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Student Overinvolvement is Correlated with Lower Levels of Academic Engagement

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Article History:

Received: 10 November 2024; Accepted: 27 November 2024; Published: 30 November 2024

Abstract Colleges want students to be involved in campus activities and to be engaged with campus culture. These concepts, while sharing overlap, have important differences. Student involvement refers primarily to the behaviors outside of class, such as participation in clubs or honor societies. Student engagement is a psychological investment with cognitive and emotional components. While low or moderate levels of involvement may boost engagement, overinvolvement may harm engagement. Data was collected from participants at a public university and at a private university with a religious affiliation (N=113). Students completed the Overinvolvement Scale (OIS) and the Higher Education Student Engagement Scale (HESES). Results showed internal validity for both the OIS and HESES. Feelings of overinvolvement were correlated with lower levels of academic engagement. Unexpected sample differences suggest that students at private religious universities seem to express higher engagement levels.

Keywords Student Involvement, Student Engagement, Overinvolvement

Volume 14, 2024

Publisher: The Brooklyn Research and Publishing Institute, 442 Lorimer St, Brooklyn, NY 11206, United States.

DOI: <https://doi.org/10.30845/ijhss.v14p37>

Reviewers: Opted for Confidentiality

Citation: Berry, E., Marquina, S. M., and Walker, W. R. (2024). Student Overinvolvement is Correlated with Lower Levels of Academic Engagement. *International Journal of Humanities and Social Science*, 14, 418-428. <https://doi.org/10.30845/ijhss.v14p37>

1. Student Overinvolvement is Correlated with Lower Levels of Academic Engagement

This paper will begin by examining 2 key factors that are widely thought to impact a student's experience in higher education: Student involvement and student engagement. These factors, while important for the K-12 educational experience, become markedly more important as students transition to college. High levels of involvement are generally considered necessary in higher education, as successful students must actively choose to attend class, move forward in their curriculum, and participate in campus activities. Student engagement is a qualitatively different experience than involvement. Student engagement is often evident in how psychologically invested they are in their coursework and how much they identify with the collegiate experience. Hence, the optimal strategy for students to achieve engagement may not simply be more involvement. An overinvolved student who struggles with a variety of class assignments and extracurricular activities may find themselves more stressed than engaged. This paper will consider the phenomenon of over-involvement and its role in preventing some students from achieving deep levels of engagement. Finally, this paper will assess the factors of involvement, engagement, and overinvolvement using samples from 2 undergraduate universities in the United States of America.

1.1 Student Involvement

Alexander Astin (1984) defines student involvement as the amount of physical and psychological energy that a student devotes to academic experience. The academic experience often focuses exclusively on the classroom but should rightly include participation in campus activities, athletics, and professional development events. Involvement can be extremely focused, as in a student who is heavily involved in a volunteer blood drive event. Involvement can also be quite diffused, as in a student who doesn't feel like they quite fit into the campus culture. What a student does in college is important and so too is how they feel and whether they form a strong sense of belonging to the institution and its community. More recently, Trolan (2019) suggested that an involved student dedicates significant energy to studying, being on campus, participating in student organizations, and interacting with peers and faculty.

Student involvement has a significant behavioral component. Many aspects of student involvement can be directly observed (and measured) in the classroom. This may include how often a student attends class, how often they speak up during discussions, how much time they spend working on assignments and exam preparation, and whether they buy the course textbook. There are other behaviors that can be observed outside the classroom. These behaviors may include how many organizations a student participates in, how many campus events they attend, and how much time they spend on campus outside of normal class time.

Of course, these actions can be influenced by factors other than involvement. A student with unreliable transportation may miss more classes or a particularly shy student might hesitate before joining a student club. Still, these are the kinds of behaviors that are commonly associated with students who are judged to be involved.

Student involvement also has a significant psychological component, which is thought to be reflected in their thoughts, beliefs, and emotional responses. In the classroom, this could mean several things. Involved students should think about their course content, challenge their own beliefs when confronted with evidence presented by the instructor, and learn to balance their emotional reaction to subject matter with their need to understand it. Outside the classroom, involvement is more ephemeral, but perhaps more important. Students should begin to invest in the idea of college, which means seeing themselves as a college student (and eventually, a graduate), and feeling a personal connection to their institution and its community.

1.2 Benefits of Involvement

Previous research has confirmed the suspicion that involvement is beneficial to undergraduate students. These benefits include personal development, academic success, and satisfaction with "the college experience." In over more than 2 decades of work, Astin argued that involvement in undergraduate can increase retention rates, graduation rates, and even post-graduation success (Astin, 1968, 1975, 1977, 1993, 1996). According to his research, those who participate in clubs and organizations show an increase in leadership and interpersonal skills that they can apply post-college. In his later works, he argues that involvement with faculty at universities can lead to higher satisfaction with the curriculum. In more recent research, Alfano and Eduljee (2013) found that students who are more engaged in campus events report a higher sense of community in both their university and their community. Students who were more involved also reported enhanced intellectual development and rated their educational experience more positively than their uninvolved peers.

Additionally, students who are more involved have self-reported greater development in moving towards autonomy, independence, and finding purpose (Foubert & Grainger, 2006). Moreover, it should be noted that student involvement has practical benefits for students wanting to boost their grades. Zacherman and Foubert (2014) found that students who participated in up to 10 hours of campus activities per week reported improvements in their academic performance as measured by their overall grade point average. Overall, these findings suggest that involvement in extracurriculars is not only beneficial to college satisfaction but also professional growth.

The research on involvement has tended to focus much more on student behavior rather than on their beliefs and their emotions. As the reader will later see, the measures of involvement in the current study reflect this trend.

1.3 Student Engagement

Student engagement is a concept that is often seen as being synonymous with student involvement. But there are important differences in these concepts, as evidenced by how it is often conceptualized and subsequently assessed. Trowler (2010) defined student engagement as “the interaction between the time, effort, and other relevant resources invested by student and institution intended to optimize the learning experience.” Engagement can be conceptualized as having 3 essential types - Behavioral Engagement, Emotional Engagement, and Cognitive Engagement (Trowler, 2010). Behavioral engagement refers to students who attend class and participate in classroom and campus activities. Emotional engagement refers to students that have affective reactions to the institution and its community such as interest, enjoyment, and sense of belonging. Finally, cognitive engagement refers to students that are actively invested in learning and in the subject matter of their coursework. Trower argues that individuals vary across these types of engagement, with few students achieving peak engagement in all 3 types.

1.4 Benefits of Student Engagement

Like involvement, engagement includes many benefits for undergraduate students. Schaufeli, Martínez, Pinto, Salanova, and Bakker (2002) found that engagement was positively correlated with academic performance. This finding was repeated in 3 different samples, each from different countries (The Netherlands, Portugal, and Spain). Engagement has also been found to be strongly associated with resilience, perseverance, and the personality construct of Grit. According to Calleja-Núñez et al. (2023), perseverance of effort was positively correlated with emotional and academic engagement, suggesting that those with higher levels of engagement often demonstrate more commitment to their long-term goals of course completion and eventual graduation. Singh, James, Paul, and Bolar (2022) studied 693 undergraduates by assessing their levels of engagement, their various motivations for attending college, and their ability to progress through the curriculum. Using structural equation modeling, they concluded that the prior motivations for a student to enter college were the best predictors of overall student engagement and achievement.

The research on student engagement tends to favor measures that are more based in psychological constructs such as motivations, emotional responses, and cognitive beliefs. The measures of involvement used in the current study reflect this tendency.

1.5 Student Burnout in Higher Education

Undergraduate student burnout is a serious issue affecting college students. This phenomenon is characterized by emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment. Factors contributing to burnout include academic pressure, financial stress, social isolation, and lack of work-life balance. Schaufeli et al. (2002) found that burnout in undergraduate students was best predicted by high levels of academic work and the pressure to perform. Credé, Roch, and Kieszczynka (2010) went further by examining the impacts of standardized admissions tests (e.g., the SAT), high school GPA, study habits, study skills, class attendance, and the personality characteristics of conscientiousness and motivation on college students' grades and the likelihood of experiencing burnout. Study skills, study habits, and personality traits did not predict grades or burnout. They found that the single best predictor of poor grades and student burnout was poor class attendance. Despite this finding, the data also revealed that mandatory attendance policies only had a marginally significant impact on boosting grades and reducing the likelihood of burnout. These results suggest that deficits in student engagement can be ameliorated with increased activity, but only up to a point.

1.6 Student Overinvolvement

While involvement is considered widely beneficial, there comes a point where being involved becomes too much – overinvolvement. Previous research has attempted to quantify overinvolvement among college students (Banister, Lynner, Finch, & Detry, 2023; Koehler, 2014; Couch, 2016; Robbins, 2022). The findings have suggested that being over-involved may increase stress, burnout, and decreased occupational functioning. Students who work full-time off-campus experience often feel less connected to college and often evidence an increased dropout rate because the significant time spent on work limits their capacity to be involved in campus life (Astin, 1999). Measures of burnout tend to come closest to assessing overinvolvement, but these measures tend to characterize the phenomenon as a psychological disfunction, often emphasizing its more dramatic consequences (e.g., Schaufeli, Desart & De Witte, 2020).

The overinvolvement scale (OIS) was developed to assess the experience of sub-burnout stress that college students associate with high levels of involvement in collegiate activities (Banister, Lynner, Finch, & Dentry, 2023). Extracurricular activities might include participating in athletics, student clubs, honors societies, or student government. The resulting stress might be experienced in how students feel their activities impact their academic, social life, or their overall mental and physical health. The researchers collected data from 305 undergraduate students using items developed to assess overinvolvement. Additional surveys assessed personality traits, student burnout, and student engagement. Confirmatory analyses were conducted to identify items most strongly linked to overinvolvement. Table 1 presents the resulting 13-item OIS. Items 1-4 examine the impact of overinvolvement on academics. Items 5-9 examine the impact of overinvolvement on social life. Items 10-13 examine the impact of overinvolvement on mental and physical health.

2. The Current Study

The current study was conducted to determine the relationship between overinvolvement and engagement in college students. It was predicted that overinvolvement would be negatively related to engagement, particularly for academic engagement. The study employed samples at 2 universities. No prior hypotheses were made concerning potential differences between samples.

2.1 Method

2.1.1 Participants

Sample 1. A total of 83 undergraduates at Colorado State University-Pueblo participated in the study. Students were recruited from lower-level psychology courses through the SONA system. Participants consisted of 63 women, 19 men, and one nonbinary individual. Participants self-identified their ethnicity with White (n=45), Hispanic (n=17), Black (n=4), Biracial (n=12), Indigenous (n=1), Asian (n=1), and those who declined to answer (n=3). Participants' ages ranged from 18 to 50, with a median age of 20 and a mean of 21.5. Class rank was also collected with First years (n=28), Second years (n=12), Third years (n=22), Fourth years (n=19), and non-degree-seeking (n=2). Each participant read and signed an informed consent form before participation. Data was collected in small groups of 1-5 at different times across the Fall and Spring semesters of 2023-2024. The study design complied with the university's Institutional Review Board.

Sample 2. In the second sample, 30 undergraduate students from Christian Brothers University participated in the study. Students were recruited from upper division psychology courses. The sample contained 21 women, 8 men, and 1 nonbinary individual. Participants in this sample were also asked to identify their biological sex. Self-identified ethnicity consisted of White (n=11), Hispanic (n=9), Black (n=7), Middle Eastern (n=1), Asian (n=1), and one who declined to answer (n=1). Participants spanned aged 18- 24, with the median age 21 and mean 20.9. Class rank was also recorded with First years (n=3), Second years (n=6), Third years (n=11), and Fourth years (n=9). Each participant read and signed an informed consent form before participation. Data was collected in groups of 5-10 during the Spring 2024 semester. The study design complied with the university's Institutional Review Board.

2.1.2 Materials

Over Involvement Scale. Participants completed the Over Involvement Scale (OIS). The OIS is a 13-item questionnaire designed to assess stress levels associated with extracurricular involvement on the academic, social, and health dimensions of their college experience (Banister et al, 2023). The questionnaire is measured on a 5-point Likert scale

from 1 (never) to 5(always). The range of scores on the OIS varies from 13-65, with higher scores indicating higher levels of overinvolvement.

Higher Education Student Engagement Scale. The Higher Education Student Engagement Scale (HESES) is a 28-item questionnaire that measured academic engagement in university students (Zhoc et al, 2019). The HESES measures 5 levels of engagement, academic engagement, cognitive engagement, social engagement, affective engagement, and beyond class engagement. Each category is scored individually according to the following ranges of scores: academic engagement 4-10, cognitive engagement 5-25, social engagement 3-15, affective engagement 4-20, and beyond class engagement 4-20. Higher scores indicate higher levels of engagement.

2.1.3 Procedure

Participants were first given an informed consent form describing the study. They were assigned a demographics form, recording class rank, full time status, in person status, extracurricular involvement international status, age, and gender. Participants were then administered three assessments, the overinvolvement scale, the work and well-being scale, and the higher education student engagement scale. After their responses were collected, participants were debriefed and dismissed from the study.

3. Results

There were 3 primary sets of Pearson product moment correlations conducted on these data. The first set of analyses were conducted to assess the internal validity of the OIS by examining the relationships between its 3 dimensions: Academic, Social, and Health. The second set of analyses were conducted to assess the internal validity of the modified HESES by examining the relationships between its 5 dimensions of engagement: Academic, Cognitive, Social, Affective, and Beyond Class. The third set of analyses were conducted to determine whether there were any relationships between the subscales of the OIS and the subscales of the HESES. Additionally, correlations between the number of extracurricular activities engaged in by participants and the subscales of the OIS and HESES were examined.

3.1.1 Correlations Between the Subscales of the OIS

All the subscales of the OIS were positively correlated. The academic and social dimensions were positively correlated, $r(112) = 0.468, p < .001$. The academic and health dimensions were positively correlated, $r(112) = 0.459, p < .001$. The social and health dimensions were positively correlated, $r(112) = 0.691, p < .001$.

3.1.2 Correlations Between the Subscales of the HESES

Most of the subscales of the HESES were positively correlated. Academic engagement was positively correlated with cognitive engagement, $r(112) = 0.352, p < .001$, and beyond class engagement, $r(112) = 0.258, p < .001$. Cognitive engagement was positively correlated with affective engagement, $r(112) = 0.295, p < .001$. Social engagement was positively correlated with beyond class engagement, $r(112) = 0.438, p < .001$, and with affective engagement, $r(112) = 0.234, p < .01$. Affective engagement was positively correlated with beyond class engagement, $r(112) = 0.609, p < .001$. However, some of the expected correlations were not evidenced – Academic engagement was not correlated with social or affective engagement while cognitive engagement was not correlated with social engagement or beyond class engagement.

3.1.3 Correlations Between the Subscales of the OIS and the HESES.

A series of correlations were conducted between the 3 subscales of the OIS (Academic, Social, Health) and the 5 subscales of the HESES (Academic, Cognitive, Social, Affective, Beyond Class). Most of the correlations resulted in non-significant outcomes. There were only 2 significant correlations between the subscales of the OIS and the HESES. There was a significant positive correlation between Social Overinvolvement and Beyond Class Engagement, $r(112) = 0.360, p < .001$. Figure 1 presents the scatterplot for Social Overinvolvement and Beyond Class Engagement with trendline and standard errors. There was also a significant negative correlation between Academic Overinvolvement and Academic Engagement, $r(112) = -0.325, p < .001$. Figure 2 presents the scatterplot for Academic Overinvolvement and Academic Engagement with trendline and standard errors.

3.1.4 Correlations Involving Extracurricular Activities

The number of extracurricular activities engaged in by students were correlated with their subscales on the OIS and HESES. Two significant results were found. First, there was a positive correlation between extracurricular activities and Social Overinvolvement, $r(112) = 0.332, p < .001$. Second, there was a positive correlation between extracurricular activities and Beyond Class Engagement, $r(112) = 0.485, p < .001$.

3.1.5 Assessing Differences Between Samples

The samples were different in 2 important ways. First, sample 1 was substantially larger than sample 2. Second, sample 1 was from a small public university unaffiliated with religion while sample 2 was from a small private Catholic university. An attempt to match participants by gender and age was made to compare the samples more fairly, however because there was significant overlap in the characteristics of the samples, this resulted in a more balanced but still unequal dataset. There were 36 participants taken from sample 1 and all 30 participants were retained from sample 2. A series of t-tests were conducted to assess the potential difference between the samples across the subscales of the OIS, the HESES, and the number of extracurricular activities engaged in by students.

There were no differences between samples for any of the subscales of the OIS (largest t-value $t = 1.06$, n.s.). That was not the case for the HESES. The results show that sample 2 reported higher levels of cognitive engagement, $t(65) = 2.54, p < .014$, and higher levels of social engagement, $t(65) = 2.32, p < .024$, than sample 1. Additionally, there were marginal effects observed showing the same pattern of higher engagement for sample 2 for academic engagement, $t(65) = 1.712, p < .092$, and beyond class engagement, $t(65) = 1.77, p < .081$. There was no difference between samples for affective engagement, $t(65) = 0.18$, n.s. An inspection of the means shows that the differences in engagement between samples were largely driven by females in sample 2 (CBU), who scored higher across all measures of engagement than other participant groups. For extracurricular activities, participants in sample 2 reported significantly more activities than participants in sample 1, $t(65) = 2.751, p < .009$. Table 2 presents the mean OIS scores (Overinvolvement), HESES scores (Engagement), and extracurricular activities scores for participants in sample 1 (CSU-P) and sample 2 (CBU).

4. Discussion

4.1 Internal Validity

Collecting data for this study was a way to try to find internal validity for the over-involvement scale (OIS). The OIS was developed very recently (Banister et al, 2023), so it is important to determine whether the subscales are highly correlated with each other. Findings did support the internal validity of the overinvolvement scale. There were positive correlations between every factor in the overinvolvement scale including academic and social, academic and health, and social and health. This supports the validity of the over-involvement scale and shows that as academic stress goes up social stress goes up as well. This implies that the over-improvement scale may be an assessment that can collect data on over-involvement. This also shows there may be a connection between each factor showing that stress in one place leads to stress in another.

The higher education student engagement scale (HESES) was also internally assessed between five dimensions; academic, cognitive, social, affective, and beyond-class engagement. Data showed that there was a correlation between most categories of the scale. Academic engagement was positively correlated with cognitive and beyond-class engagement, suggesting that the more engaged you are academically the more you think about the things you're involved in and the more you do outside of basic class. Data also showed a positive correlation between cognitive and affective engagement, showing that the more you think about engagement the more you are likely to do things outside of class. Internal validity was not found in academic, social, and affective engagement, as in this study there was no positive or negative correlation. These findings show that the HESES has some internal validity. This suggests that if we get people more engaged academically, emotionally, cognitively, and socially, we can increase engagement all around.

4.2 Overinvolvement and Engagement

There was a significant negative correlation between academic overinvolvement and academic engagement. When students feel that they are being overwhelmed with their extracurricular activities, they feel less engaged with their academics. This is an important finding that professors and university administrators should consider more closely

as they try to boost college student engagement. Increasing student involvement in campus activities may be an attractive way to showcase an institution's ability to serve students, but there are real limits to what involvement can do to boost engagement. Overinvolvement may make students feel like they are simply engaging in busy work (Murray, 2010).

While most of the other correlations were insignificant, there was a significant positive relationship between the social dimension of overinvolvement and beyond-class engagement. There was also a positive correlation between the number of extracurricular activities students reported and their feelings of social overinvolvement. Taken together, these findings echo the findings regarding academic overinvolvement and engagement. That is, students who engage in a high number of student activities may not always be building the strong social bonds often associated with such activities. Instead, they may be experiencing social stress, which could result in feelings of loneliness, isolation, and burnout.

4.3 Sample Differences

An unexpected set of findings was found in the sample differences. Sample 1 was collected at a small public university in the Southwest. Sample 2 was collected at a small private Catholic University in the Southeast. Students in Sample 2 reported higher levels of engagement across 4 of the 5 measures, with affective engagement being the only measure not approaching statistical significance. In hindsight, this difference should have been predicted. Private universities are typically perceived as being higher in status than public universities. Moreover, universities with religious affiliations have a stronger core identity with which students can connect. Public universities, on the other hand, are more eclectic and often have a more diverse set of traits, making it harder to form a deep connection to the institution. Put more succinctly, sample 2 came from an institution more likely to have brand loyalty, hence the higher levels of engagement.

4.4 Improvements and Future Research

The present study represents the first published study using the Overinvolvement Scale of which we are aware. This scale should be further refined and validated across a variety of university samples, at public and private institutions, and then in other cultures. The current research did not find any gender, ethnic, or age differences in any of the subscales of overinvolvement. This result was surprising, as there is ample research showing that marginalized groups (e.g., students of color, non-traditional students) often experience higher rates of burnout than traditional students. Hence, the findings presented here should be considered the first few steps on a much longer journey.

4.5 How can universities try and get students involved and engaged?

Since the COVID-19, college students are experiencing loneliness, disengagement, and burnout at rates that are untenable for their mental health and well-being, not to mention the financial health of small universities dependent on student retention (Abraham et al., 2024; Pham & Chau, 2024). Many student samples reveal high levels of emotional exhaustion (55%), poor academic efficacy (30%), and cynicism (30%) (Roseles-Ricardo et al, 2021). We offer 2 suggestions. First, universities should be aware of the complicated relationship between student involvement and student engagement. It is not enough that students be given opportunities to get involved in student organizations, they must be shown the importance of these activities to both their personal and professional development. This is accomplished by reducing the perceived 'busy work' associated with these organizations and emphasizing opportunities and experiences that cannot be replicated outside of the college environment. These opportunities should emphasize what Haidt (2024) calls 'antifragility.' Antifragility is a concept best understood in contrast to 2 related terms, resilience and robustness. A resilient student can recover from setbacks or losses. A robust student can resist these negative occurrences. An antifragile student copes with adversity by getting stronger, smarter, and more capable. These students are more than resistant to the circumstances that cause burnout, they thrive in them. Colleges should give students chances to fail and teach them how to learn from those failures (Haidt & Lukianoff, 2019).

Second, universities would also be wise to bring students back to campus from the hinterlands of online education. Face-to-face classes in college offer a multitude of benefits that enhance the overall educational experience. They foster direct interaction between students and instructors, allowing for immediate feedback, clarification of concepts, and deeper engagement with the material. Students who take face to face classes make friends with their peers and find mentors among the faculty. This personalized environment promotes collaborative learning and the

development of critical thinking skills, as students can easily participate in discussions, share diverse perspectives, and build relationships with peers (Alfano & Eduljee, 2013; Astin, 1993). Additionally, the structured setting of in-person classes encourages discipline and accountability, while providing opportunities for networking and building a sense of community within the campus (Foubert & Grainger, 2006; Trolan, 2019).

By taking these suggestions to heart, colleges can begin to regrow the student engagement that has faltered in recent years. Institutions can offer authentic experiences, rather than virtual ones, such as mentorships, internships, and extracurricular activities that expose students to new perspectives and challenges. These experiences can foster the skills and attitudes of antifragility – courage, flexibility, growth, and strength.

Acknowledgments: We would like to thank Alyssa Banister, Brittany Lynner, Hannah Finch, and Olivia Detry for developing the Overinvolvement Scale. We would like to thank Dr. Rodney J. Vogl at Christian Brothers University for data collection (sample 2). Charlotte Kneuper provided help identifying sources in the reference section and reviewing drafts of this manuscript. Finally, we wanted to acknowledge the Colorado State University-Pueblo Psychology Department for its continued support.

Conflict of Interest: Not declared.

Ethical Approval: Not applicable.

Funding: None.

References

- Abraham, A., Chaabna, K., Sheikh, J.I. et al. (2024) Burnout increased among university students during the COVID-19 pandemic: A systematic review and meta-analysis. *Scientific Reports*, 14, 2569.
<https://doi.org/10.1038/s41598-024-52923-6>
- Alfano, H. J., & Eduljee, N. B. (2013). Differences in work, levels of involvement, and academic performance between residential and commuter students. *College Student Journal*, 47(2), 334–342.
- Astin, A. W. (1968). *The college environment*. Washington, DC: American Council on Education.
- Astin, A. W. (1975). *Preventing students from dropping out*. San Francisco: Jossey-Bass.
- Astin, A. W. (1977). *Four critical years*. San Francisco: Jossey-Bass.
- Astin, A. W. (1984). Student involvement: A development theory for higher education. *Journal of College Student Development*, 40, 518-529.
- Astin, A. W. (1993). *What matters in college? Four critical years revisited*. San Francisco: Jossey-Bass.
- Astin, A. W. (1996). Involvement in learning revisited: Lessons we have learned. *Journal of College Student Development*, 37(2), 123-133.
- Banister, A. Lynner, B., Finch, H., & Dentry, O. (2023). When does involvement become too much? A new scale to measure undergraduate student overinvolvement. Paper presented at the annual meeting of the Rocky Mountain Psychological Association. Albuquerque, NM.
- Couch, M. M. (2016). A phenomenological study of over-involvement in undergraduate students [Doctoral dissertation, Ohio State University]. OhioL INK Electronic Theses and Dissertations Center.
- Calleja-Núñez, J.J., Baños, R., Espinoza-Gutiérrez, R. & Granero-Gallegos, A. (2023). Predictive effect of grit personality on academic engagement among undergraduate physical education students: The mediating role of resilience. *Journal of Sport Psychology*, 32(4), 254–266.
- Credé, M., Roch, S. G., & Kieszczynka, U.M. (2010). Class attendance in college: A meta-analytic review of the relationship of class attendance with grades and student characteristics. *Review of Educational Research*, 80(2), 272–295.
- Foubert, J. D., & Grainger, L. U. (2006). Effects of involvement in clubs and organizations on the psychosocial development of first year and senior college students. *NASPA Journal*, 43(1), 166-182.

- Haidt, J. (2024). *The anxious generation: how the great rewiring of childhood is causing an epidemic of mental illness*. New York: Penguin Books.
- Haidt, J., & Lukianoff, G. (2019). *The coddling of the American mind*. New York: Penguin Books.
- Koehler, J. H. (2014). Overwhelmed and under pressure: The influence of extracurricular over-involvement on academic success and student-faculty relationships (Order No. 30265309). ProQuest Dissertations & Theses Global. (2779137554).
- Murray, J. L. (2010). When involvement becomes “busyness.” *About Campus*, 15(5), 9- 16.
- Pham, V. B., & Chau, T. H. H. (2024). Student engagement in the context of post-Covid: A case of higher education institutions. *International Journal of Instruction*, 17(2), 321–334.
- Robbins, S. (2022). A burning issue: A quantitative correlation study on students’ overinvolvement in cocurricular activities contributing to burnout. Master of Arts in Higher Education (MAHE) Theses. 199.
- Rosales-Ricardo, Y., Rizzo-Chunga, F., Mocha-Bonilla, J., & Ferreira, J. P. (2021). Prevalence of burnout syndrome in university students: A systematic review. *Salud Mental*, 44(2), 91–102. doi.org/10.17711/SM.0185-3325.2021.013
- Schaufeli W. B, Desart S., & De Witte, H. (2020) Burnout Assessment Tool (BAT)—Development, validity, and reliability. *International Journal of Environmental Research and Public Health*, 17(24):9495. doi.org/10.3390/ijerph17249495
- Schaufeli, W. B., Martínez, I. M., Pinto, A. M., Salanova, M., & Bakker, A. B. (2002). Burnout and engagement in university students: A cross-national study. *Journal of Cross-Cultural Psychology*, 33(5), 464-481. doi.org/10.1177/0022022102033005003
- Singh, M., James, P. S., Paul, H., & Bolar, K. (2022). Impact of cognitive-behavioral motivation on student engagement. *Heliyon*, 8(7), e09843. doi.org/10.1016/j.heliyon.2022.e09843
- Trolan, T. (2019). Predicting student involvement in the first year of college: The influence of students’ precollege professional and career attitudes. *Journal of College Student Development*, 60(1), 120–127. doi.org/10.1353/csd.2019.0009
- Trowler, V. (2010). *Student engagement literature review*. Higher Education Academy.
- Zacherman, A., & Foubert, J. (2014). The relationship between engagement in cocurricular activities and academic performance: Exploring gender differences. *Journal of Student Affairs Research and Practice*, 51(2), 157-169.
- Zhoc, K. C. H., Webster, B. J., King, R. B., Li, J. C. H., & Chung, T. S. H. (2019). Higher Education Student Engagement Scale (HESES): Development and Psychometric Evidence. *Research in Higher Education*, 60(2), 219–244.

Appendix:

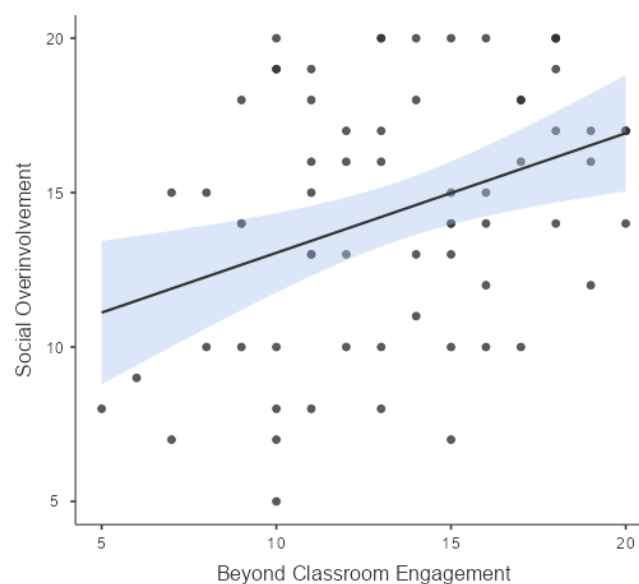


Figure 1. Scatter plot for Social Overinvolvement and Beyond Class Engagement with trendline and standard errors.

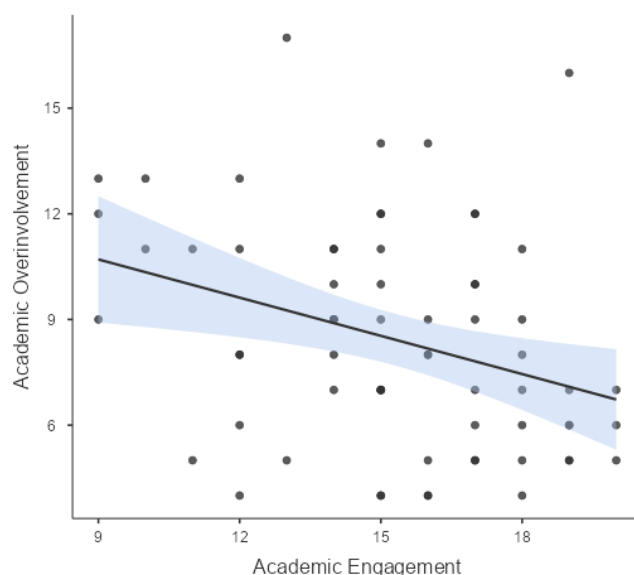


Figure 2. Scatterplot for Academic Overinvolvement scores and Academic Engagement scores with trendline and standard errors.

Table 1. The 13-item Overinvolvement Scale (OIS). Items 1-4 assess the impact of overinvolvement on academics. Items 5-9 assess the impact of overinvolvement on social life. Items 10-13 assess the impact of overinvolvement on mental and physical health.

Academic Overinvolvement Items

1. I struggle to achieve the grades I want because of my extracurricular activities.
2. I miss class because of my extracurricular activities
3. I miss academic deadlines because of my extracurricular activities.
4. I prioritize my academic activities over my coursework

Social Overinvolvement Items

5. My extracurricular activities keep me from spending time with family.
6. I have less free time because of my extracurricular activities.
7. I have trouble maintaining friendships as a result of my extracurricular activities.
8. I turn down social activities in order to fulfill my extracurricular obligations.
9. I wish I were less busy

Health Overinvolvement Items

10. I skip eating a meal as a result of my extracurricular activities.
11. I get less sleep as a result of my extracurricular activities.
12. I have difficulty engaging in self-care due to my extracurricular activities.
13. I prioritize my extracurricular activities over my physical health.

Table 2. The mean OIS scores (Overinvolvement), HSES scores (Engagement), and Number of Extracurricular Activities for Sample 1 (CSU-P) and Sample 2 (CBU). Significant Effects Designated by an Asterisk (*). Marginal Effects Designated by a Cross (†).

	Academic Overinvolvement		Social Overinvolvement		Health Impact of Overinvolvement
CBU	8.10		14.2		10.7
CSU-P	8.68		14.7		11.7
	Academic Engagement†	Cognitive Engagement*	Social Engagement*	Beyond Classroom Engagement†	Affective Engagement
CBU	16.0	17.5	9.41	14.2	13.8
CSU-P	14.9	15.2	7.92	12.9	13.7
			Number of Extracurricular Activities*		
CBU			3.29		
CSU-P			1.89		

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