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Pedaling Through Discomfort: A Feasibility Study of Faculty-Led Spin Classes and Their Impact on Student Engagement, Resilience, and Faculty-Student Relationships

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Cover Page Footnote

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Pedaling Through Discomfort: A Feasibility Study of Faculty-Led Spin Classes and Their Impact on Student Engagement, Resilience, and Faculty-Student Relationships

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This study explored the feasibility and impact of faculty-led Spin classes on college students' engagement, well-being, and connection with faculty. Offered twice weekly at 7 AM during Fall 2024, the classes aimed to promote physical activity, resilience, and faculty-student relationships. Twenty-six students attended at least one class, with a median attendance of 4.5 sessions. Post-semester surveys (88% response rate) assessed perceived exertion, interest, enjoyment, challenge, improvement, and instructor encouragement. Students reported high levels of engagement and positive challenge (RPE = 15.3; challenge = 6.4/7). Those attending 7 or more sessions reported significantly greater perceived improvement than those attending fewer sessions ($p = .01$). Qualitative responses highlighted the benefits of connecting with faculty in a non-academic setting, feelings of encouragement, and personal growth through pushing physical and mental discomfort. Common barriers to continued attendance included early class time and scheduling conflicts. Findings suggest faculty-led fitness classes can foster meaningful student-faculty connections, encourage resilience, and support student well-being. Future studies should explore broader participation, varied class formats, and validated measures of belonging and grit.

Introduction

Incorporating physical activity into college students' daily lives is important. Physical activity is beneficial for physical and psychological health as well as for academic achievement (Teuber et al., 2024). Physical activity also provides a resolution to the burnout crisis, alleviating some negative emotions and stress, thereby improving students' mental health and academic performance (Ye et al., 2024). Even though there is much evidence that physical activity can benefit students by alleviating academic stress and promoting healthier lifestyles, many students still seem to remain inactive and continue to struggle with the effects of college burnout. Santana et al. (2023) reported that 65% of undergraduate students were physically inactive, many of whom attribute their inactivity to unique challenges associated with university life (Brown et al., 2024).

Assessments like GPA and SAT/ACT scores are often used to predict student success, but resilience and grit have been shown to be more significant predictors. Scholars have suggested creating interventions to build resilience and grit in order to help students succeed (Yaure, 2021). Additionally, feeling a sense of belonging to one's college has been shown to predict better persistence, engagement, and mental health (Gopalan & Brady, 2020). Group exercise classes create an opportunity for strengthening one's sense of belonging. Moreover, these classes can become a source of affiliation, support, belonging, bonding, and identity that subsequently promote investment (Eime et al., 2013; Stevens et al., 2018; Gottschall & Hastings, 2023). Specifically, group exercise classes can be most effective when they include: (a) a collective identity, (b) a shared sense of purpose, (c) group structure, and (d) interdependence among members (Kozlowski & Ilgen, 2006; Gottschall & Hastings, 2023). One group exercise class that has risen in popularity is spin/cycling classes. A high-energy workout class led by a cycle instructor on a stationary bike incorporating movements matching pace and intensity of music. According to Statista Research, the number of participants in stationary cycling (group) in the United States was reported to be approximately 6.6 million as of 2024 (Statista Research Department, 2025). In addition to offering a vigorous exercise option, spin class also affords a safe opportunity to learn the skill of pushing through discomfort with the potential of developing resiliency and grit.

In addition to exercise, another important avenue to increasing student success has been found in the literature on higher education faculty-student relationships (FSRs). FSRs are gaining traction as crucial areas to target in pursuit of improved student development as strong FSRs are positively associated to students' motivation, engagement, achievement, retention, and well-being (Hagenauer et al., 2023). Today's college students yearn for more than information; they seek authentic, engaging, and knowledgeable interactions, with the appropriate use of humor enhancing connection and rapport between students and faculty (Hathaway & O'Shields, 2022). In a world where information is easily accessible, universities must adapt to students' desires for connection and intentionally create environments that foster regular and sufficient interaction between students and faculty (Hagenauer et al., 2023).

However, this can be challenging as college faculty are already juggling the increasing demands of research, teaching, and service requirements that can leave little room for out-of-classroom student interaction time. Unique and novel approaches should be explored to

determine effective programming that might both foster FSRs and allow students to practice and succeed in overcoming challenges. Prior research suggests that group exercise settings promote social connection, belonging, and shared purpose, all of which are associated with stronger engagement and student development (Eime et al., 2013; Stevens et al., 2018; Gopalan & Brady, 2020; Gottschall & Hastings, 2023). Additionally, physically challenging activities have been shown to support the development of resilience and grit, which are critical predictors of student success (Yaure, 2021; Ye et al., 2024). Thus, the primary purpose of this study was to determine if students would attend a faculty-led group Spin class that included them and their peers performing and successfully completing challenging workouts.

Methods

Study Design and Population

The popularity of and experiences related to faculty-led Spin classes were assessed. All classes were led by a single faculty member who was certified and experienced spin instructor to ensure consistency and instructional quality throughout the study. Classes were offered twice-a-week (Tuesdays & Thursdays) at 7 AM in the University's recreation center during the fall semester of 2024. Advertisements for the classes included fliers posted around campus and social media announcements that specified that the class was led by a faculty member. We did not assess whether participating students were previously acquainted with the faculty instructor or whether this influenced their decision to enroll. Students were invited to join at any point within the semester. Spin bikes consisted of the IC7 Indoor Cycle which utilized the WattRate® LCD+ computer display showing performance in watts and guiding intensity with Coach By Color®. Coach By Color® allows individual exercisers to set their own FTP value (continuous power threshold in watts) and creates individual-specific five colored training zones. To Coach By Color® allows the instructor to more effectively communicate and lead a group class that is tailored to each individual meaning classes were more inclusive for all fitness levels. Classes consisted of a ~5-minute warm-up followed by 30-40-minutes of "color" work and a ~5-minute cool down.

Twelve Spin bikes were available for students to utilize during classes. Attendance was recorded at each Spin class.

At the conclusion of the fall semester of 2024, an email went out to all Spin class participants (26 students) to assess experiences. The survey was administered through Qualtrics. The university's research ethics board granted approval for this study (UTC IRB#:24-142) and students consented to participate before proceeding to the online survey questions. The total response rate was 88% (23 of 26 students completed).

Survey Measures

The survey took approximately 5 minutes to complete and included questions pertaining to Spin class experiences. Participants were asked questions on rates of perceived exertion (6-20 Borg RPE

Scale), interest (1-uninteresting to 7-interesting), enjoyment, positive challenge, perceived improvement, and instructor encouragement (1-not true at all to 7-extremely true). Participants were asked one of the following questions depending upon continued attendance or dropout: “Please share why you continued coming to Spin Classes.” or “Please share why you stopped coming to Spin Classes.” Participants were also asked to respond to two open-ended questions: “Explain the benefits (if any) of interacting with a faculty member outside the classroom setting and in the fitness setting.” and “What have you learned (if anything) about pushing through discomfort?”

Data Analysis

Means and frequencies were calculated to describe student demographics, attendance, and Likert-scale questions. To assess potential differences in student attendees, participants were divided by number of sessions attended: 1-to-6 sessions (n=13) and 7+ sessions (n=10). Kolmogorov-Smirnov tests were used to assess normality of continuous data (RPE, interest, enjoyment, challenge, improvement, instructor encouragement...). Due to non-normality and small sample sizes, Mann-Whitney U tests were used to assess differences by number of sessions status (1-to-6 sessions and 7+ sessions). IBM SPSS Statistics for Windows, Version 29.0 was used for all analyses and statistical significance was set at $p < .05$. Data are reported as means and standard deviations. Regarding open-ended responses, due to small sample size and the purposes of this study, all student responses are presented.

Results

Attendance

A total of 26 students attended at least one of the 28 Spin sessions offered during Fall 2024 (11 freshmen, 6 sophomores, 5 juniors, 3 seniors, and 1 graduate student; 92% female, 92% White). The median number of classes attended was 4.5. Nine students (35%) attended only once, seven students (27%) attended 2–6 classes, seven students (27%) attended 7–11 classes, and three students (12%) attended 20 or more classes. Average class size was 8.5 students in August (71% capacity), 5.8 in September, 6.4 in October, and 4.9 in November (41% capacity). The largest class size was 10 students (three occasions) and the smallest was 2 students (one occasion). Three students who attended only one class did not complete the survey. Thus, results below reflect the 23 respondents (88% response rate).

Student Experience

Exertion, Interesting, Enjoyment, Challenge, Improvement, Encouragement Students reported an average rating of perceived exertion (RPE) of 15.3 (SD=1.6), indicating vigorous intensity. Using a 1 (not true at all) to 7 (extremely true) scale, students reported that Spin classes were interesting [6.1(1.3)], enjoyable [5.7(1.6)], a positive challenge [6.4(0.8)], and that they felt encouraged by the

instructor [6.5(0.8)]. Students also reported perceived improvement [5.9(1.2)] and feeling that they performed well compared to peers [5.0(1.5)]. When comparing those who attended 6 or fewer classes (n=13) with those who attended 7 or more classes (n = 10), no statistically significant differences were observed for RPE, interest, enjoyment, challenge, peer comparison, or instructor encouragement (all $p > .05$). However, students attending 7 or more classes reported significantly greater perceived improvement (6.6 vs. 5.4, $p = .01$).

Benefits of Interacting with a Faculty Member in the Fitness Setting Seventeen students responded to the prompt, “Explain the benefits (if any) of interacting with a faculty member outside the classroom setting and in the fitness setting.” Responses revealed two primary themes.

Relationship Development and Increased Comfort: Students emphasized that the fitness setting allowed them to interact with faculty in a more personal and authentic way. Many described getting to know the faculty member “on a personal level,” seeing “another side of the professor,” and building rapport beyond the traditional classroom dynamic. Several students noted that they felt more comfortable speaking with the faculty member afterward and appreciated forming connections that extended beyond academics. Some described the experience as fostering a stronger sense of belonging within the university community.

Support, Encouragement, and Personal Connection: Students also described feeling supported and encouraged. Responses reflected feelings of empowerment and care, with some indicating that the instructor’s presence positively influenced their well-being. The non- classroom setting was described as creating a space where faculty could “see the real you,” strengthening relational depth and mutual understanding.

Lessons Learned About Pushing Through Discomfort

Eighteen students responded to the prompt, “What have you learned (if anything) about pushing through discomfort?” Three primary themes emerged.

Mental Strength and Perseverance: Students frequently described discomfort as both a physical and mental challenge. Several characterized it as a “mental battle” or “brain battle,” emphasizing the cognitive component of endurance.

Self-Efficacy and Personal Discovery: Many students reported learning that they were stronger and more capable than previously believed. Statements reflected increased confidence, with participants noting they were “stronger than I think I am” and capable of more than anticipated.

Growth Through Challenge: Students described pushing through discomfort as leading to accomplishment, gratification, and personal growth. Responses indicated that enduring difficulty contributed to resilience and reinforced the value of perseverance. A thematic summary with representative quotations is presented in Table 1.

Reasons for Continuing or Discontinuing Attendance

Ten students described reasons for continuing attendance. Most responses (80%) included multiple reasons. Enjoyment was most frequently cited (e.g., “It was a lot of fun,” “I enjoyed it”). Exercise benefits were also common (“I enjoyed the workout I got from it”), as were post-workout outcomes such as accomplishment and improved mood. Several students referenced encouragement and group atmosphere, including emotional support and social connection. Twelve students described reasons for discontinuing attendance. The most common barrier was the early class time (7 AM). Other reasons included academic scheduling conflicts, competing responsibilities, general busyness, preference for other types of exercise, and commuting distance.

Discussion and Implications

The purpose of this study was to explore whether students would attend faculty-led Spin classes and to examine their experiences within this novel context. Twenty-six students attended at least one session, with nearly 40% attending seven or more classes. Students reported high levels of enjoyment, positive challenge, and instructor encouragement. Those who attended more frequently perceived greater improvement, suggesting sustained engagement may enhance perceived growth.

Importantly, findings extend beyond exercise participation and speak directly to faculty-student relationships (FSRs). Students described meaningful relational benefits from interacting with faculty in a non- classroom setting. Consistent with literature highlighting the importance of FSRs for student engagement, motivation, and well-being (Hagenauer et al., 2023), participants reported increased comfort, rapport, and connection. The fitness environment appeared to reduce hierarchical barriers and facilitate authentic interaction, aligning with research suggesting that informal, shared experiences promote belonging and relational depth (Gopalan & Brady, 2020). Additionally, students’ reflections on pushing through discomfort suggest that group fitness may provide an experiential context for developing resilience and grit, constructs associated with academic persistence and success (Yaure, 2021). Students described discomfort as both physical and psychological, reinforcing the idea that perseverance involves cognitive and emotional regulation in addition to physical endurance. The repeated opportunity to confront and overcome challenge may serve as a practical training ground for resilience development.

From a programming standpoint, this model represents a potentially feasible and scalable intervention. The class met twice weekly and required limited additional infrastructure beyond existing recreation facilities. However, attendance barriers, particularly early morning scheduling, should be considered in future implementations. Offering sessions at alternative times may increase participation and diversity of attendees.

Several limitations should be acknowledged. The sample size was small and demographically homogeneous, limiting generalizability. Self-selection bias may have influenced who chose to attend and respond. Additionally, outcomes such as belonging, resilience, and grit were not assessed using validated pre-post measures. Future research should incorporate longitudinal designs, larger and more diverse samples, varied class formats, and validated instruments to more rigorously examine changes in belonging, resilience, and faculty-student relationship quality.

Despite these limitations, these findings provide preliminary support for faculty-led group fitness as a dual-purpose intervention, simultaneously fostering meaningful faculty-student connections and providing structured opportunities for students to practice overcoming discomfort. Even small-scale initiatives may generate ripple effects that extend beyond physical fitness, contributing to relational development, personal growth, and potentially academic success.

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Table 1. *Thematic Summary of Student Perspectives on Faculty Interaction and Pushing Through Discomfort*

Domain	Theme	Description	Representative Quotes
Faculty Interaction in Fitness Setting	Relationship Development & Rapport	Students described building more personal, authentic connections with faculty outside the classroom.	“It creates new avenues for connection between students and the faculty member that varies from typical dynamic.” “I don’t feel awkward speaking to her anymore.” “Getting to know the faculty on a personal level.” “I felt extremely empowered after these classes.”
	Support, Encouragement, & Belonging	Students reported feeling supported, empowered, and more comfortable within the university environment.	“It allows you to make more connections and have a relationship with an adult that you might not have had otherwise.” “They can see the real you.” “It’s not just a body thing, it’s a brain battle as well.” “You have to push through discomfort to make any significant progress.”
Pushing Through Discomfort	Mental Strength & Perseverance	Students described discomfort as both a physical and psychological challenge requiring persistence.	“I learned that I’m stronger than I think I am.” “I’m capable of a lot more than I realize once I’ve pushed through the initial discomfort.”
	Self-Efficacy & Personal Discovery	Students reported discovering increased capability and confidence.	

Table 1. *Thematic Summary of Student Perspectives on Faculty Interaction and Pushing Through Discomfort*

Domain	Theme	Description	Representative Quotes
	Growth Through Challenge	Students described accomplishment, resilience, and personal growth as outcomes of enduring discomfort.	“Discomfort is often just a mental barrier we have to push through.” “I can do anything for 45 minutes and discomfort is a part of hard things.

