Optimizing Student Retention: Unveiling the Impact of Prompt Feedback and Lecturer Quality through Student Satisfaction

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Abstracts
This study investigates the crucial elements contributing to student retention in educational institutions, emphasizing the significant roles of prompt feedback and lecturers' quality, with student satisfaction acting as a mediator. Student retention is a vital metric for academic institutions as it directly affects educational outcomes and financial stability. The study aims to explore how these factors influence retention, offering insights that could inform strategic improvements in teaching and feedback mechanisms. Data was collected through a structured survey distributed to students, using a purposive sampling method due to the absence of an exhaustive population list. A total of 433 valid responses were analyzed in the final assessment. The data analysis employed Partial Least Squares Structural Equation Modeling (PLS-SEM), which is critical for evaluating the relationships between variables and testing the study's hypotheses. The hypotheses testing results revealed that prompt feedback and high-quality lecturers significantly enhance student satisfaction. Satisfaction, in turn, strongly impacts retention, confirming its mediating role. Interestingly, the direct effect of prompt feedback on retention was not significant, emphasizing that satisfaction is a necessary pathway for influencing retention. For future studies, it is suggested that the impact of technological integration on feedback mechanisms and the potential moderating effects of

student demographics be examined. Additionally, conducting longitudinal studies could shed light on the long-term implications of these factors on retention. The implications of this study underline the importance of focusing on student satisfaction as a core strategy to enhance retention.

Keywords: Prompt Feedback, Lecturers' Quality, Students' Satisfaction, Students' Retention, Open Online Flexible Distance Learning

Introduction

Student retention in higher education has become a global concern, with studies reporting significant numbers of students abandoning their programs before graduation (Chen & Yang, 2023). This is particularly challenging for open online flexible distance learning (OOFLDL) institutions, which offer increased access to education but lack the traditional face-to-face interaction and support systems (Ekanem & Igwe, 2020). While research on student retention in traditional settings is abundant (McNair & Kezar, 2023), a gap exists in understanding the factors influencing OOFDL learners (Bates, 2019). This study addresses this gap by investigating the direct and indirect influence of prompt feedback and lecturers' quality on students' retention in OOFDL environments, with student satisfaction as a potential mediating factor. Limited research explores the combined effects of prompt feedback and lecturer quality on OOFDL student retention (Xu & Jaggars, 2021). OOFLDL environments may present unique challenges in these areas, as instructors may not be readily available to provide immediate feedback, or students may struggle to build rapport with lecturers solely through online interaction (Bernard et al., 2020). Student satisfaction is a crucial factor influencing retention, with satisfied students more likely to persist in their studies (Alsawaqfeh & Lin, 2021). However, the specific mechanisms by which prompt feedback and lecturer quality contribute to student satisfaction and retention in OOFDL settings remain unclear (Fredricks et al., 2023). This study seeks to shed light on these relationships. By examining how prompt feedback, lecturer quality, and student satisfaction influence student retention in OOFDL institutions, the findings can inform stakeholders in developing strategies to enhance student success. Policymakers can gain valuable insights to develop strategies that improve the effectiveness and efficiency of the OOFDL system (Al-Samarrai, 2022). OOFDL institutions can utilize the findings to improve practices, such as faculty training on providing prompt and effective feedback and fostering strong lecturer-student relationships (Chen & Yang, 2023). This can lead to a more supportive learning environment, potentially increasing job satisfaction for OOFDL institution employees (Wang et al., 2020). Students can benefit from understanding the factors contributing to successful online learning experiences, empowering them to make informed choices about their education (Rovai, 2022). This study aims to assess the direct and indirect influence of prompt feedback and lecturers' quality on students' retention and students' satisfaction as mediators in open online flexible distance learning higher education institutions.

Literature Review
Underpinning Theory

Self-determination theory (SDT) by Deci & Ryan (2000), provides a strong theoretical foundation for examining student retention in open online flexible distance learning (OOFLDL) environments. This theory posits that individuals are motivated by three basic psychological needs: autonomy (feeling control over their actions), competence (feeling capable), and relatedness (feeling connected to others) (Vansteenkiste et al., 2020). In the context of

OOFDL, these needs can significantly influence student retention. Prompt feedback can fulfil the need for competence. Timely and specific feedback allows students to gauge their understanding, identify improvement areas, and experience mastery over the learning material. This fosters intrinsic motivation, the desire to learn for the sake of learning itself, which strongly predicts persistence in educational pursuits (Jang et al., 2022). Lecturer quality can also influence multiple SDT needs. Instructors who employ student-centred approaches and encourage autonomy in learning activities support students' feelings of control (Lai & Hwang, 2023). Furthermore, lecturers who build rapport and foster a sense of community can address the need for relatedness. When these needs are met, students are more likely to experience intrinsic motivation and satisfaction with the learning environment, leading to higher retention rates in OOFDL institutions (Chen & Yang, 2023). By investigating how prompt feedback, lecturer quality, and student satisfaction interrelate within the framework of SDT, this study can shed light on the motivational factors contributing to student success in OOFDL environments.

Relationship between Lecturers' Quality, Satisfaction & Retention
The relationship between lecturers' quality and students' retention is profoundly influenced by lecturers' job satisfaction, which is a crucial mediator. High-quality lecturers, characterized by their expertise, teaching proficiency, and ability to inspire and engage students, play a pivotal role in optimizing the educational experience and, consequently, in enhancing student retention rates (Harrison & Weiner, 2023). Aydin and Kaya (2021), highlight that lecturer satisfaction significantly impacts their performance and students' academic success and inclination to stay enrolled. Lecturers who are satisfied with their work conditions are more likely to be enthusiastic, committed, and innovative in their teaching methods, creating a stimulating learning environment that students find engaging and valuable (Gonzalez & Lambert, 2022). This positive teaching atmosphere fosters a stronger student-lecturer connection, enhancing students' academic experiences and increasing their likelihood of remaining at the institution (Larson & Richards, 2020). Turner and Robinson (2023), assert that the quality of teaching, directly influenced by lecturers' satisfaction, substantially affects students' retention. When lecturers are satisfied, it reflects in their teaching efficacy, improving student satisfaction and retention as they perceive the education they receive to be high quality and engaging (Li et al., 2020). Furthermore, satisfied lecturers are more inclined to participate in professional development and continually improve their teaching approaches, positively impacting student retention (Nash & McKenzie, 2022).

Relationship between Prompt Feedback, Satisfaction & Retention
The relationship between prompt feedback and student retention is a significant study area within educational settings, particularly when considering students' satisfaction as a mediating factor (Hassan et al., 2020). Prompt feedback is an essential component of the educational process. It provides students with timely information on their performance, which can significantly influence their learning progression and motivation (Sharif Nia et al., 2023). When students receive feedback shortly after an assessment, they can quickly reflect on their mistakes, understand their strengths, and address improvement areas (Kebah et al., 2019). This immediacy enhances their learning experience and increases their engagement and persistence in the educational program (Jain et al., 2023). Students' satisfaction is a critical mediator in this relationship (Osman et al., 2018). When feedback is prompt and constructive, students tend to feel more valued and supported, leading to higher levels of

satisfaction with their learning environment (Memon et al., 2022). Satisfied students are more likely to have a positive outlook on their educational journey, which can directly correlate with their likelihood of remaining in the program. In essence, when satisfaction is high, students tend to demonstrate greater commitment and retention, as they feel a stronger sense of belonging and validation (Butt et al., 2022). Educational institutions can leverage this dynamic by ensuring timely feedback mechanisms are in place, thereby enhancing student satisfaction levels and improving overall retention rates (Leoparjo et al., 2023). This relationship underscores the importance of integrating efficient feedback systems within educational frameworks to foster a more conducive and supportive learning environment, demonstrating that the timely dissemination of performance feedback, coupled with strategies to boost student satisfaction, plays a vital role in retaining students and fostering academic success (Kebah et al., 2019).
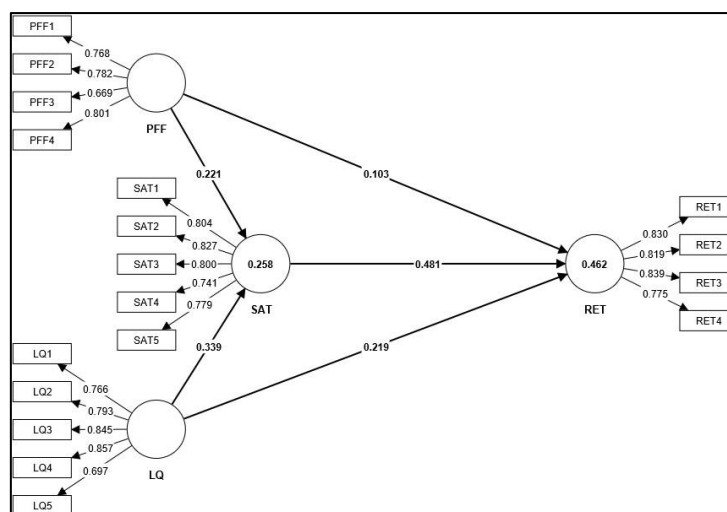

Figure 1: Research Framework
Notes: PFF=Prompt Feedback   LQ=Lecturer Quality   SAT=Satisfaction RET=Retention

Methodology
This research was designed to comprehensively evaluate both the direct and indirect effects of prompt feedback and the quality of lecturers on student retention, using students' satisfaction as a mediating factor within open online flexible distance learning higher education settings. Researchers employed surveys for primary data collection to accomplish this, meticulously selecting valid and reliable measures based on an extensive literature review. Due to the lack of a complete population list, purposive sampling was employed, and survey questionnaires were emailed to chosen participants. The study examined 18 observed variables, which included exogenous variables such as lecturers' quality (5 items), prompt feedback (4 items), and student satisfaction (5 items), all sourced from (Bangert, 2004). The endogenous variable was derived from Alison (2004), with 4 items for student retention. The constructs were evaluated by respondents using a Likert scale with five possible responses, ranging from strongly disagree to strongly agree. Of the 588 distributed surveys, 476 were returned, yielding a commendable response rate of 81%, ideal for structural equation modeling (SEM) analysis. From the returned surveys, 433 were deemed clean and suitable for further analysis. For data examination and hypothesis verification, the researchers used Smartpls4 software, known for its effectiveness in SEM and multivariate analysis, aligning with

the recommendations of (Ringle et al., 2022). This tool facilitated detailed scrutiny of the proposed hypotheses and comprehensively analysed both measurement and structural models.

Data Analysis
Respondents' Profiles
Analyzing the respondents' demographic profiles based on the data provided reveals several notable insights. Regarding gender distribution, the sample includes 156 male respondents, accounting for 36.0% of the total, while female respondents are more numerous at 277, making up 64.0%, indicating a female-majority sample. Regarding age, the largest group consists of 195 respondents under 30 years old, representing 45.0% of the sample. Those aged 31 to 40 comprise 172 respondents, or 39.7%. Respondents aged 41 to 50 years total 56, constituting 12.9%. The groups aged 51 to 60 and over 60 are smaller, with 6 respondents (1.4%) and 4 respondents (0.9%), respectively. Looking at the year of study, 125 respondents are in their first year, representing 28.9% of the sample, while 76 are in their second year, comprising 17.6%. Third-year students comprise 25.9%, with 112 individuals and fourth-year students account for 71 respondents or 16.4%. Fifth-year students total 22, representing 5.1%, and those studying for over five years are 27, or 6.2% of the sample. Examining academic level, 61 students, or 14.1%, are pursuing a diploma, whereas the majority of 273 respondents, or 63.0%, are undertaking a bachelor's degree. Postgraduate diploma students account for 34 respondents, or 7.9%. Master's level respondents total 56, representing 12.9%, and those at the doctorate level are 9, making up 2.1% of the sample. Overall, the data indicates that most respondents are female, under 30, in either

Common Method Bias
Kock (2015) and Kock & Lynn (2012) proposed a comprehensive methodology called the collinearity test, which examines both vertical and horizontal collinearity. According to Kock & Lynn (2012), pathological collinearity is present when the variance inflation factors (VIFs) surpass 3.3, indicating significant concerns about common method bias within the model. Consequently, if the VIFs obtained from the extensive collinearity evaluation are below 3.3, it suggests that the model is not affected by common method bias (Kock, 2015). As demonstrated in Table 1, all VIFs from the overall collinearity assessment were below the threshold of 3.3, confirming that the model is free from common method bias.

Table 1
Full Collinearity Test

	RET	PFF	LQ	SAT
RET		2.273	2.496	1.374
PFF	1.374		1.385	1.279
LQ	1.106	1.116		1.117
SAT	1.381	2.468	2.576	

Measurement Model
In this study, we followed the methodology recommended by Hair et al. (2017) to evaluate each measurement in the first and second order, identifying items with loadings below the 0.7 threshold. The analyses of construct reliability and validity revealed that the Average Variance Extracted (AVE) for all constructs ranged from 0.573 to 0.666, surpassing the 0.5

benchmark, which indicates convergent solid validity (Hair et al., 2017) (Table 2). Furthermore, the composite reliability for all constructs exceeded 0.7, with values ranging from 0.752 to 0.876. Cronbach's alpha values also surpassed the 0.7 threshold, ranging from 0.749 to 0.853 (Table 2). To ensure discriminant validity, we initially assessed cross-loadings to verify the proper representation and measurement of the respective constructs (Table 3). Following this step, we used the Heterotrait-Monotrait (HTMT) ratio for further assessment, complying with the recommended criterion for evaluating discriminant validity in Variance-Based Structural Equation Modeling (VB-SEM) as suggested by Henseler, Ringle & Sarstedt (2015). Table 4 shows the HTMT ratios, original sample, and 95% confidence intervals, confirming adherence to the HTMT threshold 0.85.

Table 2
Construct Reliability & Validity

	CA	CR	AVE
LQ	0.853(0.785, 0.912)	0.876(0.869, 0.883)	0.630(0.596, 0.686)
PFF	0.749(0.713, 0.821)	0.752(0.714, 0.811)	0.573(0.498, 0.606)
RET	0.833(0.817, 0.901)	0.840(0.836, 0.861)	0.666(0.617, 0.702)
SAT	0.850(0.836, 0.911)	0.854(0.839, 0.874)	0.625(0.613, 0.639)

Note: CI 95% bootstrap confidence interval, CA=Cronbach Alpha   CR=Composite Reliability AVE=Average Variance Extracted

Table 3
Cross Loadings

	LQ	PFF	RET	SAT
LQ1	0.766	0.472	0.312	0.303
LQ2	0.793	0.445	0.373	0.355
LQ3	0.845	0.609	0.514	0.476
LQ4	0.857	0.496	0.454	0.403
LQ5	0.697	0.447	0.335	0.321
PFF1	0.421	0.768	0.357	0.322
PFF2	0.382	0.782	0.340	0.258
PFF3	0.503	0.669	0.290	0.364
PFF4	0.579	0.801	0.370	0.361
RET1	0.508	0.438	0.830	0.562
RET2	0.422	0.372	0.819	0.477
RET3	0.437	0.369	0.839	0.512
RET4	0.283	0.271	0.775	0.501
SAT1	0.413	0.385	0.565	0.804
SAT2	0.401	0.373	0.522	0.827
SAT3	0.331	0.346	0.468	0.800

Table 4
Hetrotrait-Monotrait (HTMT) Ratios

	LQ	PFF	RET
PFF	0.163(0.079, 0.245)		
RET	0.233(0.120, 0.336)	0.602(0.501, 0.700)	
SAT	0.212(0.100, 0.311)	0.662(0.554, 0.766)	0.879(0.797, 0.933)

Note: CI 95% bootstrap confidence interval

Structural Model
In this study, the structural model was evaluated using the approach described by Hair et al. (2017), which involved a detailed examination of pathway coefficients (β) and coefficients of determination (R^2). The analysis utilized the Partial Least Squares (PLS) method, employing 5000 sub-samples to assess the significance of path coefficients. Table 4 provides the results from hypothesis testing, including confidence intervals for path coefficients (beta), corresponding t-statistics, and p-values. This thorough analysis offers valuable insights into the significance and robustness of the relationships among variables within the structural model. The extensive hypothesis testing results in Table 4 provide a detailed analysis of each hypothesis, highlighting Beta coefficients, T-statistics, P-values, and the final decisions regarding hypothesis support, enriching the study's findings with greater depth and clarity.

The results of the hypothesis testing outlined in Table 5 reveal significant insights into the dynamics of lecturers' quality, prompt feedback, student satisfaction, and retention within the educational model under study. *Hypothesis 1 (H1)*, which examines the effect of lecturers' quality on retention, shows a beta of 0.219 with a t-statistic of 4.702 and a p-value of 0.000, leading to its acceptance. This suggests that the quality of lecturers has a positive and significant impact on students' retention. Similarly, *Hypothesis 2 (H2)* evaluates the impact of lecturers' quality on satisfaction, yielding a beta of 0.339, a t-statistic of 6.331, and a p-value of 0.000, resulting in acceptance. This indicates that higher lecturer quality significantly enhances student satisfaction. *Hypothesis 3 (H3)* explores the mediating role of satisfaction in the relationship between lecturers' quality and retention, with a beta of 0.163, a t-statistic of 5.355, and a p-value of 0.000, thus accepted. This further confirms that satisfaction effectively mediates this relationship, enhancing retention indirectly through improved satisfaction from lecturer quality.

 In contrast, *Hypothesis 4 (H4)*, regarding the direct effect of prompt feedback on retention, yielded a beta of 0.103 with a t-statistic of 1.902 and a p-value of 0.057, leading to its rejection due to lack of statistical significance at the conventional levels. This suggests that prompt feedback alone may not significantly influence retention without considering other factors. On the other hand, *Hypothesis 5 (H5)*, which links prompt feedback to satisfaction, shows a beta of 0.221, a t-statistic of 4.138, and a p-value of 0.000, affirming its acceptance and indicating that prompt feedback significantly enhances satisfaction. *Hypothesis 6 (H6)* examines the direct impact of satisfaction on retention, showing a strong positive relationship with a beta of 0.481, a high t-statistic of 10.498, and a p-value of 0.000, resulting in its acceptance. This underscores satisfaction as a crucial determinant of retention. Finally, *Hypothesis 7 (H7)* evaluates the indirect effect of prompt feedback on retention through satisfaction, with a beta of 0.107, a t-statistic of 3.700, and a p-value of 0.000, leading to its acceptance. This highlights that even though prompt feedback does not directly affect

retention, it significantly contributes to retention when mediated by satisfaction. Overall, these findings emphasize the integral roles of lecturer quality and prompt feedback in driving student retention, primarily through their influence on satisfaction.

The effect sizes (f^2), evaluated independently of sample size, follow Cohen's criteria (1992), which classifies them as small (0.020 to 0.150), medium (0.150 to 0.350), or large (0.350 or greater). This study's observed effect sizes ranged from small (0.012) to large (0.319). According to Table 5, the Variance Inflation Factor (VIF) values were all below the lenient threshold of 5, with the highest value being 1.809. This acceptable level of collinearity allows for meaningful comparisons and interpretation of coefficients within the structural model. A noteworthy degree of explained variance for the endogenous construct is apparent, with an R^2 value of 0.462 (Figure 1). Concerning the mediator, the model explained approximately 25.8% of the variance in the structure, as indicated by an R^2 value of 0.258.

Table 5
Hypotheses Testing Results, f^2 & Variance Inflation Factor (VIF)

Hypotheses	Beta	T statistics	P values	f^2	VIF	2.50%	97.50%	Decision
H1: LQ -> RET	0.219	4.702	0.000	0.049	1.809	0.126	0.308	*Accepted*
H2: LQ -> SAT	0.339	6.331	0.000	0.094	1.655	0.220	0.434	*Accepted*
H3: LQ -> SAT -> RET	0.163	5.355	0.000			0.104	0.223	*Accepted*
H4: PFF -> RET	0.103	1.902	0.057	0.012	1.721	-0.002	0.214	*Rejected*
H5: PFF -> SAT	0.221	4.138	0.000	0.040	1.655	0.115	0.324	*Accepted*
H6: SAT -> RET	0.481	10.498	0.000	0.319	1.348	0.391	0.570	*Accepted*
H7: PFF -> SAT -> RET	0.107	3.700	0.000			0.053	0.165	*Accepted*

Significance Level p<0.05

The model's inference and management recommendations were evaluated through an out-of-sample predictive analysis using the PLSpredict method, as introduced by Shmueli et al. (2016, 2019). As shown in Table 6, PLS-SEM offered superior Q^2 predictions (>0) when compared to naive mean predictions and consistently demonstrated lower RMSE values than those of linear model (LM) benchmarks, signifying its strong predictive power. Additionally, in seven out of nine instances, the RMSE values for PLS-SEM predictions were less than those of the linear model benchmark, underscoring the model's predictive capability as illustrated in Table 6. Notably, the Cross-Validated Predictive Ability Test (CVPAT), as introduced by Hair et al. (2022), and its application alongside PLSpredict analysis by Liengaard et al. (2021), deserves attention. Table 7 further confirms PLS-SEM's superior predictive abilities, revealing lower average loss values than indicator averages and LM benchmarks, demonstrating enhanced predictive performance.

Table 6
PLSpredicts

	Q²predict	PLS-RMSE	LM_RMSE	PLS-LM
RET1	0.267	0.647	0.643	0.004
RET2	0.189	0.643	0.647	-0.004
RET3	0.198	0.700	0.702	-0.002
RET4	0.074	0.758	0.760	-0.002
SAT1	0.189	0.633	0.634	-0.001
SAT2	0.178	0.636	0.640	-0.004
SAT3	0.131	0.678	0.677	0.001
SAT4	0.121	0.689	0.695	-0.006
SAT5	0.152	0.631	0.634	-0.003

Table 7
Cross-Validated Predictive Ability Test

	Average loss difference	t-value	p-value
RET	-0.104	5.474	0.000
SAT	-0.078	4.918	0.000
Overall	-0.089	6.161	0.000

Ringle and Sarstedt (2016), and Hair et al (2018), proposed Importance Performance Map Analysis (IPMA) to assess latent variable significance and effectiveness in explaining acceptance, as detailed in Table 8. The overall impact on students' retention was most pronounced for students' satisfaction (0.481), followed by lecturers' quality (0.382) and prompt feedback (0.210), indicating their relative importance in students' retention. Prompt feedback scored highest (66.931), while students' satisfaction scored lowest (61.232) on a 0-100 scale, reflecting better performance by prompt feedback and lower achievement for students' satisfaction. Despite ranking first in students' retention importance, the students' satisfaction displayed the lowest performance. These results suggest prioritizing activities to improve students' satisfaction among the students, potentially enhancing overall student retention in open online flexible distance learning higher education institutions.

Table 8
Importance-Performance Map Analysis (IPMA)

	Total Effect	Performance
LQ	0.382	66.426
PFF	0.210	66.931
SAT	0.481	61.232

Discussion & Conclusion
Discussion
Prompt feedback and lecturers' quality can significantly influence students' retention positively and effectively by leveraging students' satisfaction as a crucial mediator. Prompt feedback, with a beta of 0.221 indicating its direct effect on satisfaction, is an essential mechanism for providing students with timely responses to their inquiries and assessments, ensuring that students feel acknowledged and understood. This immediacy fosters a supportive learning environment where students can quickly rectify mistakes, feel more

connected to the course material, and stay engaged in their academic pursuits (McNair & Keza, 2023). Furthermore, the quality of lecturers, with a beta of 0.339 highlighting its impact on satisfaction, plays a pivotal role in impacting students' satisfaction and retention. Lecturers who demonstrate expertise, empathy, and effective communication skills create an inclusive and motivating atmosphere that boosts student confidence and satisfaction (Jang et al., 2022). When students perceive their lecturers as competent and invested in their success, it enhances their overall educational experience and strengthens their commitment to completing their studies. Satisfaction, with a beta of 0.481 for its effect on retention, is a powerful intermediary in this dynamic. A high level of satisfaction derived from prompt feedback and exceptional lecturers leads to a heightened sense of academic fulfillment and loyalty to the institution (Chen & Yang, 2023). Satisfied students are likelier to persist through challenges and remain in their programs. Institutions can capitalize on this strategy by implementing structured feedback systems and investing in the continuous professional development of lecturers to ensure high teaching quality. This holistic approach nurtures students' academic growth and solidifies their emotional connection to their educational journey, ultimately driving higher retention rates. By prioritizing students' satisfaction, educational institutions can create a feedback loop that links promptness, quality, satisfaction, and retention in a seamless cycle of success.

Theoretical Implications
The study's findings on prompt feedback and lecturers' quality, with student satisfaction as a mediator, provide significant theoretical implications, particularly when connected to the Self-Determination Theory (SDT) proposed by Deci and Ryan (2000). SDT emphasizes the importance of fulfilling individuals' intrinsic needs for autonomy, competence, and relatedness to foster motivation and psychological well-being. The study highlights how prompt feedback and high-quality teaching can directly influence students' satisfaction and retention, functioning as mechanisms that satisfy these core needs identified by SDT. Prompt feedback can enhance students' sense of competence by providing timely information that helps students assess their understanding and progress. By receiving prompt responses, students can quickly learn from mistakes, reaffirming their ability to succeed academically. Furthermore, quality lecturers enhance students' relatedness, creating a supportive educational environment where students feel valued and connected. As lecturers effectively communicate and demonstrate genuine concern for student development, they foster a sense of belonging and relatedness, which is critical in SDT. Additionally, student satisfaction as a mediating factor aligns with the need for autonomy posited by SDT. When students feel satisfied, they likely perceive that their educational environment supports personal agency and choice, further fueling intrinsic motivation. Therefore, by integrating SDT into interpreting these findings, educators can better understand the psychological processes that link instructional strategies to student retention. This alignment emphasizes the importance of catering to students' psychological needs to enhance academic satisfaction and retention and promote broader well-being and motivation through a supportive educational framework.

Practical Implications
The study's results delineate several practical implications for educational institutions aiming to boost student retention through enhanced instructional strategies. By demonstrating the importance of prompt feedback and lecturer quality in fostering student satisfaction and

retention, the study provides actionable insights for administrators and faculty alike. First and foremost, institutions should prioritize the implementation of effective feedback systems. Prompt feedback mechanisms can be integrated into digital learning platforms, ensuring students receive timely input on assignments and assessments. This helps students improve their understanding and performance and enhances their overall satisfaction by showing that their educational progress is valued and supported. Moreover, the findings underscore the significance of investing in the professional development of lecturers. Institutions should offer training programs that promote pedagogical best practices, emotional intelligence, and communication skills, thereby equipping lecturers to create more engaging and supportive learning environments. High-quality teaching can directly increase student satisfaction, as competent and empathetic lecturers are more likely to meet students' academic and emotional needs. Furthermore, educational leaders should consider policies that foster a culture of continuous improvement and feedback among faculty and students. By encouraging an open dialogue about teaching practices and student experiences, institutions can adapt and evolve their instructional strategies to better address the needs of their student body.

Suggestions for Future Study
Based on the study's findings, future research could explore several promising avenues to enhance the understanding of factors influencing student retention. One suggestion is to investigate the role of technological advancements in delivering prompt feedback and how innovative digital tools can be integrated into existing educational frameworks to improve student satisfaction and retention further. Additionally, longitudinal studies could be conducted to assess the long-term impacts of continuous improvements in lecturer quality and feedback mechanisms on retention rates across diverse demographic and institutional contexts. It would also be valuable to examine the potential moderating effects of different student characteristics, such as learning styles or cultural backgrounds, on the relationships between feedback, lecturer quality, satisfaction, and retention. Furthermore, qualitative studies involving in-depth interviews with students could provide richer insights into personal experiences and perceptions, enabling a more nuanced understanding of how these factors interact to influence retention.

Conclusion
the study underscores the critical roles that prompt feedback and lecturers' quality play in enhancing student retention, with student satisfaction as a pivotal mediator in this relationship. The findings demonstrate that while prompt feedback and high-quality teaching directly contribute to increased satisfaction, their impact on retention is significantly mediated by how satisfied students feel with their educational experiences. Notably, the study identified that satisfaction, driven by these two factors, substantially influences students' persistence in their programs. This indicates that educational institutions aiming to improve retention rates should focus on implementing effective feedback mechanisms and investing in lecturer development to maximize student satisfaction. By addressing these areas, institutions can foster a supportive learning environment that meets students' academic and emotional needs and encourages long-term engagement and commitment. The insights gained from this research provide a strategic framework for educational practices to cultivate sustained student success and institutional growth.

References

Ashby, A. (2004) Monitoring student retention in the Open University: definition, measurement, interpretation and action, Open Learning: *The Journal of Open, Distance and e-Learning*, 19:1, 65-77, DOI: 10.1080/0268051042000177854

Al-Samarrai, S. (2022). The impact of online learning on higher education in the post-COVID-19 era. *International Journal of Educational Development Using Information and Communication Technology*, 17(2), 189-202.

Alsawaqfeh, N., & Lin, F. (2021). The relationship between student satisfaction and student retention in online learning environments: A meta-analysis review. *Educational Technology Research and Development*, 69(3), 825-842.

Aydin, H., & Kaya, A. (2021). The role of lecturer satisfaction and quality in predicting the academic success and retention rates of university students. *Journal of Educational Research*, 115(2), 163-174. https://doi.org/10.1080/00220671.2021.1879484

Bangert, A. W. (2004). The seven principles of good practice: A framework for evaluating online teaching. *The Internet and Higher Education*, 7(3), 217–232.

Bates, T. (2019). *Teaching in a digital age: Guidelines for designing teaching and learning*. BCcampus Open Education.

Bernard, R. M., Abrahamson, L., McNair, L. D., Joyce, A. C., & Sanford, Z. L. (2020). The online learning environment and student engagement: A review of the literature. *Journal of Online Learning Research*, 6(3), 129-155.

Butt, S., Mahmood, A., & Saleem, S. (2022). The role of institutional factors and cognitive absorption on students' satisfaction and performance in online learning during COVID 19. *PLoS One*, *17*(6), e0269609.

Chen, X., & Yang, J. (2023). Reexamining the factors influencing student retention in online education: A structural equation modeling approach. *Studies in Educational Evaluation*, 88, 100922.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227-268.

Ekanem, I. E., & Igwe, E. U. (2020). Factors Influencing Students' Retention in Higher Education Institutions in Developing Countries: A Review of Literature. Journal of Educational Technology & Development Exchange (JETDE), 11(2), 22-35.

Fredricks, J. A., Hofkens, T., & Van Petegem, P. (2023). Student motivation and engagement in online learning environments: A meta-analysis. *Review of Educational Research*, 93(2), 313-348.

Gonzalez, G., & Lambert, S. (2022). Lecturer quality and its impact on student satisfaction and retention in higher education. *International Journal of Educational Development*, 84, 102-123. https://doi.org/10.1016/j.ijedudev.2021.102123

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). Thousand Oaks, CA: SAGE.

Hair, J. F., M. Sarstedt, C.M. Ringle, and S. P. Gudergan. (2018). *Advanced issues in partial least squares structural equation modeling.* Thousand Oakes, CA: Sage Publications

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM) (3 ed.).* Thousand Oaks, CA: Sage.

Harrison, C., & Weiner, L. (2023). Analyzing the mediating role of lecturer engagement on the relationship between job satisfaction and retention. *Higher Education Research & Development*, 42(1), 35-53. https://doi.org/10.1080/07294360.2022.2125484

Hassan, S., Shamsudin, M. F., Hasim, M. A., Mustapha, I., Buang, R. R., & Wahab, M. I. A. (2020). Empirical study on student satisfaction as mediator between service quality and student loyalty in tvet hlis. *Journal of Critical Reviews*, *7*(8), 122-126.

Henseler, J., Ringle, C. M., and Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling, *Journal of the Academy of Marketing Science*, 43(1): 115-135.

Jain, A., Sharma, P., & Meher, J. R. (2023). Effects of online platforms on learner's satisfaction: a serial mediation analysis with instructor presence and student engagement. *The International Journal of Information and Learning Technology*, *40*(5), 453-466.

Jang, H., Kim, N., & Kim, Y. (2022). The effects of self-determination and self-efficacy on online learning engagement: A moderated mediation model. *Sustainability*, 14(11), 6949.

Kebah, M., Raju, V., & Osman, Z. (2019). Growth of online purchase in Saudi Arabia retail industry. *International Journal of Recent Technology and Engineering*, 8(3), 869-872.. ISSN: 2277-3878

Kebah, M., Raju, V., & Osman, Z. (2019). Online purchasing trend in the retail industry in Saudi. *International Journal of Recent Technology and Engineering (IJRTE)*, 8(3), 865-868. ISSN: 2277-3878

Kock, N., & Lynn, G.S. (2012). Lateral collinearity and misleading results in variance-based SEM: An illustration and recommendations. *Journal of the Association for Information Systems*, 13(7), 546-580.

Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration*, 11(4), 1-10.

Lai, C., & Hwang, G. (2023). Examining the effects of online learning environment, self-determination, and self-efficacy on students' engagement in higher education. *International Journal of Educational Technology in Higher Education*, 20(1), 1-19.

Larson, J., & Richards, M. (2020). Institutional support, lecturer satisfaction, and the outcomes on retention in higher education. *Journal of Higher Education Policy and Management*, 42(6), 601-618. https://doi.org/10.1080/1360080X.2020.1791002

Leoparjo, F., Harianto, E., Mas'ud, R., Ilyas, G. B., & Hasanah, Y. N. (2023). Assessing The Effect of Learning Service Quality on Customer Retention Through Customer Satisfaction as Mediation Variable in The Culinary Study Program Bachelor Degree During The Covid-19 Pandemic.

Li, X. T., Rahman, A., Connie, G., & Osman, Z. (2020). Examining customers' perception of electronic shopping mall's e-service quality. *International Journal of Services, Economics and Management*, 11(4), 329-346.

Liengaard, B. D., Sharma, P. N., Hult, G. T. M., Jensen, M. B., Sarstedt, M., Hair, J. F., & Ringle, C. M. (2021). Prediction: Coveted, Yet Forsaken? Introducing a Cross-validated Predictive Ability Test in Partial Least Squares Path Modeling. *Decision Sciences*, 52(2), 362-392.

McNair, T. L., & Kezar, A. (2023). The Long-Term Impacts of First-Year Seminar Programs on Student Satisfaction and Retention. Journal of Higher Education, 94(1), 98-127.

Memon, M. Q., Lu, Y., Memon, A. R., Memon, A., Munshi, P., & Shah, S. F. A. (2022). Does the impact of technology sustain students' satisfaction, academic and functional performance: an analysis via interactive and self-regulated learning?. *Sustainability*, *14*(12), 7226.

Moore, M. G., Dickson-Deane, C., & Gery, G. (2011). *Distance education: Learning and teaching in a connected world*. Cengage Learning.

Nash, K., & McKenzie, K. (2022). The effect of professional development on lecturer quality, job satisfaction, and retention. *Teaching in Higher Education*, 27(5), 581-596. https://doi.org/10.1080/13562517.2021.1954032

Osman, Z., Mohamad, W., Mohamad, R. K., Mohamad, L., & Sulaiman, T. F. T. (2018). Enhancing students' academic performance in Malaysian online distance learning institutions. *Asia Pacific Journal of Educators and Education*, 33, 19-28.

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research*. Jossey-Bass.

Ringle, C.M., and M. Sarstedt. (2016). Gain more insight from your PLS-SEM results: The importance-performance map analysis. *Industrial Management & Data Systems.* 116: 1865–1886.

Ringle, Christian M., Wende, Sven, & Becker, Jan-Michael. (2022). SmartPLS 4. *Oststeinbek*: SmartPLS. Retrieved from https://www.smartpls.com

Rovai, A. P. (2022). Self-directed learning and academic success in online learning environments. *International Journal of Self-Directed Learning*, 17(1), 1-23.

Sharif Nia, H., Marôco, J., She, L., Khoshnavay Fomani, F., Rahmatpour, P., Stepanovic Ilic, I., ... & Reardon, J. (2023). Student satisfaction and academic efficacy during online learning with the mediating effect of student engagement: A multi-country study. *Plos one*, *18*(10), e0285315.

Shmueli, G., S. Ray, J.M. Velasquez Estrada, and S.B. Chatla. (2016). The elephant in the room: predictive performance of PLS models. *Journal of Business Research*, 69: 4552–4564.

Shmueli, G., M. Sarstedt, J.F. Hair, J.-H. Cheah, H. Ting, S. Vaithilingam, and C.M. Ringle. (2019). Predictive model assessment in PLS-SEM: Guidelines for using PLSpredict. *European Journal of Marketing*. 53: 2322–2347.

Turner, H., & Robinson, P. (2023). Exploring the link between lecturer satisfaction, teaching quality, and student retention in universities. *Journal of Educational Administration and History*, 55(2), 123-139. https://doi.org/10.1080/00220620.2022.2159021

Vansteenkiste, M., Ryan, R. M., & Deci, E. L. (2020). On the edges of self-determination in educational contexts: The interplay of autonomy, competence, and relatedness with engagement. *Educational Psychologist*, 55(2), 104-124.

Wang, Y., Hao, W., & Liu, X. (2020). The influence of perceived organizational support on job satisfaction and turnover intention among university employees in China. *Educational Management Administration & Leadership*, 48(3), 516-534.

Xu, D., & Jaggars, S. S. (2021). Examining the role of feedback in online courses: A multilevel analysis. *Journal of Educational Psychology*, 113(4), 882-897.