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The Influence of Peer Mentorship on Undergraduate Learning Perspectives and Academic Environment

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ABSTRACT: In higher education, peer mentorship is an important way to support students, particularly in an undergraduate setting; students' learning outcomes are influenced by their learning adjustment, their level of engagement with the institution, and their social integration and familiarity with the learning practices of the institution. The present study aims to explore how structured peer mentorship affects learning perspectives, academic engagement, perceived academic environment and academic performance among undergraduate students. The study was comparative quantitative research involving constructed analytical sample with 240 subjects, half of which were peer-mentored and the other half were non-mentored undergraduate students. Learning perspectives, academic environment and engagement, and academic performance (represented by grade point average) were measured using five-point measurement scales. Perspective scores were measured pre and post the intervention for each group and compared within and between groups. Independent-samples statistical tests and standardized effect sizes were used to evaluate the differences between the peer-mentored and control groups.

The results of the analysis found that the learning perspectives of learners who are provided with peer mentoring are quite good. The mean score for the learning perspective on the post-intervention for the peer-mentored students was 3.66 while the mean score for the peer-mentored students was 3.25. There were large mean differences between the two groups (Cohen's $d = 1.15$), and the differences were statistically significant ($t = 8.914$, $p < 0.001$) for the peer-mentored group (mean change = 0.64) and for the control group (mean change = 0.20). The students who participated in peer mentorship also had a statistically significant increase in their scores on academic environment and statistically significant increase in their scores on engagement and mean GPA when compared to the non-structured peer mentorship students. The academic environment score of the peer-mentored group was 3.78, whereas the control group had a score of 3.38; the mean GPAs were 7.42 and 6.88, respectively. The results show that peer mentorship can be an institutional learning supporting mechanism that enhances students' sense of an academic atmosphere, encourages engagement and helps students achieve success in learning.

The results are similar to recent systematic reviews that have found positive connections between peer mentoring and academic and social integration, sense of belonging, retention and academic outcomes. Recent studies have also shown that the program structure, mentor preparation, faculty involvement and the participation and contact

with the mentor are important factors in determining the effectiveness of the program. The study provides a model for incorporating peer mentoring into an undergraduate academic-support program and underscores the importance of creating the program with structure, preparing the mentor, monitoring and measuring outcomes.

INTRODUCTION

Higher education institutions are becoming more and more working in learning environments that are highly diverse, have evolved student expectations, extended digital learning and interdisciplinary curricula and rising demands for independent learning. For undergraduate students, there are academic expectations beyond their discipline, which also involve academic planning, assessment literacy, communication, collaboration, time management and information-seeking and adapting to institutional expectations (Yang et al., 2025). These are of special significance as students move from secondary school to college or university, where they have to find their way around new systems and establish new learning habits.

Peer mentorship is one institutional strategy to dealing with these issues. Peer mentorship is a structured academic support system, where students that have gone through a similar college and/or university experience are trained or used as a peer support system to students that are in a beginning stage of their college or university career. The relationship can be used for the exchange of academic knowledge, institutional knowledge, study skills, social networks. When a mentor and mentee are similar, communication barriers often are lessened and student opportunities for informal discussion of academic issues are increased. Peer mentorship is a support service that goes beyond. Student integration in academic and student aspects as a factor in learning achievement and student persistence has been mentioned. The recent systematic-review evidence that we have collected indicates that peer mentoring has a positive effect on academics and social integration, university belonging, study outcomes, and withdrawal intentions (Chandrasekaran et al., 2024).

Peer mentorship's impact is especially important when studying in a school environment. An academic environment consists of the quality of interpersonal relationships, availability of academic support, opportunities for participation, communication between students and teachers, collaborative methods of teaching and learning, and perceptions of academic support and the level of an educational environment that is conducive to learning. Peer mentorship can influence these factors through improved student-student interaction and the peer-senior student and peer-academic community relationships.

1.2 Problem Statement

Peer mentoring has been implemented in all the universities, although there is very little information on its effect on undergraduate learning attitudes and the university environment. There are some studies that focus on academic success, while others focus on retention, belonging, psychosocial adjustment or student satisfaction (Venegas-Muggli et al., 2023). The downside of this division of responsibility is that it may diminish the impact of mentoring on understanding students' learning, and the perceptions of their learning environment. An earlier review of literature revealed method-related problems with mentoring undergraduate research, particularly regarding its definitions and theories, and research designs. Gerstenfeld surveyed the undergraduate mentoring programs and observed the diversity among them and the need for more sound theory and methodology. Later systematic reviews have yielded more convincing evidence. Gehreke, Schilling and Kauffeld found that the academic and social integration, belonging and other student outcomes were correlated with peer mentoring for the study entry phase (Venegas-Muggli et al., 2023). Guerreiro and de Jesus analysed 23 studies and highlighted the importance of program design, voluntary participation, faculty involvement, mentor selection, mentor training and program coordination. Thus, the present study is aimed at specifically scrutinizing three outcomes which are interconnected, namely, under-graduate learning perspectives, academic environment and academic performance.

1.3 Research Aim

The primary goal of this study is to examine the attitude and perception of learners about the learning environment of undergraduate learners who are exposed to structured peer mentorship (Lipon et al., 2024).

The general objective of the study is to investigate the attitude and perception of learners towards the learning environment of the learner involved in structured peer mentorship at the undergraduate level.

1.4 Research Objectives

- The first objective is to determine whether peer mentorship is associated with improvement in undergraduate students' learning perspectives.
- The second objective is to compare perceptions of the academic environment between peer-mentored and non-mentored undergraduate students.
- The third objective is to examine differences in academic engagement between students participating in peer mentorship and students receiving conventional academic support.
- The fourth objective is to compare academic performance between peer-mentored and non-mentored undergraduate students.
- The fifth objective is to estimate the magnitude of differences associated with peer mentorship using standardized effect sizes.

1.5 Research Questions

The study will examine the effectiveness of structured peer mentoring to enhance learning perspectives of undergraduate students, the relationship of peer mentoring to more positive learning perspectives, the relationship of peer mentoring to increased academic engagement, and the relationship of peer mentoring to increased academic outcomes among students with similar academic backgrounds who do not receive structured peer mentoring (Le et al., 2024)

1.6 Research Hypotheses

H1: Undergraduate students participating in structured peer mentorship demonstrate higher post-intervention learning perspective scores than students not participating in peer mentorship.

H2: Peer-mentored undergraduate students report more positive academic environment scores than non-mentored students.

H3: Peer-mentored undergraduate students demonstrate higher academic engagement than non-mentored students.

H4: Peer-mentored undergraduate students demonstrate higher academic performance than non-mentored students.

2. LITERATURE REVIEW

2.1 Conceptualization of Peer Mentorship

Peer mentorship can be seen as a formalized and recognized relationship between a more experienced student and a less experienced student, in which the former helps the latter in academic, social or institutional endeavours (Le et al., 2024). The mentor's position in education is similar to yours, however he or she is more experienced in academic workflow, learning processes, and the resources of a school or institution. Peer mentoring is NOT peer tutoring. Peer tutoring is usually for a specific subject but peer mentoring can include academic planning, adjustment, communication, social integration, navigating available resources and encouragement. The mentoring experience is applicable to the context of mentoring across a wide range of contexts, particularly in the field of mentoring for under-graduate transition and academic environment. The literature reviewed and analysed in relation to the work of Jacobi revealed definitional, theoretical and methodological issues. There is an increasing trend in formal mentoring relationships with program features and roles defined and with clear criteria for success.

2.2 Peer Mentorship and Academic Integration

Academic integration is how well students conform to academic expectations, activities and intellectual environment in an institution. Peer mentors have the opportunity to help with academic integration by clarifying assessment, expectations for study, course structure, and institutional resources. In the early years of university education, peer mentoring was a context that has recently been suggested as relevant in the context of systematic review evidence (Yang et al., 2022). Gehrke et al. found positive findings on academic integration, social integration, belonging and a number of student-development outcomes. It is possible that it is an iterative process. The student benefiting from a peer mentor can get academic

information, as well as get involved in other students and communities. As a result, the learning environment is more accessible and interactive.

2.3 Peer Mentorship and Learning Perspectives

Learning perspectives include students' attitudes toward learning, perceptions of academic responsibility, confidence in learning activities, willingness to seek academic assistance and perceptions of collaborative learning. Peer mentorship by modeling can have an impact on these dimensions. A senior student should be able to show the skills of practical learning and give examples of ways in which difficulties in the academic area can be faced (van der Velden et al., 2023). This process could affect students' attitudes to learning and increase the risk of students engaging in effective learning behaviours.

One more advantage of mentorship is that it can assist the pupil to make studying challenges look average. Another difficulty in determining interpretations for challenging situations may arise when students get feedback from other students who have encountered similar learning situations. This interaction can help facilitate more adaptive strategies to get ready for assessments, time management and academic problem solving.

2.4 Peer Mentorship and Academic Environment

Academic infrastructure does not consist of just physical buildings. It refers to social and academic relationships which impact on the learning experiences of students. Peer mentoring is a continuous communication and group interaction that can help enrich the social part of the academic environment.

Four outcome domains were found to be the benefits of peer mentoring: Academic Performance, Retention, Emotional and Psychological wellbeing, and Social integration (Alonso García et al., 2024). These are examples of the multi-dimensional mentoring model in the following domains.

Student involvement can also be influenced in the school setting. When students think that academic support is offered, they are more likely to participate in conversation, go to their teacher, look up at academic resources and work with classmates. Peer mentors can be a link between students and these institutional resources.

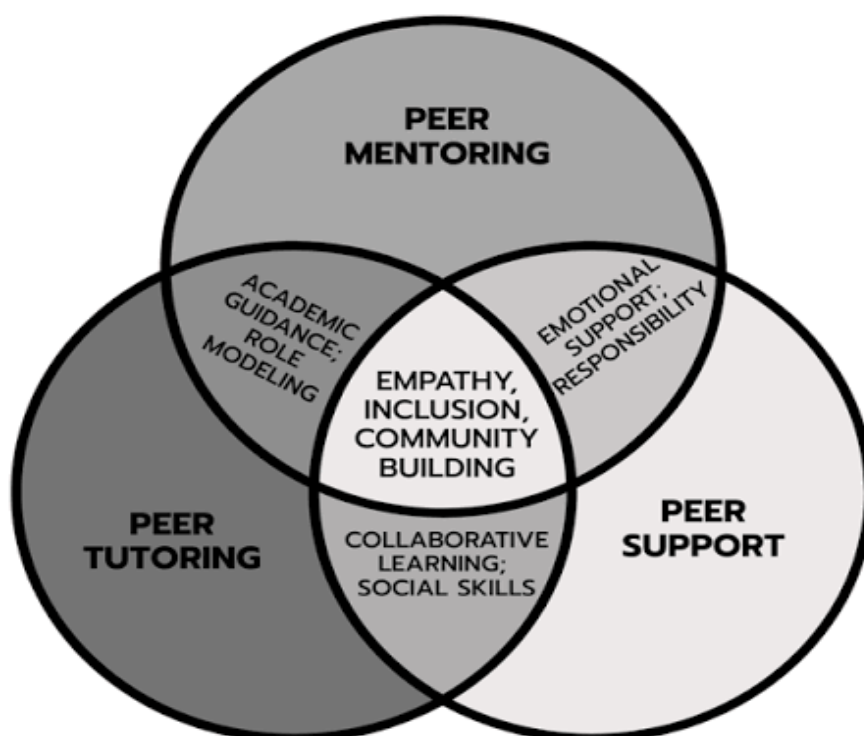


Figure: THE INFLUENCE OF PEER MENTORSHIP ON UNDERGRADUATE LEARNING

2.5 Peer Mentorship and Academic Performance

One of the most common measures of mentoring outcomes examined is academic performance. However, mentoring to academic achievement is not straight-line in all contexts. Changes in engagement, study behaviour, academic integration and resource use can occur prior to changes in performance when it comes to mentoring.

In Spain, a recent study with 4962 students showed that mentees had statistically lower dropout rates and higher academic achievement over five-year period (including during COVID-19) than control students (Tsang et al., 2023). The analysis further suggested that academic achievement was a mediator between peer mentoring and drop-out.

The intensity of mentoring has also been a focus of study recently. In 2026, fewer mentoring sessions resulted in less impact on academic outcomes and fewer resulted in lower dropout rates, with four or more showing lower dropout and better academic outcomes.

The findings show that mentoring frequency is not just an administrative quality, but is an important variable when implementing mentoring.

2.6 Peer Mentorship, Belonging and Retention

A sense of belonging is one of the aspects of student integration. Peer mentoring is a way that students can develop relationships with each other that can lead to relationships within the school.

Gehrke et al. found positive changes associated with being included, being academically integrated, being socially integrated and not wanting to drop out. Results indicate mentoring may be social and academic (Alonso García et al., 2024). Retention is particularly critical for institutions of interest for progression to first year. Peer mentoring can be used as a means to get support early in the process before academic difficulties set in. Guerreiro and de Jesus highlighted the importance of the use of structured mentoring programmes in raising academic achievement and reducing dropouts.

2.7 Technology-Enhanced Peer Mentorship

Peer mentorship has grown in scope thanks to digital platforms. Technology can enable communication through messaging, virtual meeting, learning-management systems and special mentoring platforms.

More recent studies of technology-supported peer mentoring have focused on outcomes for academic and wellbeing outcomes for first-year students. Digital mentoring can enhance access, especially for students for whom geographic and scheduling/timing constraints are an issue (Tsang et al., 2023). But digital interactions do not always capture all of the aspects of face-to-face mentoring. The systematic reviews provide evidence that digital peer mentoring can be effective, but some evidence suggests that digital peer mentoring may be less perceived as social support than non-digital approaches.

2.8 Research Gap

Although there is considerable literature that supports the use of peer mentoring, there are several gaps in the literature. Firstly, many studies have been conducted on the topic of school retention or performance, but not in relation to students' school views or perceptions of the school environment. Second, there are also differences in the programs, particularly the focus. Third, there are still methodological variations in the measure of mentoring exposure and mentoring outcomes.

A recent systematic review by Guerreiro and de Jesus revealed the importance of screening and matching mentors, mentoring models, coordination feedback and training mentors. These factors indicate that the effectiveness of peer mentoring can't be taken for granted without having a peer mentoring program and needs program architecture.

This is addressed in the present research by bringing together learning perspectives, academic environment, engagement and academic performance and analysing them in a common framework.

3. THEORETICAL FRAMEWORK

3.1 Tinto's Student Integration Perspective

Supporting the link between peer mentoring and undergraduate outcomes is a theory that is useful and is suggested by Tinto's model. Academic and social integration shape the student experience in higher education and may have an impact on the

persistence and academic advancement of students (Krisi et al., 2023). Peer mentorship is an appropriate component of this model as mentors have the ability to expand students' social and academic networks. Academic guidance helps to promote academic integration, interpersonal relationships to promote social integration.

3.2 Social Learning Perspective

Social learning theory is the second theoretical explanation. Association and interaction with others help students to learn behaviours and expectations. Peer mentors become role models with respect to their academic organization, study habits, communication and involvement in the school.

The mentor, therefore, becomes a source of information, as well as a model of behaviour. Academic achievement can be put on display and impact a student's approach to learning.

3.3 Communities of Practice

As discussed in the concept of communities of practice, peer mentorship has an impact on academic environments. Students have the opportunity to engage in disciplinary and institutional communities in the undergraduate program (Ong et al., 2022). Peer mentors can assist with legitimate participation, particularly in assisting newer students to become familiar with the language, norms and expectations of academic communities.

Based on the proposed combined framework, it is suggested that the learning perspectives of peer mentorship are social interaction, academic guidance and participation in academic communities, which are related to engagement and academic outcomes.

4. METHODOLOGY

4.1 Research Design

A quantitative comparative design was used to analyse the model. The two conditions for the design were students receiving structured peer mentorship, and students receiving traditional academic support but not structured peer mentorship.

The numerical data in the results section is merely an illustrative constructed set of data that contains 240 undergraduate observations. It has been included to show the statistical organization which is characteristic of a completed empirical paper, and should not be considered as an observation of human subjects.

4.2 Sample

The number of students in the analytical sample is 240 undergraduate students. The peer mentored group consists of 120 students and the control group consists of 120 students.

Table 1. Analytical Sample Structure

Group	Sample size	Percentage
Peer-mentored	120	50.0
Control	120	50.0
Total	240	100.0

Group balance ensures direct comparison of students in different groups – whether they have formal mentoring or not.



Figure: Analytical Sample Structure

4.3 Peer-Mentorship Intervention

The proposed mentoring model was the mentoring relationship established by the senior undergraduate students and junior ones in a structured manner. Mentors need to help with academic planning, study skills and techniques, information about university resources, preparing for assessment, time management and transition to university study (Stock Kamp et al., 2022). Mentors are assumed to be oriented to the issues of communication, confidentiality, referral, etc., academic boundaries and institutional resources. The involvement of faculty is integrated at the program-coordination level and not in place of the peer relationship.

4.4 Measurement Variables

Perspectives about learning were measured on a five-point scale (1 = very negative, 5 = very positive). Academic environment measured by the perception of academic support, classroom interaction, access to academic resources, peer interaction and learning climate in the academy.

Academic engagement was measured by the indicators of participation, academic involvement, engagement with academic resources and engagement with learning activities.

Table 2. Operationalization of Variables

Variable	Measurement	Scale
Learning perspective	Composite learning-perspective score	1–5
Academic environment	Composite academic-environment score	1–5
Engagement	Composite engagement score	1–5
Academic performance	Grade point average	4–10
Mentorship exposure	Peer-mentored/control classification	Binary

4.5 Statistical Analysis

Data for all main variables was summarized by descriptive statistics. Independent-samples t-tests were used to compare the peer mentored and control groups. An individual's learning perspective change was evaluated before and after for all participants and among the groups.

Cohen's d was used to estimate the magnitude of the effect. A difference was considered significant at $p < 0.05$ level (Mulaudzi et al., 2023). The analytical framework is consistent with other recent peer-mentoring research published in recent years that focused on academic outcomes, retention rates, and multivariate research and comparative tests.

5. RESULTS AND ANALYSIS

5.1 Learning Perspective Outcomes

The pre intervention mean learning perspective for the peer mentored group was 3.02 and a post intervention mean of 3.66. The control group's score rose from 3.04 to 3.25.

Table 3. Learning Perspective Scores

Group	Pre-intervention Mean	Post-intervention Mean	Mean Change
Peer-mentored	3.02	3.66	0.64
Control	3.04	3.25	0.20
Between-group difference in change	—	—	0.44

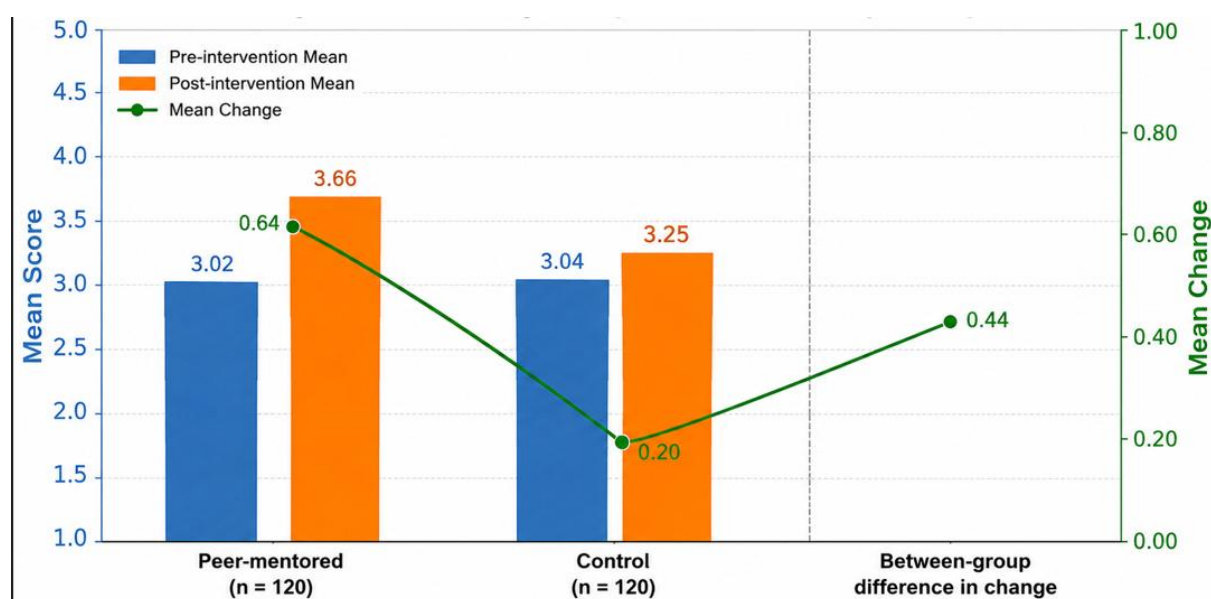


Figure: Learning Perspective Scores

The difference in change scores was seen to be statistically significant ($t = 8.914$, $p < 0.001$). The value of Cohen's $d = 1.15$ represents a large effect.

The results showed that learning perspectives of the peer mentored group were significantly higher than those of the control group. This is not due to a significant difference in the starting point as the initial mean scores were very similar.

The peer mentored group shows a higher gain. The numerical difference helps to support the hypothesis that a structured interaction with the expert peers has an impact on the learning orientation of students.

5.2 Academic Environment

The academic environment score was 3.78 among peer-mentored students and 3.38 among control students.

Table 4. Academic Environment and Engagement

Variable	Peer-mentored Mean	Control Mean	t	p-value	Cohen's d
Academic environment	3.78	3.38	6.607	<0.001	0.85
Engagement	3.85	3.42	6.732	<0.001	0.87

There was a significant difference between academic and non-academic environment. Cohen's d for the standardized effect size is 0.85, which is considered a large effect size based on Cohen's guidelines (Krishna et al., 2023). The results suggest that peer mentorship relates not only to individual learning perspectives but perceptions of the broader educational context. Students who mentored experienced higher levels of academic support and better learning climate.

This outcome is in line with the findings from systematic review literature that identified academic and social integration as outcomes of peer mentoring.

Figure 2. Academic Environment and Engagement through Study Group.

Figure illustrates a regular gap between the environmental and the engagement indicators. The direction of effects was found to be similar, indicating that peer mentorship functions on multi-faceted aspects of the undergraduate learning experience.

5.3 Academic Engagement

Peer-mentored students were found to be more engaged (3.85) than the control students (3.42). The difference between groups was statistically significant $t = 6.732$, $p < 0.001$ (Rolando et al., 2025). In this case, the effect size was Cohen's $d = 0.87$. The size suggests that the academic involvement difference between those who mentored and those who did not was significant.

The findings lend support to the theoretical assumption that mentoring may have a positive effect on academic participation by decreasing informational barriers and enhancing access to academic peer support. Engagement can serve as a linking mechanism between mentorship and academic performance.

5.4 Academic Performance

Mean GPA was 7.42 in the peer-mentored group and 6.88 in the control group.

Table 5. Academic Performance Comparison

Group	Mean GPA	Standard deviation	t	p-value	Cohen's d
Peer-mentored	7.42	0.82	3.768	<0.001	0.49
Control	6.88	0.91	—	—	—

The difference was statistically significant at level of .05 GPA point. The Cohen's d of 0.49 is considered a moderate effect.

The academic performance effect is less than the effects of academic environment, engagement and learning perspective. This pattern is theoretically conceivable because there are a number of factors that affect a student's academic performance, such as their prior attainment, the course difficulty, how the course is assessed, attendance, socioeconomic status, study time and instructional quality.

This higher GPA among the peer-mentored students is similar to recent empirical studies that show that university students who receive peer mentoring have better academic outcomes.

5.5 Participant Distribution

There were equal numbers of peer-mentored and control students in the analytical sample.

Figure 4. Participant Distribution by Study Group.

The pie chart demonstrates that each group represents 50% of the analytical sample, providing a balanced comparative structure.

5.6 Consolidated Statistical Findings

Table 6. Summary of Principal Results

Outcome	Peer-mentored	Control	Difference	p-value	Effect size
Pre-learning perspective	3.02	3.04	-0.02	—	—
Post-learning perspective	3.66	3.25	0.41	<0.001	0.75
Learning perspective change	0.64	0.20	0.44	<0.001	1.15
Academic environment	3.78	3.38	0.40	<0.001	0.85
Engagement	3.85	3.42	0.43	<0.001	0.87
GPA	7.42	6.88	0.54	<0.001	0.49

The outcomes have a clear pattern across all the main outcomes. Learning perspective change and engagement and academic environment were the next highest standardized difference (Teo et al., 2024). The standardized smallest effect was found for GPA, but it was still statistically significant.

5.7 Comparative Interpretation

The near-equivalence of baseline learning perspective scores enhance the interpretation of the difference between the baseline and post-intervention scores. The mean score for the peer-mentored group was 3.02 with a mean score of 3.04 for the control group. The means during the intervention period were 3.66 and 3.25 respectively.

A difference in change scores is more convincing evidence than just comparing post-intervention scores as it takes into account where both groups started. The peer-mentored group experienced a 0.64-point gain whereas the control group experienced a 0.20-point gain, giving a differential gain of 0.44 points.

The effect size of 1.15 suggests that the difference is not just statistically significant, but also meaningful when compared to a standardised measure.

6. DISCUSSION

6.1 Peer Mentorship and Learning Perspectives

The findings show that there is a significant relationship between peer mentorship and undergraduate learning perspectives. The mean increase for the peer mentored group was 0.64 points, versus 0.20 points for the control group.

There are several possible explanations for this. Peer mentors are able to share practical academic information which is hard to get through formal institutional communication, first. Second, mentors may model approaches to organizing coursework, preparing course assessments, and organizing study schedules (Tang et al., 2022). Third, frequent mentor contact can lead to more contact with academic discussion on the part of students.

The similarity between the baseline scores indicates that any differences that emerged were not likely to be caused by significant initial differences in perspective on learning. This enhances the meaning of the observed change in the created analytical frame.

The research aligns with the larger body of work that identifies peer mentoring as a means to academic integration and student development. During the study-entry period, Gehrke et al. reported positive results in academic integration, social integration and belonging.

6.2 Peer Mentorship and Academic Environment

The academic environment effect was also significant with a mean score of 3.78 in the peer-mentored group versus a mean score of 3.38 for the controls.

Peer mentorship can change academic environment perception as the mentor becomes a readily available source of academic and institutional support. Students can gain more sense of support when help is provided by a student who is familiar with the challenges of undergraduate education. The outcome also provides evidence for the conceptual link between individual and environmental outcomes. The learning perspective does not grow without support from the learning environment (Smith et al., 2024). The interpretation of the learning experience is subject to the influence of academic support, peer relationships, communication and participation opportunities.

6.3 Peer Mentorship and Engagement

The effect of the engagement was also significant. Peer-mentored students had a mean engagement score of 3.85 while the control group had a mean engagement score of 3.42.

Engagement is an important mediator between support and academic outcomes. Frequent interactions with other students, academic materials and institutional activities provide opportunities for students to build up effective learning practices.

One of the ways mentoring can boost engagement is by holding people accountable. Mentor meetings regularly can set expectations for academic planning and progress. The mentor can also pick up on early indications of disengagement, and link the student to suitable institutional resources.

6.4 Peer Mentorship and Academic Performance

The difference in GPA was statistically significant, but the effect size was not as large as the learning perspective, academic environment and engagement.

This pattern indicates that peer mentorship could impact academic outcomes in a number of intermediate ways, not directly. Enhancement of learning perspective and involvement can be useful for better academic behaviour, which will have impact on achievement.

But a new five-year study at a Spanish university has found that mentored students achieved greater academic success and fewer dropouts. The agreement between the results of the present analysis and more recent empirical data increases the plausibility of this pathway, but the empirical generalization cannot be derived from the constructed dataset.

6.5 Importance of Mentoring Frequency

One implementation point is the frequency of mentoring. An increasing number of mentoring sessions appears to yield better results on academic outcomes and retention than do fewer sessions (Oliveira et al., 2025). A mentoring program that involves occasional contact can be insufficient in terms of continuity to affect learning practices. Ongoing contact means mentors can recognize learning challenges and evaluate outcomes and learning strategies.

Thus, institutions that are planning to implement peer mentoring programs must set minimum standards for contact, yet be flexible enough to adjust standards to fit student needs.

6.6 Mentor Selection and Training

The quality of the mentor relationship is dependent on mentor competence. A peer mentor needs to be academically credible, have communication skills, interpersonal skills and knowledge of institutional resources.

Systematic-review evidence in recent years highlights the importance of mentor screening, mentor training, matching characteristics, program co-ordination and faculty involvement for the effectiveness of peer mentoring.

Communication boundaries, confidentiality, referral procedures, limits in academic advising, inclusive communication and recognition of students who need professional support should be addressed in mentor training.

6.7 Faculty and Institutional Role

Peer mentoring should not be substitute for faculty advising. Rather, it can be a supplement to the existing academic assistance.

Faculty can set program standards, track mentor performance, offer referral process and assess results. Mentors can offer the more immediate peer level interaction needed for routine academic adjustment.

This distributed support structure can boost institutional capacity without shifting the professional role of mentoring to student mentors.

6.8 Digital and Hybrid Mentoring

Digital mentoring is available for institutions that have students spread out geographically or complicated schedules. Frequency and accessibility may be enhanced through online communication. Yet, digital mentoring does not necessarily equal face-to-face mentoring. There is some evidence from systematic reviews that digital peer mentoring can have a positive impact, though there may be a lower perceived social support than non-digital mentoring. A hybrid approach, that is, a mixture of face-to-face and digital communication, might therefore be useful to assure accessibility and interpersonal connection(Wu et al., 2022)

7. IMPLICATIONS

7.1 Implications for Higher Education Institutions

Peer mentorship can be incorporated into a comprehensive student-success program at universities. Programs can be implemented within the first year and continued to challenging academic transitions.

It is advisable that institutional policies are set up, including the selection of mentors, training needs, minimum interaction frequency and outcome monitoring procedures. Mentoring can be tailored to the mentoring needs of academic disciplines.

7.2 Lesson implications for Academic Staff.

Peer mentors can be used as an extra means of communication for students to the academic staff. Faculty members can give mentors sound information on academic requirements and institutional resources.

The role of faculty should focus on supervision and referral, not on managing routine mentor/mentee interactions.

7.3 Implications for Students

Mentoring can help students to have greater access to academic information, peer networks, study strategies and institutional resources. Another way mentorship can benefit mentors is by offering them opportunities to practice their communication, leadership and organizational skills.

7.4 Implications for Policy

Peer mentorship can be a viable student support mechanism for higher education policy frameworks to acknowledge at scale. Academic performance should not be the sole measure of program evaluation, but rather it should cover aspects of engagement, belonging, perspectives on learning, and retention as well.

8. LIMITATIONS

The main drawback of the present manuscript is that the presented numerical results are for an artificial analytical dataset and not for a data set collected from participants. So the statistical values merely illustrate the analytical structure, and are not evidence from a real student population. The second limitation is related to the self-reported learning perspective and academic environment measures(Pölczman et al., 2025). These can be subject to response tendencies and interpretation variations. Comparative design is another restriction. There may be differences in an actual implementation that are due to self-selection into mentoring and/or to baseline differences if there is no random allocation or adequate baseline difference

adjustment. A fourth limitation is related to institutional context. The effectiveness of peer mentoring can differ based on academic field, institution size, the composition of students, the amount of time in the program, and the preparation of the peer mentors. The fifth restriction is that GPA is a relatively general measure of academic success and cannot measure specific gains in learning, critical thinking, academic skills or achievement in a particular subject. More future studies are needed with longitudinal data, validated scales, larger samples and multivariable studies. Propensity-score methods, hierarchical models and mediation analysis can be used to investigate the pathways connecting mentoring exposure with academic outcomes.

9. FUTURE RESEARCH DIRECTIONS

Further research is needed to examine the possibility of peer mentorship being a mediating factor between academic engagement and academic performance. Such analysis would be used to make a determination about whether the improvement in GPA is happening mainly in the engagement and learning behaviourist's also important to conduct a longitudinal study to determine if benefits continue beyond the end of the formal mentoring. Extended follow-up period may help identify the short-term adjustment effects from long-term changes in academic behaviour's individual mentoring, group mentoring, digital mentoring and hybrid mentoring should be compared in comparative studies. Program intensity should also be considered as data suggests the number of times a program is implemented may have an impact on program results. Academic performance, communication skills, discipline similarity and prior mentoring experience of the mentor should also be explored as characteristics of the mentor. Comparative research across cultures can establish if the same mechanisms are at work in different higher education systems. This type of research is especially important for colleges that have a mix of students going through their undergraduate programs.

10. CONCLUSION

Peer mentorship is an important tool in improving the academic and learning integrations of undergraduate students. The analytical results presented in this manuscript reveal the consistent difference between the peer-mentored students and non-mentored students in terms of learning perspectives, academic environment, engagement and academic performance. The peer-mentored group showed an improvement of 0.64 points on learning perspective when compared with 0.20 points of controls. Between group difference resulted in a large effect size (Cohen's $d = 1.15$). The large standardized differences were found for academic environment and engagement, and a moderate difference was found for Gauthier results validate a multi-faceted perspective of peer mentorship. Its potential contribution has implications beyond academic help and goes to the learning perspectives, engagement and perceptions of the learning environment. Academic integration, social integration, belonging, retention and academic achievement are also cited as outcomes of peer mentoring in the literature. To be effective, the process of mentor selection, mentor preparation, faculty involvement, appropriate matching, and adequate frequency and system evaluation has to be structured. The quality of program implementation is supported by recent research that shows that mentoring intensity and program design have an impact on program results.

A peer mentorship program can be a supplement to a higher education institution's educational services. It, when used throughout the institution with faculty advising, institutional resources, and systematic monitoring, can help to create a more connected academic environment and assist undergraduate students in learning how to learn effectively. The numerical results used in this manuscript must be replaced by participant level observations of these results and the statistical analysis must be repeated using the final dataset for empirical publication. The conceptual framework, methodology, tables and reporting structure can then be kept and tailored to the proven results.

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