

Expectations and Experiences of Math Major Students in a Higher Education Institution

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ABSTRACT

This qualitative descriptive study examined the expectations and academic experiences of fourth-year Bachelor of Secondary Education major in Mathematics students in a private higher education institution in Quezon Province during Academic Year 2025–2026. It specifically explored school facilities and learning resources, quality of teaching, and institutional support and services, and used the findings to develop promotional strategies for increasing enrollment in the BSEd Mathematics program. All 22 fourth-year students participated through total enumeration and were organized into three focus group discussions composed of seven, eight, and seven participants. A validated focus group discussion guide was used, and the audio-recorded responses were transcribed verbatim, translated into

English, coded in NVivo, and analyzed thematically. Findings revealed that students entered the program expecting modern, well-maintained facilities, accessible digital and library resources, highly competent but approachable professors, organized administrative processes, transparent scholarship information, and consistent student support. Their actual experiences reflected both positive and negative disconfirmation. Students recognized continuing improvements in the library, computer laboratories, facilities, student portal, guidance services, and several instructors' mastery, clarity, real-life applications, and supportive relationships. However, they also reported restricted resource access, insufficient learning materials, inconsistent teaching attendance and delivery, excessive dependence on modules, occasional instructional inaccuracies, misalignment between instruction and assessment, record-keeping problems, delayed announcements, weak internship coordination, and limited pre-deployment preparation. The study concluded that enrollment promotion must be supported by genuine program improvement. A seven-part promotional and development framework was proposed, emphasizing faculty expertise, student testimonials, resource visibility, scholarship awareness, streamlined administrative processes, documented facility improvement, and career-readiness outcomes.

Keywords: *BSEd Mathematics, student expectations, student experiences, higher education, thematic analysis, enrollment promotion*

INTRODUCTION

Mathematics teacher education occupies a strategic position in developing analytical reasoning, problem-solving ability, and the pedagogical competence required for schools and other knowledge-intensive fields. International and national assessments continue to show persistent difficulties in mathematics learning, reinforcing the need for higher education institutions to prepare competent and motivated mathematics teachers. The TIMSS 2019 results placed the Philippines at the lower end of Grade 4 mathematics performance, while PISA 2022 likewise documented weak mathematics outcomes among Filipino learners (Martin et al., 2020; Organisation for Economic Co-operation and Development [OECD], 2023). These conditions make the quality and attractiveness of the Bachelor of Secondary Education major in Mathematics program especially important.

The BSEd Mathematics program is expected to integrate disciplinary knowledge, pedagogy, field study, practice teaching, research, and professional formation in accordance with Philippine teacher education standards (Commission on Higher Education [CHED], 2017). Students therefore enter the program with expectations regarding the physical learning environment, access to academic resources, faculty expertise, classroom practices, administrative efficiency, financial assistance, and career preparation. Expectations matter because students continually compare what they anticipated before and during enrollment with what they actually encounter in the institution. Such comparisons influence satisfaction, engagement, persistence, and institutional loyalty (Alves & Raposo, 2017; Tinto, 2017).

Expectancy-Disconfirmation Theory explains that satisfaction emerges when actual experiences meet or exceed prior expectations, whereas dissatisfaction develops when institutional performance falls below what students anticipated (Schiebler et al., 2025). In higher education, this comparison extends beyond classroom teaching to facilities, technology, advising, enrollment, scholarships, and other services. The SERVQUAL perspective likewise emphasizes tangibles, reliability, responsiveness, assurance, and empathy as dimensions through which students judge educational service quality (Parasuraman et al., 1988; Sultan & Wong, 2019). Together, these perspectives provide a useful foundation for examining the alignment between expectations and lived academic experiences.

The study was conducted in a private higher education institution in Quezon Province where the BSEd Mathematics specialization had consistently enrolled fewer students than other teacher education programs. Existing promotional activities were generally designed for the institution or department as a whole rather than for the distinctive strengths and needs of the mathematics program. At the same time, localized evidence about how current students evaluated their academic environment remained limited. Without this evidence, recruitment efforts risked promoting claims that did not fully reflect the students' actual experiences.

Accordingly, the study described the expectations and experiences of fourth-year BSEd Mathematics students in terms of school facilities and learning resources, quality of teaching, and institutional support and services. It also used the identified strengths and gaps as the basis for promotional strategies intended to increase enrollment. By connecting program promotion with institutional improvement, the study sought to strengthen student satisfaction, program credibility, and the long-term sustainability of mathematics teacher education.

Literature Review

Student Expectations and Expectancy–Experience Alignment

Students enter higher education with beliefs about the quality, value, and outcomes of the education they will receive. These beliefs are shaped by previous schooling, family and peer influence, institutional reputation, promotional information, tuition costs, and perceived career opportunities. Expectancy-disconfirmation perspectives explain that students assess institutional performance against these prior beliefs; positive alignment supports satisfaction, while unmet expectations can weaken motivation and commitment (Schiebler et al., 2025). Student engagement is therefore produced at the interface between personal participation and the conditions created by the institution (Kahu & Nelson, 2018).

For mathematics majors, expectations extend to rigorous content preparation, strong pedagogy, technology integration, and career readiness. Mathematics graduates increasingly consider opportunities beyond classroom teaching, including data analytics, finance, research, and other quantitative occupations, making curriculum relevance and professional preparation central to students' judgments of program value (Albay et al., 2024; OECD, 2019). Institutions that clearly communicate academic expectations, career pathways, and support mechanisms are better positioned to sustain interest and persistence in specialized programs.

Enrollment is also influenced by whether students perceive the program as credible, supportive, and attainable. Recruitment initiatives become more persuasive when they combine accurate career information, scholarship opportunities, faculty visibility, outreach activities, and authentic student experiences (Guarino et al., 2019; UNESCO, 2021). Thus, promotion should not be separated from program quality; the experiences of current students become a form of evidence that can either strengthen or weaken institutional claims.

School Facilities and Learning Resources

The physical and digital learning environment shapes how students participate in academic work. Flexible classrooms, comfortable and well-maintained facilities, functional laboratories, and spaces that support collaboration can improve engagement and interaction (Byers et al., 2021). Students also interpret visible facilities and equipment as indicators of institutional quality, particularly in private higher education where tuition creates expectations of adequate service and resources.

Digital access has become equally important. Reliable internet connectivity, learning management systems, computer laboratories, and accessible software enable students to conduct research, communicate, complete academic tasks, and develop contemporary professional competencies. Henderson et al. (2017) found that students value technologies that are directly useful for learning rather than technologies that are merely present. In mathematics education, digital and laboratory resources can support visualization, data analysis, problem solving, and the integration of technology into future teaching practice.

Libraries and specialized learning spaces also communicate academic seriousness. Well-organized collections, accessible study areas, and appropriate equipment can strengthen students' confidence that the institution is committed to learning (Jain, 2019). Conversely, restricted access, inadequate materials, and poorly maintained facilities create a visible gap between institutional promises and student experience, which may influence both retention and word-of-mouth promotion.

Quality of Teaching and Pedagogical Relationships

Teaching quality is a major determinant of students' academic satisfaction. Students expect instructors to demonstrate subject mastery, pedagogical competence, clear explanations, appropriate examples, fair assessment, and the ability to connect difficult concepts with meaningful applications. Faculty development that improves teaching approaches can positively influence both instructional practice and student learning (Stes et al., 2017). For mathematics majors, such competence is especially important in advanced subjects where conceptual gaps can accumulate rapidly.

Students also value a productive balance between rigor and approachability. Strict expectations may signal academic seriousness, but students remain more engaged when instructors provide guidance, constructive feedback, psychological safety, and opportunities to learn from mistakes. In this sense, the teacher functions not only as a content expert but also as a mentor who strengthens learners' confidence and professional identity. The quality of this relationship can affect students' willingness to persist when they encounter demanding mathematical work.

Misalignment among curriculum, instruction, and assessment weakens trust in the program. When instructors rely excessively on modules, provide limited explanation, miss classes, present inaccurate solutions, or assess content that was not adequately taught, students may perceive the experience as unreliable. Such concerns directly relate to the reliability and assurance dimensions of educational service quality (Ali et al., 2021; Sultan & Wong, 2019).

Institutional Support, Student Persistence, and Program Promotion

Institutional support encompasses advising, guidance services, scholarships, enrollment, accounting, records management, communication, internship coordination, and other systems that help students navigate their studies. Tinto (2017) emphasized that students are more likely to persist when institutions provide consistent academic and social support. Efficient administrative processes also reduce unnecessary burdens, allowing students to direct more attention to academic tasks.

Responsiveness and empathy are particularly important when students face financial, emotional, or logistical difficulties. Transparent scholarship procedures, respectful staff interactions, accessible guidance programs, and accurate information can strengthen students' sense of belonging and trust. Service quality in higher education affects satisfaction, institutional image, and loyalty, demonstrating that administrative experiences are part of the educational product rather than peripheral activities (Ali et al., 2021; Alves & Raposo, 2017).

The reviewed literature indicates that program promotion should be evidence-based and aligned with actual student experiences. Faculty expertise, student success stories, visible resources, financial support, and

career readiness are credible promotional themes only when the institution consistently delivers them. The limited localized research on the expectation–experience gap among BSEd Mathematics majors in provincial private higher education provided the rationale for the present investigation.

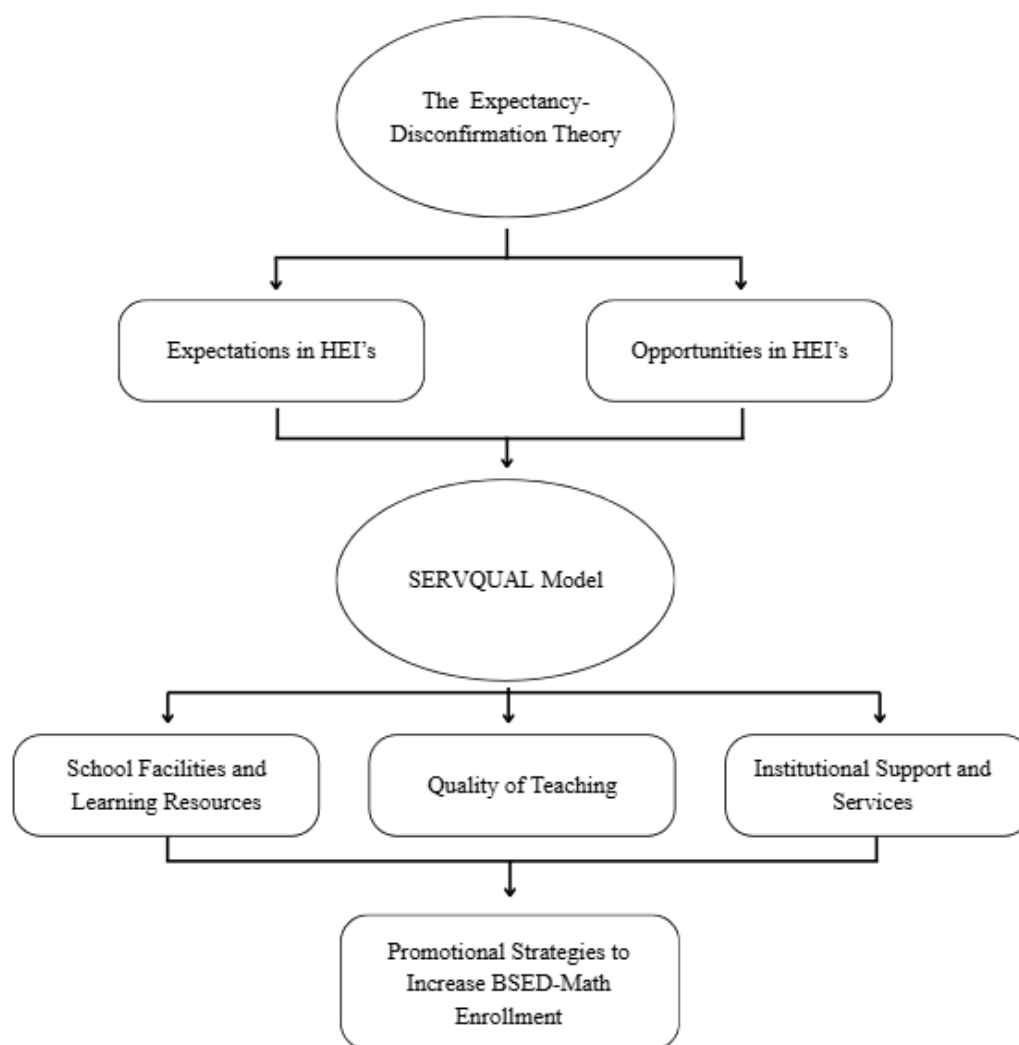


Figure 1. *Theoretical paradigm of the expectations and experiences of BSEd Mathematics students in a higher education institution*

The paradigm integrates Expectancy-Disconfirmation Theory and the SERVQUAL model. Students' expectations and actual experiences were examined through the domains of school facilities and learning resources, quality of teaching, and institutional support and services. The resulting alignment and gaps informed the proposed promotional strategies for increasing enrollment in the BSEd Mathematics program.

METHODS

Research Design

The study employed a qualitative descriptive research design to obtain a direct and detailed account of the expectations and experiences of BSEd Mathematics students. This design was appropriate because it emphasized participants' own descriptions and allowed recurring patterns to be summarized without imposing an overly abstract interpretation (Creswell & Poth, 2018). Focus group discussions were used to generate interactive accounts of shared and contrasting experiences (Hennink, 2020).

Research Locale

The study was conducted in a private, non-stock, and non-profit higher education institution in Quezon Province. The institution offered several Bachelor of Secondary Education specializations, including Mathematics. Institutional records indicated that the Mathematics specialization consistently had fewer enrollees than other programs, and no research-based promotional plan had been developed specifically for the program.

Participants and Sampling Technique

All 22 fourth-year BSEd Mathematics students enrolled during Academic Year 2025–2026 participated in the study through total enumeration. To accommodate their off-campus internship and practice-teaching schedules, they were organized into three focus groups based on availability: seven students in the first group, eight in the second, and seven in the third. The complete inclusion of the graduating cohort enabled the study to represent the perspectives of the entire group.

Research Instrument

A structured focus group discussion guide served as the primary instrument. It covered academic motivations, expectations regarding facilities and resources, quality of teaching, institutional support, actual experiences in the same domains, and reflections that could inform promotional strategies. Three expert validators reviewed the guide for clarity, relevance, and alignment with the research objectives. Their recommendations were incorporated before the instrument was approved for use.

Data Gathering Procedure

Data collection began after ethics clearance and formal permission from the college president, dean, program head, and other relevant authorities had been secured. Participants received an orientation on the purpose of the study, voluntary participation, confidentiality, and audio recording. The first two focus group discussions were conducted in the school library on February 20, 2026, and the third was conducted on February 21, 2026. The researcher moderated the sessions and allowed sufficient time for participants to explain their expectations and experiences.

The recordings were transcribed verbatim. Because many responses were expressed in the local language, the transcripts were translated into English with the assistance of an English teacher to preserve meaning and nuance. Participant names were replaced with codes, and the electronic files were stored in a password-protected location.

Data Analysis

The data were analyzed through thematic analysis following the recursive procedures of familiarization, initial coding, theme development, review, definition, and reporting (Braun & Clarke, 2006). Transcripts from the three focus groups were imported separately into NVivo. Open coding was used to identify recurring statements, and related codes were clustered into subthemes and broader themes. Microsoft Excel was also used to organize the developing code structure. NVivo supported systematic data management and strengthened the transparency of the analytical process (Maher et al., 2018).

Three specialist informants who had validated the instrument also reviewed the coding structure, theme development, and interpretation. Their involvement functioned as an expert review process that supported credibility and confirmability. The analysis remained grounded in participant accounts while ensuring alignment with the study objectives and theoretical framework (Birt et al., 2016).

Ethical Consideration

The study observed voluntary participation, informed consent, confidentiality, and the right to withdraw without penalty. Participants were informed that the discussions would be recorded and that quotations might be reported using anonymous codes. Personal identifiers were removed during transcription. Physical and electronic records were secured and were scheduled for destruction after institutional approval of the final study, consistent with the approved data-management protocol.

RESULTS AND DISCUSSION

Students' Expectations of the Higher Education Experience

The participants entered the BSEd Mathematics program with detailed expectations across the three domains. In facilities and learning resources, they anticipated comfortable and well-maintained classrooms, clean restrooms, adequate amenities, reliable electricity and internet, accessible computer and science laboratories, and a well-stocked library. These expectations reflected their perception that a private college should provide visible and functional resources commensurate with tuition and academic demands.

In teaching, students expected professors to demonstrate mastery, especially in advanced mathematics subjects, while maintaining a productive balance between strictness and approachability. They associated rigor with professional competence but also expected instructors to be considerate, supportive, and capable of guiding independent learning. In institutional support, they anticipated fast and organized enrollment, professional staff, responsive guidance, clear scholarship information, consistent rules, and accessible basic services. These expectations illustrate the tangibility, reliability, assurance, responsiveness, and empathy dimensions through which students evaluated the institution (Parasuraman et al., 1988).

Table 1. Summary of students' expectations across the three study domains

Domain	Major Themes and Subthemes	Illustrative Expectation
School facilities and learning resources	Environmental comfort; facilities and amenities; maintenance; technology access; library and laboratory accessibility	Students expected air-conditioned or comfortable classrooms, clean facilities, reliable Wi-Fi, accessible computer laboratories, and a well-stocked library.
Quality of teaching	Expertise and mastery; high quality standards; strictness and kindness; self-directed and guided learning; academic challenge	Students expected professors to be subject experts who could maintain rigor while remaining approachable and supportive.
Institutional support and services	Service speed and organization; professionalism; guidance and accommodation; scholarship transparency; consistent processes	Students expected efficient offices, clear procedures, proactive scholarship information, responsive guidance, and consistent rules.

Experiences with School Facilities and Learning Resources

Students acknowledged continuing institutional growth. They observed improvements in the library, computer laboratories, cafeteria, and other campus facilities, and they appreciated the cleanliness of restrooms, stable electricity, Wi-Fi availability, and the usefulness of the student portal. These experiences constituted positive disconfirmation because several facilities were better organized and more functional than initially expected. The students interpreted visible upgrading as evidence that tuition was being reinvested in the institution.

Nevertheless, the positive experiences were accompanied by persistent resource gaps. Some participants considered the campus and cafeteria smaller than expected, reported insufficient tools and modules, and noted that access to the ICT laboratory came late in their program. These findings demonstrate that the mere presence of resources is insufficient; usefulness depends on timely and equitable access. This supports Henderson et al. (2017), who emphasized that students value technology when it is readily available for meaningful academic work, and Jain (2019), who identified libraries and specialized resources as indicators of institutional quality.

Experiences with the Quality of Teaching

The strongest positive experiences involved instructors who explained complex mathematics step by step, used complete and organized board work, connected lessons with real-life situations, created additional examples, and balanced teacher guidance with student-centered activity. Participants also valued strictness when it was accompanied by fairness and clear expectations. Supportive faculty relationships strengthened confidence, motivation, and the decision to remain in the program. These accounts reinforce the importance of combining content expertise with pedagogical competence (Stes et al., 2017).

However, students also described deficient pedagogical practices. Reported concerns included irregular class attendance, instructors who provided modules with minimal teaching, limited examples, overly rapid coverage of several lessons, occasional incorrect solutions, unrelated discussions, and assessments that did not align with the content taught. Some students also experienced unclear grading explanations. These concerns represented negative disconfirmation because they contradicted the expectation of complete expertise and reliable instruction. They also weakened the assurance and reliability dimensions of educational service quality (Ali et al., 2021; Sultan & Wong, 2019).

Table 2. Major strengths and gaps in students' academic experiences

Domain	Positive Experiences	Identified Gaps
Facilities and resources	Improved library and laboratories; clean facilities; reliable electricity and Wi-Fi; useful student portal; visible campus upgrading	Limited campus and cafeteria space; insufficient tools and modules; delayed access to ICT facilities; uneven resource availability
Quality of teaching	Faculty mastery; clear step-by-step explanations; real-life applications; structured instruction; approachable and motivating relationships	Inconsistent attendance and delivery; excessive module dependence; limited explanations; occasional inaccuracies; fast pacing; instruction–assessment mismatch
Institutional support and services	More organized queueing; clearer staff roles; helpful registrar and ICT personnel; efficient scholarship applications; supportive guidance services	Record-keeping errors; delayed announcements; poor internship coordination; uniform and identification problems; insufficient orientation and pre-deployment workshops

Experiences with Institutional Support and Services

Participants recognized substantial improvements in several administrative systems. The separation of guidance and scholarship functions clarified staff responsibilities, the accounting queue became more organized and transparent, scholarship applications were processed more efficiently, and registrar and ICT staff provided useful assistance. Guidance services were especially valued for offering emotional support, safe spaces, positive activities, and opportunities for students to process academic stress. These services strengthened belonging and reflected the institution's capacity to respond to the whole student rather than only to academic transactions.

Despite these improvements, systemic problems remained. Participants described payment records that were not encoded correctly, repeated transactions caused by weak documentation, late or same-day announcements, and poor coordination between the college and cooperating schools during internship. Some students were deployed without adequate orientation, workshops, uniforms, or identification, and institutional training schedules sometimes conflicted with internship responsibilities. Such administrative friction can weaken trust even when other services improve. Tinto (2017) and Kahu and Nelson (2018) similarly emphasized that persistence depends on coherent institutional support and students' sense that the institution is actively invested in their success.

Expectation–Experience Alignment and Promotional Implications

Across the three domains, the results showed neither complete satisfaction nor complete dissatisfaction. The institution demonstrated clear strengths in facility improvement, selected faculty practices, student relationships, guidance support, and progressively organized services. At the same time, uneven access to resources, inconsistent teaching quality, and administrative coordination problems prevented the program from

fully meeting student expectations. The findings therefore suggest that promotional claims should be based on demonstrated strengths while institutional weaknesses are being actively corrected.

The research output translated the findings into seven promotional and development strategies. These strategies do not treat marketing as a substitute for academic quality. Instead, they connect recruitment with evidence of improvement, authenticity, accessibility, and career preparation. This approach is consistent with the view that satisfied students and credible experiences influence institutional image and enrollment decisions (Alves & Raposo, 2017).

Table 3. Proposed promotional and development strategies for the BSEd Mathematics program

Strategic Area	Evidence from the Findings	Recommended Actions
Faculty expertise and model teaching	Students valued mastery, clear explanations, structure, and real-life applications.	Feature faculty profiles, demonstration lessons, teaching clips, mathematics problem-solving sessions, and classroom innovations.
Student testimonials and belonging	Approachable teachers and supportive relationships motivated students to continue.	Use authentic student stories, interviews, vlogs, peer ambassadors, and alumni narratives.
Resource visibility and accessibility	Students noticed improved facilities but also uneven access and resource gaps.	Provide virtual tours, laboratory and library schedules, resource showcases, and transparent access guidelines.
Scholarship and financial-support awareness	Students expected proactive and transparent scholarship communication.	Conduct school visits, orientations, social media campaigns, eligibility briefings, and application assistance.
Streamlined administrative processes	Organized queueing and role clarity were appreciated, while record and communication problems caused frustration.	Publish step-by-step procedures, timelines, FAQs, contact points, and service commitments; improve records coordination.
Continuous facility improvement	Visible upgrading strengthened perceived value, but limited space and materials remained concerns.	Document completed improvements, publish development plans, prioritize learning materials, and gather annual student feedback.
Career readiness and graduate outcomes	Students valued internships and wanted stronger preparation and clearer career pathways.	Strengthen pre-deployment workshops, partner-school coordination, licensure preparation, career orientations, and alumni outcome features.

CONCLUSION

The study concluded that fourth-year BSEd Mathematics students held clear and multifaceted expectations regarding modern and accessible learning resources, competent and supportive teaching, and efficient institutional services. Their experiences showed meaningful institutional improvement, including better facilities, useful digital systems, strong teaching by several faculty members, supportive relationships, and responsive guidance services. These strengths contributed to motivation, belonging, and confidence in the program.

However, persistent gaps remained in resource accessibility, consistency of instructional delivery, alignment of teaching and assessment, records management, communication, and internship preparation. These gaps demonstrate that increasing enrollment requires more than promotional visibility. The institution must align the program's actual quality with the expectations communicated to prospective students. The proposed seven-part promotional and development framework provides a basis for strengthening program credibility by combining authentic faculty and student stories with transparent support systems, continuing improvements, and clear career-readiness outcomes.

Recommendation

Academic leaders should develop an integrated improvement plan for learning resources, facilities, instructional quality assurance, administrative coordination, and internship preparation. Priorities should include timely access to computer and laboratory facilities, adequate modules and learning materials, dependable records systems, coordinated announcements, and formal pre-deployment orientations and workshops.

BSEd Mathematics faculty should sustain rigorous instruction while strengthening clarity, accuracy, feedback, real-life application, and the alignment of learning outcomes, classroom activities, and assessment. Regular peer observation, mentoring, instructional review, and professional development may help reduce inconsistent delivery and excessive dependence on modules.

Administrative and student-support offices should publish clear procedures, timelines, scholarship information, service contacts, and escalation mechanisms. The institution should establish an annual student feedback forum where program leaders, faculty, support staff, and student representatives jointly review expectation–experience gaps and document actions taken.

The proposed promotional strategies should be implemented only alongside measurable program improvements. Future research may include students from other year levels, graduates, prospective enrollees, parents, faculty, and administrators; compare multiple institutions; or employ mixed methods and longitudinal designs to examine how expectations, experiences, satisfaction, and enrollment decisions change over time.

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