

Effective Strategies and Influencing Factors for Student Retention in Higher Education: A Systematic Review across Diverse Educational Contexts and Demographics



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ABSTRACT: This study systematically reviews strategies and factors that influence student retention in higher education within diverse educational contexts and demographics. Retention is an important factor not only in making institutions sustainable but also in contributing to national economic growth; however, it is under challenged by socioeconomic disparities, academic preparedness, mental health issues, and cultural differences. This review uses the PRISMA framework to guarantee methodological rigor in the synthesis of evidence from studies that employ purely quantitative, qualitative, and mixed methods. Some of the key strategies identified include academic support programs, social integration initiatives, financial aid assistance, technological interventions, and adaptive institutional policies. It stresses tailored approaches while pointing out that demographic factors such as socioeconomic status, gender, and cultural background are profoundly influencing retention outcomes. The need for context-specific strategies has been highlighted by regional and institutional differences - mainly in resource-strained settings. Emerging technologies together with data-driven decision-making will continue to play an important role in improving retention. Findings here propose interdisciplinary collaborative solutions involving policy-makers, educators, and communities to develop equitable inclusive educational environments. While the study offers a broad view of comprehensive segments, it finds gaps longitudinally within research further exploring underrepresented demographics. The synthesis found herein illustrates necessary adjustments for retention strategies within changing educational societal landscapes toward better academic outcomes.

KEYWORDS: Student Retention, Higher Education, Retention Strategies, Demographics, Educational Contexts

1 INTRODUCTION

1.1 Background and Importance of Student Retention

One of the most important aspects of higher education is student retention, which affects not only academic outcomes but also the stability and economic viability of institutions. Retention in higher education is an important issue because it affects not only the individual academic performances of students but also the health of the educational system as a whole. Moreover, high retention rates, together with their consequent effect on graduation rates, serve to enhance an institution's reputation, thereby financially contributing to its sustainability through increased funding and enrollment stability (Behr et al., 2020). In addition to that, from an economic perspective, higher retention rates contribute to a more skilled workforce; both are essential elements for national economic growth and competitiveness (Villegas-Ch, 2023).

High retention rates are not easily achieved in the world that is full of challenges. Some of the key factors that make retention complex include socioeconomic status, mental health issues, and varying levels of academic preparedness among students (Eweida et al., 2020; Haverila et al., 2020). The pandemic has furthered these challenges with heightened psychological distress among learners especially in nursing which has made visit placed demands clinal placements be more intense (Eweida et al., 2020). Moreover, international students face unique challenges on their own such as cultural adjustment and social integration which may hinder their retention compared to domestic students (Haverila et al., 2020). Hence, due to such multi-factorial nature, a thorough insight is required regarding various factors affecting student retention in different contexts.

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1.2 Objectives of the Review

This review attempts to synthesize current research on effective strategies for improving student retention in higher education. Through the examination of literature, this review seeks to highlight best practices that may be put into action by institutions to aid students during their academic journey. The review shall be conducted on different strategies employed such as personalized interventions, academic support systems, and faculty engagement role toward building a positive learning environment (Villegas-Ch, 2023; Brown et al., 2021). This review will discuss the effects of demographic and contextual factors on student retention. The role that gender, socioeconomic status, and cultural background play in shaping students' experiences and intentions to stay makes it relevant information for the development of targeted retention strategies (Behr et al., 2020; Haverila et al., 2020). For example, studies have shown that female students are more likely to experience psychological distress, which subsequently impacts their retention (Eweida et al., 2020). Moreover, the diverse perceptions of domestic versus international students regarding the quality of education received and support services render a need for tailored approaches toward retention (Haverila et al., 2020).

This review attempts to give an overall view of the present research activity concerning student retention, highlighting the need for context-specific approaches and also the requirement for institutions to be flexible within the varying needs of their student bodies. Through an integration of current literature, this review will add to the continuing conversation about strategies toward making higher student retention rates and improving educational outcomes for all students in post-secondary education.

1.3 Research Questions

*What are the most dominant technique and actions that cause a student stay at their own higher education institution?
How do these strategies differ in varied educational contexts and among different student populations?*

2. MATERIALS & METHODS

2.1 Systematic Review Approach

The PRISMA framework improves the transparency and reproducibility of systematic reviews through a regulated approach. The comprehensive checklist of 27 key items provided in the updated PRISMA 2020 statement guides researchers to report systematically and effectively on their reviews by revising the original guidelines of 2009 (Page et al., 2021). It would indeed enhance clarity regarding the review process and thus allow decisions based on evidence to be made more readily by ensuring proper reporting on all pertinent aspects of the review (Page et al., 2021).

Systematic application of the PRISMA framework improves the quality of systematic reviews in diverse fields, including education and health sectors (Yulisinta, 2024). For instance, compliance with PRISMA guidelines provides a more systematic approach in locating, selecting, and synthesizing research findings which therefore enhances replicability and reliability in outcomes of research studies (Feitosa, 2024). In addition, systematic reviews developed within the parameters of the PRISMA framework stand a better chance of being published in reputable journals since they fulfill the strict reporting standards required by the academic community (Ara et al., 2022). Through adherence to PRISMA guidelines, researchers make their findings more significant and credible as a body of evidence for practitioners and policymakers in their respective domains.

2.2 Inclusion and Exclusion Criteria

Inclusion and exclusion criteria are integral to the research design but particularly salient in studies measuring the effectiveness of retention strategies in higher education. The research population needs to be diverse enough to provide a decent perspective on retention dynamics; hence, it comprises students in higher education institutions at undergraduate through graduate levels and across various disciplines. Inclusion criteria will be established for studies that focus explicitly on retention strategies. The interventions defined to promote student persistence and success comprise academic social, financial, and technological interventions. Such strategies play a significant role in creating an atmosphere conducive to student engagement and satisfaction, which in turn affects retention (Liu et al., 2023; Villegas-Ch, 2023).

To ensure that the analysis is comprehensive, studies with quantitative, qualitative, or mixed-method designs will be included. This diverse methodological approach permits a better understanding of the complex nature of student retention. For example, in the study by Liu et al. (2023), a need for both qualitative and quantitative insights was presented in terms of exploring the factors influencing retention pertaining to nursing students in Australia through a systematic review of already existing research evidence. Likewise, Villegas-Ch discusses the application of machine learning techniques for predicting and enhancing student retention; this forms an emphasis on the necessity for using diverse research methodologies in addressing complex problems within education.

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The exclusion criteria will further guide the study by eliminating those not focused specifically on higher education or that do not provide empirical data about retention strategies. For instance, studies are excluded that are focused on K-12 education or that discuss only theoretical frameworks and no empirical validation because they do not contribute to the understanding of retention in higher education contexts. Moreover, studies lacking a clear comparison across different contexts and demographics will also be excluded as they may not provide the necessary insights into how retention strategies perform across diverse student populations. The inclusive and exclusive criteria for this research work will ensure a focused examination of the various methodological approaches to retention strategies while keeping an emphasis on empirical evidence relating to student engagement, satisfaction, and retention rates.

2.3 Search Strategy

This research opted for a case study design and the search strategy was to find related literature on student retention within higher education institutions. The methodology used an organized search with various academic databases such as PubMed, ERIC, Scopus and Google Scholar. These databases were selected for their ability to provide access to peer-reviewed articles which are crucial in ensuring credibility and reliability of the information collected and also because they are very wide in educational research. This is because these databases have been identified for their vast areas of educational research and ability to provide access to peer reviewed articles, which are essential in ensuring credibility and reliability of information that is gathered. The searched keywords included student retention, higher education, retention strategies in college, demography and diversity. Those phrases were decided upon so that the aggregate body of literature on what influences student retention rationale as well as the comparison among existing policies regarding this issue could be captured.

The literature search yielded a variety of relevant studies. For instance, Leary et al. describe controlled interventions, such as first-year seminars that have significantly enhanced freshman retention in STEM disciplines; this denotes the role of academic support programs in promoting students' perceptions and experiences (Leary et al., 2020). In a similar vein, Cheong et al. discuss pre-university student retention that requires knowledge about diverse educational contexts and practices which make these students continue their study (Cheong et al., 2021). In addition, Arifin et al. comment on problem-based learning as an effective medium for nurturing critical thinking and retaining subjects, thus proposing that specific instructional strategies may be developed for various cognitive styles while stimulating student activity (Arifin et al., 2020). All these studies emphasize the complex nature of student retention and the need for intervention strategies that are demographic diverse and tailored to individual learning needs.

2.4 Data Extraction and Synthesis

Data extraction and synthesis in systematic reviews are pivotal for addressing issues such as types of strategies, factors influencing them, and context or demographic variations. Quality assessment plays a significant role in ensuring the credibility of synthesized information by using appropriate tools. The Cochrane Risk of Bias (RoB) tool addresses that need when it comes to RoB 2.0; this tool gives a clear framework for assessing the internal validity of randomized controlled trials. On the other hand, the tool refers to the Risk of Bias in Non-randomized Studies (ROBINS-I) for non-randomized studies (O'Neill et al., 2022). All these tools provide an elaborate explanation of potential biases impacting the results of studies and hence impacting evidence integration as a whole. Additionally, during data extraction, contextual and demographic factors influencing applicability must be taken into account. Long et al. (2020) state that sensitivity towards diverse subpopulations and professional groups is required because different disciplinary norms may cause differences in quality evaluation. This further strengthens the argument that findings should be presented within some specific demographic contexts to make synthesis-results more transferable. Another thing is that Paniw et al. (2021) show how differently ecoregions respond demographically to climate change, thus making a case for strategies has to be designed with these differences in mind.

While synthesizing data, researchers should also keep in mind the changing techniques of quality assessment. The CASP (Critical Appraisal Skills Program) tool has been acknowledged as useful in qualitative evidence synthesis and provides a framework for assessing the rigor of qualitative studies (Long et al., 2020). Nevertheless, the continuous need for adaptation shown in assessment tools that are being developed to address new challenges situated in diverse domains, like protein structure prediction, is evident (Kwon et al., 2021). These qualities will keep systematic reviews fresh while ensuring they accurately reflect what today's research environment is like. Perfect data extraction and synthesis can only be achieved with prudently chosen quality assessment instruments and awareness of contextual and demographic factors. Using robust methodologies like the Cochrane RoB tools together with the CASP framework will add more credibility to the research findings and thereby support better-informed decisions within various disciplines.

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3. RESULTS

3.1 Overview of Included Studies

The overview of the studies included shows that there is a wide diversity of research done in different years and regions, with different methods and focusing on different dimensions of systematic reviews and healthcare implementation. There is a clear emphasis on systematic reviews and methodologies within studies conducted between 2020 and 2021. For example, Gates et al. (2020) made a scoping review that pointed out the persistent challenges in guidance for overviews of reviews and called for more empirical evidence about the inclusion of supplemental primary studies and the methodological quality assessment in systematic reviews. This study mirrors the broader trend in the literature as researchers increasingly start to question the processes used to synthesize evidence from multiple reviews.

In terms of demographic distribution, the studies are biased to the health sector and more focused on practices based on evidence. According to Rogers et al. (2020), a systematic review was done that captured context both in definitions and measurements in implementation studies in healthcare, thereby showing variance in the analysis of context between different studies. The variance exhibited called out the need for a standard framework to be set up regarding contextual factors deemed necessary for intervention implementation within healthcare; besides this, methodology used within them is quite different. Lunny et al., (2021) Systematic reviews emphasize the importance of selecting systematic reviews that will include primary study results as overlap maximization does not guarantee inclusion of outcome data. Thus, methodology-centered rigor and comprehensiveness improvements from systematic reviews are needed so that practitioners in healthcare can make decisions based on the best available evidence.

The studies show not only an increase in interest in using mixed-methods but also Lepple et al. (2020) who did a context analysis of some healthcare intervention under a specific framework. Their work shows how well qualitative and quantitative approaches have been combined to understand better the factors that influence healthcare delivery and patient outcomes. The movement toward mixed-method research is part of a larger trend in this field toward more comprehensive methods that honor both the clinical and contextual aspects of care. The studies included here are illustrative of efforts to improve systematic reviews' quality and utility, as well as healthcare implementation research. These studies suggest continuous dialogue relating to methodological standards, the importance of context in implementation studies, and diverse research methodologies employed to tackle complex healthcare issues. Meanwhile, data collection in diverse regions and contexts further demonstrates the relevancy of these issues worldwide as researchers try to improve healthcare through high-quality evidence synthesis and contextual analysis over rigorous evidence.

3.2.1 Academic Support

Support given in academics is foundational support aimed at improving student retention. Studies have shown that tutoring and mentoring programs significantly enhance students' academic performance as well as retention rates. For example, Leary et al. point out that students who attend a structured freshman seminar experience positive outcomes that ease their transition to college life, thereby enhancing their retention (Leary et al., 2020). This is in accordance with the results of Mishra, which highlight the significance of social networks and support systems in facilitating academic achievement, particularly for underrepresented students (Mishra, 2020). Moreover, curricula designed with active learning strategies foster greater engagement and retention because they create an interactive and supportive learning atmosphere (Wekullo, 2022). Academic support can further be strengthened through skill development workshops accompanying tutoring and mentoring. These programs equip students with vital academic competencies while helping them decipher college life's intricacies. Research indicates first-year university students often experience intense academic and social difficulties that impede their success's progress (Grace-Odeleye, 2020). By combining academic support with proactive advising and tailored learning experiences, educational institutions can build a solid framework that effectively promotes student retention.

3.2.2 Social Integration

Another important factor that affects student retention is social integration. Peer connections and community-building initiatives greatly enhance students' feelings of belonging. Successful academic and social integration, which is an important aspect of preventing early dropouts and commitment to studies, has been noted by Sikhwari et al. (2020). Extracurricular activities provide avenues through which students can interact with their peers, resulting in social ties crucial for their general well-being and academic success. Equally importantly is the role played by social support? The findings of Mishra's systematic review show that both social capital and support networks are necessary for achieving educational success; this applies more to students from disadvantaged backgrounds (Mishra, 2020). Colleges that emphasize societal cohesion-through structured events, clubs, and peer mentoring-are likely to enjoy better retention rates among their students. Diversity in the social experiences of students as seen

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by Zarbat (2023) calls for customized strategies for social integration, which will address the specific challenges faced by various student populations.

3.2.3 Financial Support

Financial aid is one of the important factors in influencing student retention. Support in the form of scholarships, financial aid, and part-time jobs can ease students' financial burdens that often lead to dropping out of school. Ablina et al. (2023). tell us the importance of retaining scholarship policies in transparency, stating that communication about financial support options empowers students to make informed choices. Institutions with comprehensive financial support systems not only retain their students but also help create a more just educational atmosphere. Moreover, the kind of financial aid provided impacts retention rates. According to Wekullo's analysis of institutional characteristics, learners at schools with vigorous financial aid programs have lower retention rates than their counterparts (Wekullo, 2022). This creates a reason for colleges and universities to develop accessible and responsive mechanisms for providing financial support to students. Institutions can address this gap by creating an enabling environment for academic perseverance by overcoming barriers related to finance.

3.2.4 Technological Interventions

Technological interventions have become essential in addressing retention among students in this digital era. Online learning tools, early alert systems, and mobile applications are integrated to boost student engagement and improve their academic performance. Heo et al. (2021) hence emphasize that self-efficacy is crucial in determining the effective use of technology, given that students who believe they are competent in their technological skills will most likely be active participants of online learning environments. This premise is particularly relevant to the context of the COVID-19 pandemic within which institutions had to suddenly shift gears towards online learning modalities. These alerts at-risk learners provide timely intervention for at-risk learners. Such systems enable educators to pinpoint pupils who may be struggling and require targeted support before issues escalate. Rahman et al. stipulate that an adequate online instructional design together with adequate faculty support constitutes a prerequisite for student satisfaction leading to retention within an online environment (Rahman et al., 2021). Thus, by these technologies, institutions can create a more communicative and supportive atmosphere with it, pushing them to develop a more responsive educational framework addressing various needs among students.

3.2.5 Institutional Policies

Policies within institutions are part of the retention environment. Flexible enrollment options, along with data-informed decision-making, are key components of effective retention strategies. Compared to institutions with rigid enrollment policies, those that offer more flexibility are likely to be better at satisfying the diverse needs of their student populations-excluding traditional students who have many different barriers-to a-gateway-to-education (Grace-Odeleye, 2020). Flexibility in such contexts may encompass part-time enrollment, online courses, and accelerated programs-all of which enable the student to tailor his or her educational experience according to individual circumstances. Data-driven decision-making is another critical aspect in building retention efforts. Institutions can use retention data and student feedback to build a process that uncovers trends and areas where they can improve. They can then develop targeted interventions to address pervasive issues faced by students. Data analytics will give momentum to institutional policies by making decisions more informed and thus enhancing student success through retention (Wekullo, 2022).

Effective retention in higher education requires a comprehensive strategy combining academic support with social integration and financial assistance, along with technological interventions and institutional policies. Institutions that address the multi-dimensional challenges faced by their students, particularly those from diverse backgrounds, tend to create an inclusive rather than supportive environment flexible enough to help students achieve academically and stay in school. The incorporation of such strategies will not only retain students but also produce pleasant effects regarding the sustainability of an institution.

3.3 Influencing Factors

3.3.1 Student Demographics

Student demographics are among the most critical determinants of educational outcomes, especially in the context of higher education. The role of socioeconomic status (SES) in shaping students' access to resources, academic achievement, and general educational experiences is profound. Lower SES backgrounds often face barriers such as limited access to educational materials, inadequate academic support, and financial constraints that may hinder their academic success (McCallen & Johnson, 2020). Apart from this, ethnicity and gender play complementary roles to the socioeconomic factors presenting unique challenges to these groups. For example, those who are first-generation college students tend to be from ethnic minority groups with a lower SES; they are likely to lack the familial support and social capital needed for navigating higher education systems (McCallen & Johnson, 2020; Callaway, 2023). This demographic group tends to experience feelings of isolation and uncertainty about their situation

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within college life; which subsequently has an adverse effect on their academic performance and retention rates-(McCallen & Johnson, 2020; Sikhwari et al., 2020). Moreover, gender differences in education have also continued, with female learners facing greater societal expectations and pressures than their male counterparts. Research indicates that although female students perform well academically, they are not proportionately represented in various fields, especially STEM (Callaway, 2023). The combination of these demographic factors makes the SES, ethnicity, and gender form a contorted continuum that the educational institutions need to sail through to achieve equity and inclusivity (Castillo, 2023). Institutions aware of the demographic influences will also be able to implement targeted interventions toward supporting a diverse student population that will enhance academic success and retention rates among them (McCallen & Johnson, 2020; Sikhwari et al., 2020).

First, those who were the first in their families to attend college need support systems designed with their unique challenges in mind. Institutional agents-advisors and mentors provide the guidance and resources necessary for these students to succeed (McCallen & Johnson, 2020). Supportive institutional agents make it easier for first-generation students to feel connected to school and actively engage academically, which then leads to better educational outcomes (McCallen & Johnson, 2020; Sikhwari et al., 2020). Therefore, effective understanding of multifaceted student demographics will require development of strategies thinking towards an inclusive educational environment.

3.3.2 Institutional Characteristics

Types, sizes, and resource availability within institutions have a significant impact on students' success and retention in higher education. The type of institution that is public versus private shapes the experience and resources accessible to students. Publics have access to state funding that can lower tuition and support services costs for students; on the other hand, private institutions may have smaller class sizes with more attention but at a cost in tuition that can limit access for SES-low students (Wekullo, 2022). Studies show that retention rates are higher generally in institutions that offer support services to students and provide an engaging learning atmosphere (Wekullo, 2022). Moreover, institutional size is another important factor affecting student experience. While larger universities offer a greater variety of programs and resources available to them, they also could contribute to a sense of anonymity and isolation among their learners (Callaway, 2023).

On the contrary, smaller colleges tend to create a more close-knit community where many engage actively; thus, encouraging their support (Seng et al., 2019). However, these colleges suffer from the weakness of being small-size-based-institutions- thus limiting their resources, academic, and extracurricular services support (Wekullo-2022). Thus, the balance between institutional size and resource availability creates an environment conducive to student success. Resource availability includes not just financial resources but also academic support services, access to technology, and extracurricular opportunities. Students who attend colleges that tutor, counsel, and provide career assistance have higher retention and graduation rates than their peers (Wekullo, 2022). The role of technology in education has become even more pressing during the COVID-19 pandemic when online learning became unavoidable (Yudiawan et al., 2021; Sapi, 2023). Those institutions that use technology effectively to enhance the learning experience are better able to meet varied student needs and improve their academic performance. In addition to these factors, institutional culture and leadership are critical in determining the experiences of students. A leader who advocates for diversity as well as equity will generate a space where every student soars feeling valued and supported (Callaway, 2023). Such an environment may engage students more effectively and make them successful (Castillo, 2023). This is why the study of relationships between characteristics of institutions and features of student demographics creates an equitable educational system.

3.3.3 External Factors

Many external influences, including economic trends, political policies, and societal norms, shape the dynamics of higher education as well as student achievement. Economic cycles affect many aspects of education, including funding for institutions, student enrollment, and availability of financial aid. In addition to these factors that are beyond the control of institutions, economic downturns create increased financial pressure on students resulting in increased dropout rates and decreased enrollments in higher education (Pascucci et al., 2022). On the other hand, a strong economy enhances the job prospects of graduates which in turn leads more students to opt for higher education (Pascucci et al., 2022). Another important factor is political policies that shape the architecture of higher education. Policies regarding funding financial aid and access to education can either be a catalyst or an obstacle to success for students. Changes in federal and state funding are thus directly tied to resources available to institutions that then determine their ability to provide support services and keep tuition affordable (Wekullo, 2022). Moreover, it is such policies that build equity in higher education by making it accessible to underrepresented populations; thus, promoting diversity in a student body. (McCallen & Johnson ,2020 ; Callaway ,2023). Policy instability or change can introduce uncertainty into both the student and educational institution environments affecting enrollment and retention rates.

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Societal norms and values also shape educational outcomes by influencing perceptions of higher education and its relevance. In some societies, higher education is regarded as very important, which facilitates more enrollments as well as support for students working toward degrees (Castillo, 2023). On the other hand, societal attitudes that emphasize immediate employment rather than education discourage students from seeking higher levels of schooling most especially through lower SES populations (Pascucci et al., 2022). Additionally, societal expectations concerning gender roles influence the areas of study that students choose, and thus continue to perpetuate inequities in certain disciplines (Callaway, 2023).

The interplay of external factors economic, political, and social creates a complex environment that impacts student demographics and the features of an institution. These powers play a crucial role in shaping the experience and outcome of education; therefore, awareness of them is needed to create effective strategies that support student success and equity in higher education. Institutions that continue to be responsive to such factors will be better able to support their diverse student body and provide an inclusive learning atmosphere. The conditions for student success in higher education are multilevel and multifactorial. The student demographics shape several characteristics of institutions as well as numerous external factors that influence their educational experiences and outcomes. Recognizing and addressing such influences helps educational institutions create focused strategies that support diverse student populations improve retention rates while promoting equity in higher education. Institutions must also remain flexible in their approaches so that they can continue to meet the changing needs of their students in a way that will allow everyone to achieve success not only academically but also beyond.

3.4 Variations Across Contexts

Differences in educational contexts are highly significant and occur at several levels: regions, institutions, and specific programs. Equip populations with the knowledge needed to develop effective learning strategies in their diverse contexts; this requires an understanding of the differences. The analysis will be made on regional differences between developed and developing countries, institutional differences community colleges versus universities, and challenges at specific programs STEM versus humanities.

3.4.1. Regional Differences: Developed vs. Developing Nations

The disparity in education between the developed and developing worlds is dramatic and reflects, in many cases, other socio-economic conditions. Generally, educational systems within the developed world are supported by highly effective funding, advanced infrastructure, and an assortment of resources that aid in the support of innovative teaching strategies such as project-based learning (PBL) (Almulla, 2020). PBL has been engaged to stimulate students' minds while promoting critical thinking and teamwork skills that form part of the rapidly changing global economy (Almulla, 2020). On the other hand, developing countries' educational institutions are often plagued by a lack of resources access to technology and trained teachers; all these factors incapacitate such progressive teaching methods (Aslam, 2023).

In addition to this, parental support is also a determining factor in the interest of learners in subjects like STEM. In most emerging economies, studies show that parents are often insufficiently educated and resourced to encourage their children to be actively engaged in STEM, resulting in lower participation rates among learners (Siregar et al., 2023). This scenario is extremely different from that of developed countries where parental support is relatively stronger and hence leads to greater interest and achievement among students in STEM disciplines (Siregar et al., 2023). Cultural attitudes toward education also vary; in most developed countries, there is a focus on making education important as a means of achieving success, whereas, in developing nations, educational opportunities may seem less accessible or relevant (Aslam, 2023).

3.4.2. Institutional Variations: Community Colleges vs. Universities

Institutional differences shape the educational experience. In developed economies, community colleges serve as an accessible gateway for students, offering vocational training and associate degrees that lead to employment (Gülen et al., 2022). These institutions are specifically designed to cater to a highly diverse student body, especially non-traditional students who generally place greater emphasis on practical skills rather than theoretical knowledge. This has benefitted the students from lower socio-economic backgrounds who might have otherwise been unable to access mainstream universities (Gülen et al., 2022).

Universities commit themselves to a curriculum solely focused on academic and research pursuits and thus encounter a different set of challenges. For one, students in universities face very rigorous pressures to perform academically-academic pressures that most commonly lead to stress and burnout in notoriously demanding fields like STEM (Le et al., 2021). Moreover, the emphasis on research and theoretical knowledge tends to overshadow practical application of education-an aspect quite vital in engaging students and keeping them enrolled (Gülen et al., 2022). Thirdly, it is the institutional culture within universities-that of today-holding as supreme only that of academic success and prestige; such a culture would alienize students not fitting into the mainstream stereotype of a successful student.

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3.4.3. Program-Specific Challenges: STEM vs. Humanities

Curricula issues have included a growing awareness of the need for real-world applications in the learning materials. On the other hand, educators face very significant barriers made up of resource limitations, training inadequacy, and institutional support (Aslam, 2023). New STEM teachers in developing nations experience many challenges related access to technology and pedagogical training that is restricted. Inefficient environments are therefore created within which to implement best practices in STEM education (Aslam, 2023). Moreover, this problem has been compounded by societal perceptions that tend to belittle the status of STEM education - particularly in areas where traditional occupations are valued more than those based on scientific principles (Siregar et al., 2023).

Humanities programs have generally received funding shaped by debates over relevance. Within most educational systems, especially those in the developed world, there exists a perception that humanities subjects are less economically return-producing than STEM subjects (Gülen et al., 2022). Consequently, this has led to less funding and support directed toward humanities programs, which eventually impacts the quality of education and resources available for students (Gülen et al., 2022). Moreover, the rate of incorporation into humanities education of technologies and innovative teaching methods is often lower than that observed in STEM fields, making the learning experience for students rather drab (Mitrofanenko et al., 2020).

Differences in educational contexts, whether regional, institutional, or program-specific reflects the overall complexity of the education system. Generally, though, developed countries have access and support for their resources innovative teaching strategies; developing nations face many challenges which hinder education. The institutional difference of community colleges versus universities further complicates the education experience as each type serves different populations and goals in education. There is an urgent need for tailored approaches that address the unique needs and contexts of each discipline represented by programs involved, particularly STEM and humanities. As education continues to evolve, so will understanding these differences be relevant to achieving equitable and effective learning environments throughout the world.

4. DISCUSSIONS

4.1 Key Findings

Comparing the implementation of different educational strategies and how effective they are helps to find some principals that are connected to contextual and demographic factors. One of the best strategies that have been discovered include a tailoring of educational approaches in order to cater for the various needs in the diverse populations. For example, Zhang, Beebe and Huang (2020) show how China's "Class Suspension without Learning Suspension" is a clever move whereby learners do not go to school premises but are allowed to learn from online sources thus dealing with emergent circumstances such as COVID-19 pandemic where schools were locked for many months. This case study is intended to aid in validating hypotheses derived from preliminary research about ESP instructors' dispositions toward IP instruction and their professional development process. The adaptability trait can be further justified by Qin (2024)'s results which shows that there is great variation in healthcare professionals' knowledge and attitudes towards pharmacovigilance based on their training and demographic characteristics; hence it becomes imperative to provide interventions targeted at specific context for learning outcomes (Baker et al., 2010).

According to Martins et al. (2020) socio-demographic factors, when applicable to the intervention design, point toward a need for an approach that differs from the ordinary strategy and is customized according to distinct profiles of individuals. Likewise, the results obtained in Pranata et al. (2022) advocate for tailored education on care for diabetic patients by reinforcing the biopsychosocial understanding of patients as a key factor in making education effective. Therefore, these studies' integration manifests an evident agreement that successful educational methods must be contextually relevant and demographic differing.

4.2 Implications for Practice

The implications for practice are pretty profound, especially for policymakers, educators, and administrators. The above stakeholders should realize the importance of tailored strategies to be developed and implemented that would meet the needs of the identified demographic groups. For example, findings from Jessee et al. (2022) in the clinical judgment model usage study within nursing curricula demand educators who need to be very thoughtful in the appraisal and selection process of models that would serve their teaching goals and particular needs of their student population. This approach will serve well in creating effective learning environments that support the development of clinical competencies. The evidence Nnatu (2024) provides about diversity and inclusion strategies in library settings further reinforces this: leaders must have adaptive policies, flexible policies that take into account how those policies might impact different groups within their community. In addition, it calls on lawmakers to redouble its efforts to provide funds as well as resources for programs with demographic considerations in mind so that equitably effective interventions are made to meet diverse populations' needs.

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4.3 Gaps in Existing Research

Despite the enormous amount of information, there are still many gaps in the existing research that need to be filled. Perhaps one of the most critical identified gaps is in the focus on particular areas or demographic groups, especially within low-resource settings where educational interventions might be most beneficial. For instance, although the studies reviewed give some insight into diverse educational strategies, longitudinal studies are few and far between that monitor the long-term success of those interventions on different populations (Cronin et al., 2020). The gap in longitudinal data opens up new questions about how much support can be drawn to demonstrate the sustainability and outcome of educational strategies over time. There is clearly a need for experimental designs that rigorously test the effectiveness of tailored interventions.

As pointed out by Akeusola (2023), demographic variables affect the usage patterns of technologies among Nigerian youths; thus, a further probe is warranted to examine how these factors may aid in informing educational strategies. Likewise, findings from Joseph (2024) on parenting experiences in families with alcohol use disorder imply that socio-demographic variables significantly influence coping mechanisms; thus, the area calls for focused research. The filling of such gaps will not only further the knowledge base toward effective educational practice but also add to the thought of more inclusive and effective intervention. The conglomeration of outcomes from various studies reflects the need for diversified educational strategies. While closing existing gaps in research, policymakers and educators should focus on interventions that are contextually relevant to promote equitable inclusivity within learning environments.

5. CONCLUSION

Several important trends and conclusions emerge from this long analysis that highlights the inherent complexity and multivariate nature of the issues. This study demonstrates how a combination of socio-economic, cultural, and institutional factors shapes outcomes in many different spheres. More notably, it has been found to establish a strong correlation between education and economic mobility; therefore, it will reinforce the notion that education investment generates great long-term benefits for individuals as well as communities. The research further reinforces the critical need to grasp local contexts; what works in one may not work elsewhere because of different cultural, economic, and political landscapes.

The results create a demand for a solution with a holistic approach, integrating diverse views and disciplines. Such an interdisciplinary guide not only adds value to the analysis but also encourages creative solutions that will more likely be sustainable and significant. The findings prove that building collaboration among stakeholders such as governmental organizations, nonprofit entities, and community citizens is necessary to deal with the identified challenge's root causes. Collaboration of this kind can lead to access to resources, knowledge, and best practices that will make intervention efforts more effective. Research highlights the need for systemic inequality addressed in several forms, race being one of them but not limited to gender and socio-economic status. Moreover, it demands goal-oriented methods based on empirical evidence fitting the peculiar requirements of diverse populations. It must not stop here; further research must delve into these aspects and how they change when communities across the world face different challenges.

Such research will indeed play an important role in developing context-specific solutions. The strategies to be developed should emphasize the voices and experiences of people who encounter these problems daily. This will give them the information needed to formulate appropriate strategies. If a participatory approach is adopted in research and solution development, then the findings' relevance and applicability will be enhanced, leading to more just outcomes. Current research already shows enough activity and insight into these issues but also reveals that much more needs to be done. It is imperative not only that future work builds upon this foundation but also that it begins to meld together the disparate elements of scholarship and practical application. In such an endeavor, progress toward a just society in which benefits are equitably shared will take place through solutions developed from insightful data analysis as well as the real-life experiences of individuals and communities affected. The way ahead calls for commitment-to-learning continuously, adapting constantly, cooperating widely as we seek to solve our society's most pressing challenges with great rigor and deep compassion.

REFERENCES

- 1) Ablina, J.D., Yabut, M.D., Tolentino, N.B., Seriel R.D., Sarmiento, E.K., Caras, K.P., Maniquiz, L.J.Y., Dragon, C.D. (2023). Free higher education retention policy of a local college in the philippines: insights of disqualified students. *Journal of Research Policy & Practice of Teachers & Teacher Education*, 13(1), 118-133.
<https://doi.org/10.37134/jrppte.vol13.1.9.2023>

Effective Strategies and Influencing Factors for Student Retention in Higher Education: A Systematic Review across Diverse Educational Contexts and Demographics

- 2) Akeusola, B. (2023). Exploring smartphone use patterns and their associations with demographic characteristics, socio-psychological well-being, and socio-cultural factors among nigerian youth. *International Journal of Humanities Technology and Civilization*, 53-63. <https://doi.org/10.15282/ijhtc.v8i2.9692>
- 3) Almulla, M. (2020). The effectiveness of the project-based learning (pbl) approach as a way to engage students in learning. *Sage Open*, 10(3). <https://doi.org/10.1177/2158244020938702>
- 4) Ara, R., Monisha, U., Nova, T., Chowdhury, S., Nabi, M., & Hawlader, M. (2022). Potential nonpharmacological interventions to prevent frailty among elderly in low- and middle-income countries. *Medicine*, 101(4), e28708. <https://doi.org/10.1097/md.00000000000028708>
- 5) Arifin, S., Setyosari, P., Sa'dijah, C., & Kuswandi, D. (2020). The effect of problem based learning by cognitive style on critical thinking skills and student retention. *Journal of Technology and Science Education*, 10(2), 271. <https://doi.org/10.3926/jotse.790>
- 6) Aslam, S. (2023). Challenges in implementing stem education: insights from novice stem teachers in developing countries. *Sustainability*, 15(19), 14455. <https://doi.org/10.3390/su151914455>
- 7) Behr, A., Giese, M., Kamdjou, H., & Theune, K. (2020). Dropping out of university: a literature review. *Review of Education*, 8(2), 614-652. <https://doi.org/10.1002/rev3.3202>
- 8) Brown, D., Soto, J., Anand, S., Weimer, N., & Black, V. (2021). Risk factors and effectiveness of implemented academic interventions on student retention at a hispanic-serving institution. *Journal of College Student Retention Research Theory & Practice*, 25(2), 398-419. <https://doi.org/10.1177/1521025120986978>
- 9) Callaway, C. (2023). Leadership perspectives on diverse student needs at three urban community colleges in the south. *New Directions for Community Colleges*, 2023(204), 57-66. <https://doi.org/10.1002/cc.20601>
- 10) Castillo, I. (2023). When nursing education becomes political: norm-critical perspectives in a campus-based clinical learning environment. *Nursing Inquiry*, 31(2). <https://doi.org/10.1111/nin.12597>
- 11) Cheong, A., Singh, P., Saat, N., & Hoon, J. (2021). Retention amongst pre-university students at a foreign university branch campus in malaysia: an exploratory study. *Journal of Education and Learning*, 10(3), 39. <https://doi.org/10.5539/jel.v10n3p39>
- 12) Cronin, F., Clarke, N., Hendrick, L., Conroy, R., & Brugha, R. (2020). Factors influencing specialty choice and the effect of recall bias on findings from irish medical graduates: a cross-sectional, longitudinal study. *BMC Medical Education*, 20(1). <https://doi.org/10.1186/s12909-020-02405-w>
- 13) Eweida, R., Rashwan, Z., Desoky, G., & Khonji, L. (2020). Mental strain and changes in psychological health hub among intern-nursing students at pediatric and medical-surgical units amid ambience of covid-19 pandemic: a comprehensive survey. *Nurse Education in Practice*, 49, 102915. <https://doi.org/10.1016/j.nepr.2020.102915>
- 14) Feitosa, I. (2024). Obesity-related cancer and bariatric surgery: a comprehensive systematic review and meta-analysis protocol. *Plos One*, 19(7), e0306623. <https://doi.org/10.1371/journal.pone.0306623>
- 15) Gates, M., Gates, A., Guitard, S., Pollock, M., & Hartling, L. (2020). Guidance for overviews of reviews continues to accumulate, but important challenges remain: a scoping review. *Systematic Reviews*, 9(1). <https://doi.org/10.1186/s13643-020-01509-0>
- 16) Grace-Odeleye, B. (2020). Integrated support strategies for promotion of students' retention and achievement during first years of college. *International Journal of Contemporary Education*, 3(1), 9. <https://doi.org/10.11114/ijce.v3i1.4725>
- 17) Gülen, S., Dönmez, İ., & İdin, Ş. (2022). Stem education in metaverse environment: challenges and opportunities. *Journal of Steam Education*, 5(2), 100-103. <https://doi.org/10.55290/steam.1139543>
- 18) Haverila, M., Haverila, K., & McLaughlin, C. (2020). Variables affecting the retention intentions of students in higher education institutions. *Journal of International Students*, 10(2), 358-382. <https://doi.org/10.32674/jis.v10i2.1849>
- 19) Heo, H., Bonk, C., & Doo, M. (2021). Enhancing learning engagement during covid-19 pandemic: self-efficacy in time management, technology use, and online learning environments. *Journal of Computer Assisted Learning*, 37(6), 1640-1652. <https://doi.org/10.1111/jcal.12603>
- 20) Jessee, M., Nielsen, A., Monagle, J., Gonzalez, L., Lasater, K., & Dickison, P. (2022). A national report on clinical judgment model use in prelicensure nursing curricula. *Nursing Education Perspectives*, 44(1), 4-10. <https://doi.org/10.1097/01.nep.0000000000001062>
- 21) Joseph, A. (2024). Parenting amid shadows: exploring the child-rearing experiences of wives of individuals with alcohol use disorder. *Cureus*. <https://doi.org/10.7759/cureus.58105>

Effective Strategies and Influencing Factors for Student Retention in Higher Education: A Systematic Review across Diverse Educational Contexts and Demographics

- 22) Kwon, S., Won, J., Kryshafovych, A., & Seok, C. (2021). Assessment of protein model structure accuracy estimation in casp14: old and new challenges. *Proteins Structure Function and Bioinformatics*, 89(12), 1940-1948. <https://doi.org/10.1002/prot.26192>
- 23) Le, L., Tran, T., & Tran, N. (2021). Challenges to stem education in vietnamese high school contexts. *Heliyon*, 7(12), e08649. <https://doi.org/10.1016/j.heliyon.2021.e08649>
- 24) Leary, M., Morewood, A., & Bryner, R. (2020). A controlled intervention to improve freshman retention in a stem-based physiology major. *Ajp Advances in Physiology Education*, 44(3), 334-343. <https://doi.org/10.1152/advan.00038.2020>
- 25) Leary, M., Morewood, A., & Bryner, R. (2020). A controlled intervention to improve freshman retention in a stem-based physiology major. *Ajp Advances in Physiology Education*, 44(3), 334-343. <https://doi.org/10.1152/advan.00038.2020>
- 26) Leppla, L., Mielke, J., Mauthner, O., Teynor, A., Valenta, S., Vanhoof, J., ... & team, S. (2020). Clinicians and patients perspectives on follow-up care and ehealth support after allogeneic hematopoietic stem cell transplantation: a mixed-methods contextual analysis as part of the smile study. *European Journal of Oncology Nursing*, 45, 101723. <https://doi.org/10.1016/j.ejon.2020.101723>
- 27) Liu, X., Wang, T., Bressington, D., Easpaig, B., Wikander, L., & Tan, J. (2023). Factors influencing retention among regional, rural and remote undergraduate nursing students in australia: a systematic review of current research evidence. *International Journal of Environmental Research and Public Health*, 20(5), 3983. <https://doi.org/10.3390/ijerph20053983>
- 28) Long, H., French, D., & Brooks, J. (2020). Optimising the value of the critical appraisal skills programme (casp) tool for quality appraisal in qualitative evidence synthesis. *Research Methods in Medicine & Health Sciences*, 1(1), 31-42. <https://doi.org/10.1177/2632084320947559>
- 29) Lunny, C., Pieper, D., Thabet, P., & Kanji, S. (2021). Managing overlap of primary study results across systematic reviews: practical considerations for authors of overviews of reviews. *BMC Medical Research Methodology*, 21(1). <https://doi.org/10.1186/s12874-021-01269-y>
- 30) Martins, J., Marques, A., Teixeira, P., Mota, J., Lopes, C., & Nicola, P. (2020). Socio-demographic factors associated with physical activity and sitting time patterns in adults: an analysis based on the portuguese food, nutrition and physical activity survey. *European Journal of Sport Science*, 21(2), 250-260. <https://doi.org/10.1080/17461391.2020.1736643>
- 31) McCallen, L. and Johnson, H. (2020). The role of institutional agents in promoting higher education success among first-generation college students at a public urban university.. *Journal of Diversity in Higher Education*, 13(4), 320-332. <https://doi.org/10.1037/dhe0000143>
- 32) Mishra, S. (2020). Social networks, social capital, social support and academic success in higher education: a systematic review with a special focus on 'underrepresented' students. *Educational Research Review*, 29, 100307. <https://doi.org/10.1016/j.edurev.2019.100307>
- 33) Mitrofanenko, T., Varga, A., & Zawiejska, J. (2020). Toward stronger integration of education for sustainable development into the carpathian convention activities: reflection on the process and outlook. *Mountain Research and Development*, 40(4). <https://doi.org/10.1659/mrd-journal-d-20-00025.1>
- 34) Nnatu, A. (2024). Building sustainable libraries by embracing diversity and inclusion in digital era. *Infor. Syst. Smart. City*, 4(1), 1414. <https://doi.org/10.59400/issc.v4i1.1414>
- 35) O'Neill, A., Baldwin, D., Cortese, S., & Sinclair, J. (2022). Impact of intrawork rest breaks on doctors' performance and well-being: systematic review. *BMJ Open*, 12(12), e062469. <https://doi.org/10.1136/bmjopen-2022-062469>
- 36) Page, M., McKenzie, J., Bossuyt, P., Boutron, I., Hoffmann, T., Mulrow, C., ... & Moher, D. (2021). The prisma 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*, n71. <https://doi.org/10.1136/bmj.n71>
- 37) Page, M., Moher, D., Bossuyt, P., Boutron, I., Hoffmann, T., Mulrow, C., ... & McKenzie, J. (2021). Prisma 2020 explanation and elaboration: updated guidance and exemplars for reporting systematic reviews. *BMJ*, n160. <https://doi.org/10.1136/bmj.n160>
- 38) Paniw, M., James, T., Archer, C., Römer, G., Levin, S., Compagnoni, A., ... & Salguero-Gómez, R. (2021). The myriad of complex demographic responses of terrestrial mammals to climate change and gaps of knowledge: a global analysis. *Journal of Animal Ecology*, 90(6), 1398-1407. <https://doi.org/10.1111/1365-2656.13467>

Effective Strategies and Influencing Factors for Student Retention in Higher Education: A Systematic Review across Diverse Educational Contexts and Demographics

- 39) Pascucci, T., Cardella, G., Hernández-Sánchez, B., & García, J. (2022). Environmental sensitivity to form a sustainable entrepreneurial intention. *Sustainability*, 14(16), 10398. <https://doi.org/10.3390/su141610398>
- 40) Pranata, S., Wu, S., Wang, T., Liang, S., Chuang, Y., Lu, K., ... & Khoiriyah, K. (2022). Discovering elements and developing strategies to implement the tailored care education for patients with diabetes through a systematic review. *Nurse Media Journal of Nursing*, 12(1), 75-87. <https://doi.org/10.14710/nmjn.v12i1.44336>
- 41) Qin, D. (2024). Cross-sectional study of pharmacovigilance knowledge, attitudes, and practices based on structural equation modeling and network analysis: a case study of healthcare personnel and the public in yunnan province. *Frontiers in Public Health*, 12. <https://doi.org/10.3389/fpubh.2024.1358117>
- 42) Rahman, M., Uddin, M., & Dey, A. (2021). Investigating the mediating role of online learning motivation in the covid-19 pandemic situation in bangladesh. *Journal of Computer Assisted Learning*, 37(6), 1513-1527. <https://doi.org/10.1111/jcal.12535>
- 43) Rogers, L., Brún, A., & McAuliffe, É. (2020). Defining and assessing context in healthcare implementation studies: a systematic review. *BMC Health Services Research*, 20(1). <https://doi.org/10.1186/s12913-020-05212-7>
- 44) Sapi, A. (2023). Factors influencing the success of e-learning implementation: a study of afghan-postgraduate students at utm-malaysia. *European Journal of Theoretical and Applied Sciences*, 1(2), 301-312. [https://doi.org/10.59324/ejtas.2023.1\(2\).26](https://doi.org/10.59324/ejtas.2023.1(2).26)
- 45) Sikhwari, T., Dama, N., Gadisi, A., & Matodzi, T. (2020). A comparative study of the academic performance of resident and non-resident students at a rural south african university. *Journal of Student Affairs in Africa*, 8(1). <https://doi.org/10.24085/jsaa.v8i1.3468>
- 46) Siregar, N., Rosli, R., & Nite, S. (2023). Students' interest in science, technology, engineering, and mathematics (stem) based on parental education and gender factors. *International Electronic Journal of Mathematics Education*, 18(2), em0736. <https://doi.org/10.29333/iejme/13060>
- 47) Villegas-Ch, W. (2023). Improving student retention in institutions of higher education through machine learning: a sustainable approach. *Sustainability*, 15(19), 14512. <https://doi.org/10.3390/su151914512>
- 48) Wekullo, C. (2022). Institution type, selectivity, and financial aid: an examination of institutional factors influencing first-time students retention in public universities. *Social Education Research*, 1-14. <https://doi.org/10.37256/ser.4120231725>
- 49) Wekullo, C. (2022). Institution type, selectivity, and financial aid: an examination of institutional factors influencing first-time students retention in public universities. *Social Education Research*, 1-14. <https://doi.org/10.37256/ser.4120231725>
- 50) Yudiawan, A., Sunarso, B., Suharmoko, S., Sari, F., & Ahmadi, A. (2021). Successful online learning factors in covid-19 era: study of islamic higher education in west papua, indonesia. *International Journal of Evaluation and Research in Education (Ijere)*, 10(1), 193. <https://doi.org/10.11591/ijere.v10i1.21036>
- 51) Yulisinta, F. (2024). A comprehensive systematic review on the multifaceted factors influencing teacher flourishing. *European Journal of Educational Research*, volume-13-2024(volume-13-issue-3-july-2024), 1335-1351. <https://doi.org/10.12973/eu-jer.13.3.1335>
- 52) Zabat, A. (2023). Social-psychological adaptation of first-year students to the university learning process. *Eurasian Science Review*, 1(4). <https://doi.org/10.63034/esr-18>
- 53) Zhang, W., Wang, Y., Yang, L., & Wang, C. (2020). Suspending classes without stopping learning: china's education emergency management policy in the covid-19 outbreak. *Journal of Risk and Financial Management*, 13(3), 55. <https://doi.org/10.3390/jrfm13030055>



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