teaching guide specifically highlights the importance of incorporating the maximum amount of time for students to participate in physical activity into the curriculum to improve the students' physical activity motivation and behavior. Instructors from other universities can specifically use the suggestions included in the teaching guide to create more time for physical activity during class such as combining lectures, assigning Canvas information and non-fitness labs as homework, adding physical activity on test review days, and reducing the amount of class time students spend on aspects of the course that are not viewed as particularly influential such as journaling/SMART goals and physical activity logs. Through using the strategies aforementioned, the revised course schedule almost doubles the amount of days that students participate in physical activity from 10 to 18 class days of the total 28 total days.

The revised schedule, which is included in the teaching guide, still includes the lectures, necessary labs, and previous activities from the current schedule. In essence, the teaching guide is meant to help instructors simplify the course, spending fewer time aspects of the course not viewed as particularly influential in order to focus on the most influential aspect of the course: time spent participating in physical activity. In the long-term, through incorporating the study findings into the revised collegiate fitness and wellness course, my goal is that students will continue with physical activity after the class as a lifelong endeavor to reduce the health burdens associated with physical inactivity.

Next, I will submit an abstract of the study results to the American College Health Association (ACHA) to present the findings at their national conference. The ACHA's mission is to advance the health of college students and the campus community by increasing knowledge and evidence-based guidelines into college health practices (ACHA, 2019). The results of the study directly relate to the mission of ACHA by using new study results to improve a collegiate fitness and wellness course. Colleges and universities around the United States can use the study results and teaching guide as a guideline for best practices when teaching the university's fitness and wellness course, if offered, or other fitness-based programs on campus.

Finally, I will prepare and submit articles summarizing my findings to peer-reviewed, professional-focused journals such as *Strategies* and *Journal of Physical Education, Recreation, and Dance (JOPERD)*. Through possible publication, the findings from the study will be able to reach a larger audience of professionals in the field. Understanding the positive impact that participating in physical activity has on a persons'

self-efficacy and intrinsic motivation to continue exercising is promising in the field, and professionals can apply this information in the collegiate setting or elsewhere. Instead of complicating physical activity through excessive information or tracking, professionals can focus on helping people spend time participating in a myriad of fun and rewarding physical activities experiences that will be beneficial for long-term adherence.

In conclusion, using the aforementioned action plan, my dissertation findings can be influential beyond the study setting of a small private university. The teaching guide creates a blueprint for an effective fitness and wellness course that can be adapted by other colleges to have a substantial impact at improving physical activity among this population. The publication of the study findings in professional journals and the presentation of the findings at national conferences can help reach professionals in the field throughout the country. The results highlight the importance of incorporating the maximum amount of the time in the most influential aspect of the course: physical activity and less time understanding physical activity through journaling or physical activity logs. These findings may be incorporated in additional collegiate settings beyond the classroom that promote physical activity by emphasizing the importance of spending the majority of program time in physical activity.

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APPENDIX A

PERSONAL FITNESS AND WELLNESS COURSE SCHEDULE

Sample Fitness and Wellness Course Class Schedule

<u>Date</u>	<u>Topic</u>	<u>Workbook/ Canvas</u>	<u>Due</u>
8/23	Intro/Syllabus Review		
8/25	Tour of McGee Center		
8/30	Health/Wellness Lecture	Wellness Continuum, Stages of Change	Lab 1
9/1	Smart Goals Journal, Lab 1	SMART Goals, FITT Principle	Lab 2
9/6	Fitness		
9/8	<i>Basketball</i>		
9/13	Body Composition	BMI & Body Fat %	
9/15	<i>Body Composition Lab/ Walk</i>		Lab 3
9/20	Cardio Endurance Lecture	FITT Principle	
9/22	<i>One Mile Walk Test</i>		Lab 4
9/27	Journal and Meditation		
9/29	Test Review		
10/4	Hiking at Campus Lake		
10/6	<i>Target and Max Heart Rate</i>	Max & Target HR	
10/11	Mid-Term Exam		
10/13	<i>Team Games</i>		
10/18	Flexibility	FITT Principle	
10/20	<i>Yoga and Flexibility Lab</i>		Lab 8
10/25	Muscular Strength & Endurance	FITT Principle	
10/27	<i>Muscular Endurance Lab</i>		Lab 6
11/1	<i>Weightlifting</i>		Lab 7
11/3	<i>Muscular Strength Lab</i>		Lab 8
11/8	Nutrition Movie		
11/10	<i>BodyPump Class</i>		
11/15	Nutrition Lecture	Labels, Daily Plate, Sources of Nutrition	
11/17	Smoothie Day		Lab 10
11/22	No Class -Thanksgiving		
11/24	No Class -Thanksgiving		
11/29	Putting it all Together Lab		Lab 11
12/1	Test Review	*Turn in Journal	

Note: Topics italicized represent students doing physical activity that day

APPENDIX B

SAMPLE LAB ACTIVITY

Lab 8: Flexibility Test

Sit & Reach Directions

1. Remove shoes and sit facing the measuring device with the knees fully extended and feet completely flat against the device with 10cm between them.
2. Reach as far forward as possible, with palms down, arms evenly stretched forward, and knees still fully extended.
3. Hold the position for about 2 seconds.
4. Perform the stretch twice, recording the best score of the 2 stretches to the closest to 0.5 cm.
5. **Amount of cm achieved:** _____

Find Your Flexibility Rating Using the Chart Below

Men	Needs Improvement	Fair	Good	Very Good	Excellent
Age: 15-19	Below 24	24-28	29-33	34-38	Above 38
20-29	Below 25	25-29	30-33	34-39	Above 39
30-39	Below 23	23-27	28-32	33-37	Above 37
40-49	Below 18	18-23	24-28	29-34	Above 34
50-59	Below 16	16-23	24-27	28-34	Above 34
60-69	Below 15	15-19	20-24	25-32	Above 32

Women

Age: 15-19	Below 29	29-33	34-37	38-42	Above 42
20-29	Below 28	28-32	33-36	37-40	Above 40
30-39	Below 27	27-31	32-35	36-40	Above 40
40-49	Below 25	25-29	30-33	34-37	Above 37
50-59	Below 25	25-29	30-32	33-38	Above 38
60-69	Below 23	23-26	27-30	31-34	Above 34

Follow-up Questions

1. How did you score? What category are you in?
2. Set a realistic goal for your flexibility. State the category you would like to be in AND the number of centimeters you would like to reach.
3. List a specific activity that you can do to improve your score.
4. Explain why having good flexibility is important to you for fitness and everyday life.

APPENDIX C

STUDENT PRE- AND POST-COURSE SURVEY

This survey is completed in Qualtrics and the questions are copy and pasted here. The last five questions are added only to the Post-Course Survey.

Pre and Post Course Survey

What are the last 4 numbers of you student ID number (for matching pre and post course survey results only).

Which gender do you most identify with?

- Male
- Female
- Other _____

What class-level are you currently?

- Freshman
- Sophomore
- Junior
- Senior

What is your age?

What is your major?

What is your ethnicity?

- White
- Black or African American
- American Indian or Alaska Native
- Asian
- Native Hawaiian or Pacific Islander
- Hispanic
- Other _____

"Regular exercise" is defined as engaging in physical activity (e.g. walking, aerobics, jogging, swimming, etc.) 3-5 days per week for 20-60 minutes per session. Do you exercise regularly according to this definition?

- YES, I have been exercising regularly for MORE than 6 months
- YES, I have been exercising regularly for LESS than 6 months
- NO, but I intend to start exercising regularly in the next 30 days
- NO, but I intend to start exercising regularly in the 6 months
- NO, and I do NOT intend to start exercising in the next 6 months

For each statement, please indicate how true the statement is for you, using the following scale as a guide.

	1 (Not at all true)	2	3	4 (Somewhat true)	5	6	7 (Very true)
1- I enjoy doing physical activity very much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2- Physical activity is fun to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3- I think physical activity is boring.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4- Physical activity does not hold my attention at all.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5- I would describe physical activity as very interesting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6- I think physical activity is quite enjoyable.

7- While I am doing physical activity, I think about how much I enjoy it.

Indicate how confident you are that you could be physically active in each of the following situations.

	Not at all confident	Slightly confident	Moderately confident	Very confident	Extremely confident
When I am tired	<input type="radio"/>				
When I am in a bad mood	<input type="radio"/>				
When I feel I don't have time	<input type="radio"/>				
When I am on vacation	<input type="radio"/>				
When it is raining or snowing	<input type="radio"/>				

Please indicate on a scale of 1 to 5 how accurate this statement is for you.

	1- Strongly disagree	2 - Neither agree nor disagree	3 - Somewhat agree	4- agree	5- Strongly agree
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I intend to exercise next week	<input type="radio"/>				
I intend to exercise regularly the next 6 months	<input type="radio"/>				

During a typical 7-day period (one week), indicate on average how many times AND the number of minutes per session you do the following kinds of exercise for MORE THAN 15 MINUTES.

Strenuous exercise (heart beats rapidly). (e.g. running, jogging, hockey, football, soccer, basketball, vigorous swimming, long distance biking).

- o # of times _____
- o Minutes per session _____

Moderate Exercise (not exhausting). (e.g. fast walking, baseball, tennis, easy biking, volleyball, badminton, easy swimming, dancing).

- o # of times _____
- o Minutes per session _____

Mild Exercise (minimal effort). (e.g. yoga, archery, fishing, bowling, golf, easy walking).

- o # of times _____
- o Minutes per session _____

What types of physical activity do you participate in regularly?

During a typical 7-day period (a week), in your leisure time, how often do you engage in regular physical activity long enough to work up a sweat (heart beats rapidly)?

- o Often
- o Sometimes
- o Rarely

Post-Course Evaluation Questions (added to the end of the Post-Course Survey):

Did this course motivate you to become more physically active?

- o Yes
- o No

Please explain your answer above.

Please rate each of the following 7 class activities from "None at all" to "A great deal" on how much they influenced your physical activity behavior.

	None at all	A little	A moderate amount	A lot	A great deal
Lectures	<input type="radio"/>				
Doing Physical Activity (yoga, basketball, hiking, etc.)	<input type="radio"/>				
Student Workbook	<input type="radio"/>				
Physical Activity Log	<input type="radio"/>				
Labs (one-mile walk test, bench press test, etc.)	<input type="radio"/>				
Journaling/ SMART Goals	<input type="radio"/>				
Canvas Information (articles, videos, etc.).	<input type="radio"/>				

Which of the above aspects of the course were most helpful to you and why?

What suggestions do you have to improve the course?

Please share any additional comments you have about this course.

If you would like your name entered into a raffle to win a \$20 Target gift card, please fill out your name and email address in this Google form:

<https://docs.google.com/forms/d/e/1FAIpQLScEvZRTi4GK8ssahY5dzkx8H3PrJsDwE7QNxJG8IK9xcb3nlw/viewform>

APPENDIX D

INSTRUCTOR EVALUATION SURVEY

This survey was completed in Qualtrics and the questions are copy and pasted here.

Instructor Course Evaluation Form for 9 Instructors

Post-Course Instructor Evaluation Survey

What is your position title?

Which gender do you most identify with?

Male

Female

Other _____

How many years have you taught the Personal Fitness and Wellness course at this University?

Do you think this course motivated your students to become more physically active?

Yes

No

Please Explain your answer above.

Please rate each of the following 7 class activities from "None at all" to "A great deal" on how much you believed they influenced your students' physical activity behavior.

	None at all	A little	A moderate amount	A lot	A great deal
Lectures	<input type="radio"/>				
Doing Physical Activity (yoga, basketball, hiking, etc.)	<input type="radio"/>				
Student Workbook	<input type="radio"/>				
Physical Activity Log	<input type="radio"/>				
Labs (one-mile walk test, bench press test, etc.)	<input type="radio"/>				
Journaling/ SMART Goals	<input type="radio"/>				
Canvas Information (articles, videos, etc.).	<input type="radio"/>				

Which of the above aspects of the course do you believe were most helpful to your students and why?

What suggestions do you have to improve the course?

Please share any additional comments you have about this course.

APPENDIX E

COMPONENTS OF THE FITNESS AND WELLNESS COURSE

Component of the Course and Theoretical Construct to Improve

<u>Component of the Course</u>	<u>Theoretical Construct to Improve</u>
Journaling (with Goal Setting)	Intention & Attitudes towards PA (TPB)
Labs (with Goal Setting)	Intention (TPB), Autonomy (SDT)
Lecture	Attitudes towards PA (TPB)
Participation in Physical Activity	Perceived Behavioral Control & Subjective Norms (TPB), Competence & Autonomy (SDT)
Physical Activity Logs	Perceived Behavioral Control (TPB), Competence (SDT)
Student Workbook	Attitudes towards PA (TPB)
Learning about PA (videos, articles)	Knowledge about PA (TPB)

APPENDIX F

POWERPOINT PRESENTATION

The Influence of a Collegiate Fitness and Wellness Course on the Students' Physical Activity Motivation and Behavior

Heather DeLangle

Physical Activity and College Students

- + Major Health Problem in the U.S.
 - + Drop in PA Levels
 - + 50% Inactive
- + Necessary Improvements
 - + National Level – *Healthy Campus 2020*
 - + Local Level – 84% Colleges offer this Course
- + Change in Course
 - + 1900's: Fitness Based
 - + Now: Knowledge Based



Components of a Fitness and Wellness Course

Course Component of Redesigned Course	Theoretical Construct to Improve
Journaling (with Goal Setting)	Intention & Attitude towards PA (TPB)
Labs (with Goal Setting)	Intention (TPB), Autonomy (SDT)
Lectures	Attitude towards PA (TPB)
Participation in Physical Activity	Perceived Behavioral Control & Subjective Norms (TPB), Competence & Autonomy (SDT)
Physical Activity Logs	Perceived Behavioral Control (TPB), Competence (SDT)
Student Workbook	Attitude towards PA (TPB)
Learning about PA on Canvas (videos, articles)	Attitude towards PA (TPB)

Study Purpose

To Understand the Influence of a Collegiate Fitness and Wellness Course on the Students' Physical Activity Motivation and Behavior

Study Design

+ Pre and Post Course Survey

- + Survey Details
 - + 2 Sections of PE101, Same instructor
 - + Theories: TPB, SDT, TTM

+ Instructor Course Evaluation

- + Identify Influential Course Components

+ Data Analyzing

- + SPSS for Quantitative Data
- + Emergence of Themes for Qualitative Data



Study Design: Questionnaire



Study Participants

+ Participants

+ 40 Students: 21 Freshman, 11 Sophomores, 5 Juniors, 3 Seniors

Participant Demographics: Gender and Ethnicity

	Asian	African American	Hispanic	Other	White	Total
Gender						
Male	0	3	1	1	22	27
Female	1	3	2	1	6	13
Total	1	6	3	2	28	40

+ Most Common Major: Music (8), Undeclared (6)

Results of the Study: Main Variables

Table 2

Pre and Post Course Comparison of Main Variables

	Descriptives	Pre-Course	Post-Course	F value	Effect Size
Intrinsic Motivation					
Physical Activity	<i>Mean</i>	35.98	38.62	7.71*	.165
(Range 13-49)	<i>SD</i>	9.33	7.84		
Self-Efficacy					
Physical Activity	<i>Mean</i>	2.75	3.07	13.31*	.255
(Scale of 1-5)	<i>SD</i>	.963	.823		
Intention					
Physical Activity	<i>Mean</i>	4.36	4.25	.767	.019
(Scale of 1-5)	<i>SD</i>	.967	.906		
MVPA METS					
Moderate & Vigorous PA	<i>Mean</i>	43.80	43.03	.029	.001
(Range 0-126 METS)	<i>SD</i>	26.99	20.19		
Total METS					
Mild + MVPA METS	<i>Mean</i>	52.63	54.26	.10	.003
(Range 0-373 METS)	<i>SD</i>	29.16	21.34		

* $p < .05$

Results of the Study: Main Variables

Table 3
Pre and Post Course Stage of Change Percentage & Frequencies

Stage Of Change	Pre-Course		Post-Course	
	Percentage	Number	Percentage	Number
Pre-Contemplation	5%	2	5%	2
Contemplation	8%	3	3%	1
Preparation	22%	9	10%	4
Action	8%	3	25%	10
Maintenance	57%	23	57%	23

Results of the Study: Influential Course Components

+ Quantitative Results

Table 4
Student and Instructor Course Component Evaluation Mean

<u>Course Component</u>	<u>Student</u>	<u>Instructor</u>
➔ Physical Activity	3.71	3.78
➔ Labs	3.47	3.22
Lectures	3.28	3.12
Canvas Information	2.89	2.89
Journaling/ SMART Goals	2.93	2.67
Physical Activity Logs	2.76	2.25
Student Workbook	2.47	2.22

Results of the Study: Student Suggestions

"More activities like hiking"

"More activity if possible"

"Make group games mandatory"

"Doing more yoga classes"



"A more structured workout plan"



Action Plan for the Course

- + Share Results with Key Personnel
- + Revisit Course Learning Objectives
- + Modify the Course Schedule (see next slide)
 - + More Time in PA & Group Structured Activities
- + Share Teaching Guide with Instructors at other Universities



Current

CURRENT Sample Fitness and Wellness Course Class Schedule

Week	Topic	Workbook/ Canvas	Due
1	Intro Syllabus Review Tour of McGee Center		
2	Health/Wellness Lecture Smart Goals Journal, Lab 1	Wellness Continuum, Stages of Change SMART Goals, FITT Principle	Lab 1 Lab 2
3	Fitness Lecture Basketball		
4	Body Composition Body Composition Lab & Walk	BMI & Body Fat %	Lab 3
5	Cardio Endurance Lecture One Mile Walk Test	FITT Principle	Lab 4
6	Journal and Meditation Test Review		
7	Hiking at Campus Lake Target and Max Heart Rate	Max & Target HR	
8	Mid-Term Exam Team Games		
9	Flexibility Yoga and Flexibility Lab	FITT Principle	Lab 8
10	Muscular Strength & Endurance Muscular Endurance Lab	FITT Principle	Lab 6
11	Weightlifting Muscular Strength Lab		Lab 7 Lab 8
12	Nutrition Movie Body Pump Class		
13	Nutrition Lecture Smoothie Day	Labels, Daily Plate, Sources of Nutrition	Lab 10
14	No Class - Thanksgiving No Class - Thanksgiving		
15	Putting it all Together Lab Test Review	*Turn in Journal	Lab 11
16	Final Exam		

New

NEW Sample Fitness and Wellness Course Class Schedule

Week	Topic	Canvas / Homework	Due
1	Intro Syllabus Review Tour	HW: Create PA Log	
2	Health/Wellness Lecture Climate Frisbee Pickleball	Wellness Continuum, Stages of Change HW: SMART Goal #1 HW: Lab 1	Goals Lab 1
3	Fitness Lecture Basketball	HW: Lab 2	Lab 2
4	Body Composition Lecture & Lab Sand Volleyball	BMI & Body Fat %	Lab 3
5	Cardio Endurance Lecture One Mile Walk Test	FITT Principle	Lab 4
6	Swimming Test Review & Campus Walk		
7	Hiking and Canoeing Target and Max Heart Rate, use Carroll Machines	HW: Goal Review Max & Target HR	Review
8	Mid-Term Exam Swimming		
9	Flexibility Yoga and Flexibility Lab	FITT Principle	Lab 8
10	Muscular Strength & Endurance Muscular Endurance Lab	FITT Principle	Lab 6
11	Weightlifting Muscular Strength Lab		Lab 7 Lab 8
12	Weightlifting Body Pump Class		
13	Nutrition Lecture Smoothie Day & Movie	Labels, Daily Plate, Sources of Nutrition	Lab 10
14	No Class - Thanksgiving No Class - Thanksgiving		
15	Yoga Test Review & Campus Walk	HW: Lab 11 HW: Reflection Journal	Lab 11 Journal
16	Final Exam		PA Log

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APPENDIX G

TEACHING GUIDE

TEACHING GUIDE

COLLEGIATE FITNESS & WELLNESS COURSE

By: Heather DeLangie

OVERVIEW

1. Purpose of the Dissertation Study

- Understand the influence of a fitness and wellness course on the students' physical activity motivation and behavior
- Evaluate the 7 different components of the course based on feedback from the students and course instructors

2. Dissertation Project Findings

i *Intrinsic Motivation & Self-Efficacy to Exercise Increased Pre to Post-Course.*

Pre and Post Course Comparison of Main Variables

	Descriptives	Pre-Course	Post-Course	F value
Intrinsic Motivation				
Physical Activity (Range 13-49)	<i>Mean</i> <i>SD</i>	35.98 9.33	38.62 7.84	7.71*
Self-Efficacy				
Physical Activity (Scale of 1-5)	<i>Mean</i> <i>SD</i>	2.75 .963	3.07 .823	13.31*
Intention				
Physical Activity (Scale of 1-5)	<i>Mean</i> <i>SD</i>	4.36 .967	4.25 .906	.767
MVPA METS				
Moderate & Vigorous PA (Range 0-126 METS)	<i>Mean</i> <i>SD</i>	43.80 26.99	43.03 20.19	.029
Total METS				
Mild + MVPA METS (Range 0-373 METS)	<i>Mean</i> <i>SD</i>	52.63 29.16	54.26 21.34	.10

* $p < .05$

i *Physical Activity is strongest influence on improving students' physical activity.*

Table

Student and Instructor Course Component Evaluation Means

Course Component	Student	Instructor
Physical Activity	3.71	3.78
Labs	3.47	3.22
Lectures	3.28	3.12
Canvas Information	2.89	2.89
Journaling/ SMART Goals	2.93	2.67
Physical Activity Logs	2.76	2.25
Student Workbook	2.47	2.22

*using a Likert Scale 1 "not at all" to 5 "a great deal"

3. Suggestions for the Course from Students

i *The most common suggestion for the course from students and instructors to include more activities, particularly group and structured activities.*

- “A more structured workout plan”
- “Make group games mandatory”
- “More activity if possible”
- “Doing more yoga classes”
- “More activities like hiking”
- “A more structured lifting plan”
- “Competitions with the physical activities”
- “More activities”
- “More options on activity days.”

4. Suggested Methods for adding more Physical Activity to the Course

i *Suggested Methods:*

- Provide a range of structured activities for students on “Activity Days”
- Include physical activity on Lab days
- Think outside the box for physical activity (e.g. hiking, ultimate frisbee, archery, canoeing, pickleball, sand volleyball, swimming, floor hockey).
- Combine lecture topics together and assign Canvas information as homework
- Minimize class time on areas of the course that do not have much influence on the students’ physical activity behavior including: PA logs, journaling/ SMART goals
- Make all class information as pages on Canvas rather than using a physical textbook or student workbook
- Shorten number of days spent on nutrition
- Add bursts of physical activity on short class days (such as test review days)

5. Example Current & Revised Sample Class Syllabus (Page 3 & 4)

i *The Following Changes were made from the Current to Revised Schedule*

- *Reformatted the Student Workbook and made the relevant information as pages on Canvas (rather than a separate document)*
- *Journaling/SMART Goals (n =3) & PA Log as homework*
- *Non-Fitness Labs (Lab 1: Lifestyle Evaluation & Lab 11) as homework*
- *Combined short class days (i.e. Body Composition Lecture & Lab, Syllabus & Gym Tour, Target HR Lecture & Cardio Machines, smoothie and movie)*
- *Added a variety of new structured Physical Activity day including: Swimming, Pickleball, Canoeing, Sand Volleyball, Ultimate Frisbee, and additional Yoga Class & Weightlifting Day)*
- *Added a short walk on Test Review days*

6. Number of Physical Activity Days (*still includes all Labs & Lectures)

- i** Current Schedule: 10 out of 28 days as PA days.
Revised Schedule: 18 of 28 days as PA days.

CURRENT Sample Fitness and Wellness Course Class Schedule

<u>Week</u>	<u>Topic</u>	<u>Workbook/ Canvas</u>	<u>Due</u>
1	Intro/Syllabus Review		
	Tour of McGee Center		
2	Health/Wellness Lecture	Wellness Continuum, Stages of Change	Lab 1
	Smart Goals Journal, Lab 1	SMART Goals, FITT Principle	Lab 2
3	Fitness Lecture		
	<i>Basketball</i>		
4	Body Composition	BMI & Body Fat %	
	<i>Body Composition Lab & Walk</i>		Lab 3
5	Cardio Endurance Lecture	FITT Principle	
	<i>One Mile Walk Test</i>		Lab 4
6	Journal and Meditation		
	Test Review		
7	<i>Hiking at Campus Lake</i>		
	Target and Max Heart Rate	Max & Target HR	
8	Mid-Term Exam		
	<i>Team Games</i>		
9	Flexibility	FITT Principle	
	<i>Yoga and Flexibility Lab</i>		Lab 8
10	Muscular Strength & Endurance	FITT Principle	
	<i>Muscular Endurance Lab</i>		Lab 6
11	<i>Weightlifting</i>		Lab 7
	<i>Muscular Strength Lab</i>		Lab 8
12	Nutrition Movie		
	<i>BodyPump Class</i>		
13	Nutrition Lecture	Labels, Daily Plate, Sources of Nutrition	
	Smoothie Day		Lab 10
14	No Class -Thanksgiving		
	No Class -Thanksgiving		
15	Putting it all Together Lab		Lab 11
	Test Review	*Turn in Journal	
16	Final Exam		

NEW Sample Fitness and Wellness Course Class Schedule

<u>Week</u>	<u>Topic</u>	<u>Canvas / Homework</u>	<u>Due</u>
1	Intro/Syllabus Review/ Tour	HW: Create PA Log	
	Health/Wellness Lecture	Wellness Continuum, Stages of Change	
2	<i>Ultimate Frisbee</i>	HW: SMART Goal #1	Goals
	<i>Pickleball</i>	HW: Lab 1	Lab 1
3	Fitness Lecture	HW: Lab 2	Lab 2
	<i>Basketball</i>		
4	Body Composition Lecture & Lab	BMI & Body Fat %	Lab 3
	<i>Sand Volleyball</i>		
5	Cardio Endurance Lecture	FITT Principle	
	<i>One Mile Walk Test</i>		Lab 4
6	<i>Swimming</i>		
	<i>Test Review & Campus Walk</i>		
7	<i>Hiking and Canoeing</i>	HW: Goal Review	Review
	<i>Target and Max Heart Rate, use Cardio Machines</i>	Max & Target HR	
8	Mid-Term Exam		
	<i>Swimming</i>		
9	Flexibility	FITT Principle	
	<i>Yoga and Flexibility Lab</i>		Lab 8
10	Muscular Strength & Endurance	FITT Principle	
	<i>Muscular Endurance Lab</i>		Lab 6
11	<i>Weightlifting</i>		Lab 7
	<i>Muscular Strength Lab</i>		Lab 8
12	<i>Weightlifting</i>		
	<i>BodyPump Class</i>		
13	Nutrition Lecture	Labels, Daily Plate, Sources of Nutrition	
	Smoothie Day & Movie		Lab 10
14	No Class -Thanksgiving		
	No Class -Thanksgiving		
15	<i>Yoga</i>	HW: Lab 11	Lab11
	<i>Test Review & Campus Walk</i>	HW: Reflection Journal	Journal
16	Final Exam		PA Log