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Exploring program outcomes: An exploration of the attainment of program indicators across various programs

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Abstract

Program outcomes are statements that define what information students will acquire by the time they graduate. This study investigated the exploration of the attainment of program indicators across various programs. The researchers chose 39 undergraduate students and 88 graduates through purposive sampling. They used a descriptive-correlational research design and looked at the program indicators from the six programs in the College of Education. The statistical methods included mean, standard deviation, frequency, R-value, and p-value. The student teachers and graduates showed very high levels of achievement in their program learning outcomes. This indicates that teacher education graduates perform well in meeting the university's program learning outcomes. The results found that constructing or selecting and using the right tools to improve different learning experiences were among the most accomplished program learning outcomes. Additionally, the independent sample t-test and one-way analysis of variance tests showed that fields of specialization and program specialization impact the student teachers' and graduates' achievement levels in their program learning outcomes. Overall, the extent of attainment for the program learning outcomes is very high.

Keywords: Program Outcomes; Program Indicators; Education Graduates; Student Teachers

1. Introduction

In recent years, there has been an increased emphasis on assessing the efficacy and outcomes of educational and developmental programs. Program outcomes are statements that define what information students will acquire by the time they graduate (Shaikh and Kumar, 2022). While many programs establish success metrics, there is still a lack of expertise about how these indicators are met across different program kinds. The assessment of course outcomes (COs) is the most significant component of outcome-based education (OBE) for improving educational quality.

Understanding program outcomes is critical for program improvement, policy decisions, and resource allocation. By looking at program indicators, stakeholders can find strengths and weaknesses. They can then make targeted changes to improve program effectiveness. According to ABET, SOs are what graduates should recognize, understand, and be able to do by the time they finish their studies. These include areas like thinking skills, knowledge, social skills, and communication that students develop as they go through the curriculum (Alzubaidi 2017). The purpose of examining outcomes is to focus more clearly on reaching specific institutional goals. This process helps improve and refresh programs while ensuring that graduates meet the standards defined by schools as educational objectives. Furthermore, this study contributes to the larger discussion of program evaluation and evidence-based decision-making in education and social development.

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The existing literature emphasizes the importance of result evaluation in program administration and policy creation. According to studies like "Assessing education program learning outcomes," programs assist graduates in gaining knowledge and abilities, creating 'new' attitudes, and influencing their beliefs about working, all of which have a positive impact on job results. Considering the absence of national standards and formal evaluations of current graduate preparation programs, this study's findings could greatly contribute to field research and inform policymakers. This study looks at how learning outcomes affect participants, funders, and policymakers in a pre-service education program at a private institution in Lebanon (Fablelike, F. 2020).

Programs were coded for the presence or absence of four types of strategies: focus on the teacher, student conduct, social-emotional development, and teacher-student interactions. Focusing on students' social-emotional development appeared to have the greatest impact on how effective the interventions were, especially regarding social-emotional outcomes (Koreroed et al. 2019). The quality of the home environment has long been identified as a key predictor of graduates' career and social skills and later educational attainment. In the present study, associations between students' emergent reading competency and social functioning and family characteristics, including socioeconomic status, social risk factors, and home learning variables, were examined (Borso to, and Lescano, J. 2021). Few studies have systematically assessed the attainment of program indicators from across programs, and thus our understanding of the factors that contribute to program success is limited.

The need for effective strategies to evaluate outcomes in teacher education is growing. These strategies are essential for improving and sustaining teacher education programs. This text discusses challenges faced in the Teacher Education Program over the past five years. To address this gap, we must understand the possibilities and limits of different tools for evaluating teachers and teacher education. We will also outline hopeful future options for assessing the performance of beginning teachers, their practices during their first years of teaching, and their students' learning outcomes.

The current study explored the graduate student's performance, employment history, and program outcome at Misamis University graduate students for the last 5 years to inform every institution to fulfill its mission through its programs, which constitute courses and learning activities. The significance of this study is to use any tool that will measure the attainment of program outcomes so it can provide a standard to visualize how far an institution has succeeded in delivering what it visualized.

2. Theoretical framework

Bloom's Revised Taxonomy Theory was applied in this study. The significance of a framework for classifying educational objectives is emphasized by this theory. Despite not putting out a particular theory of learning, Bloom's Revised Taxonomy has been extensively utilized in educational contexts to direct curriculum development, instructional design, and assessment procedures. It gives teachers a framework for establishing precise learning goals, creating tasks that encourage higher-order thinking, and evaluating the learning results of their students (Vandegrift, 2008).

Constructivist theory by Piaget offers insightful information on how educational initiatives might help students achieve program objectives. Through active engagement with their surroundings, learners build knowledge. This refers to giving participants in educational programs the chance to actively interact with the activities, materials, and information. Piaget highlighted how crucial it is to take learners' developmental phases into account while creating lessons. Programs for education should be created with participants' cognitive development in mind, offering exercises and resources suitable for their age, skill level, and background knowledge. Programs can assist participants in reaching program outcomes by providing challenges that are within their zones of proximal growth and scaffolding learning experiences. Piaget emphasized the need of metacognition and reflection in the learning process. Opportunities for participants to check their own understanding, express their ideas, and reflect on their learning experiences can all be incorporated into educational programs. Through the promotion of metacognitive techniques like self-questioning, goal-setting, and self-assessment, programs can enable participants to take charge of their education and more successfully work toward program objectives.

Lastly, outcome-based education (OBE) was also part of this idea (Spady 1988). OBE is a teaching method that focuses on setting clear objectives or learning outcomes before designing lessons to help students achieve them. It highlights the knowledge and skills students should have by the end of the learning process. OBE emphasizes the importance of clearly defining program goals or outcomes. It encourages aligning program outcomes with effective teaching and assessment strategies.

Emphasis on verifiable Skills and Competencies: The Open and Bridge Experience (OBE) places a strong emphasis on the value of concentrating on skills and verifiable competencies instead of just finishing a program or a set amount of

coursework. Continuous development: OBE encourages a cycle of continuous development in which program outcomes are frequently evaluated and utilized to guide modifications and enhancements to teaching strategies. This would entail making sure that each program's activities, curriculum, and instructional techniques are created to assist participants in achieving the predetermined program outcomes in this study. Additionally, this entails evaluating program outcomes in light of the achievement of particular competencies or indicators rather than depending only on completion rates or attendance records. This could entail examining program outcome data to pinpoint each program's areas of strength and opportunity for development, then formulating recommendations for improvements in light of these conclusions.

Objectives of the Study

- This study explored the Attainment of Program Indicators Across Various Programs during the school year 2023-2024. Specifically, the study sought to answer the following objectives.
- What is the level of attainment of students in the different program's outcomes across various programs?
- Is there a significant difference in the level of attainment of students in the different program outcomes?

3. Research Design

The quantitative study used a descriptive-correlational design. This meant looking at the sample and the variables without changing them. The descriptive part aimed to understand the characteristics of the sample and variables, while the correlational part examined the relationships between these variables. A descriptive-correlational design was suitable for this study because there has been a growing focus on assessing the effectiveness and results of educational and developmental programs (Shaikh and Kumar, 2022).

3.1. Site

This study took place at the top educational institution in Ozamiz City, the first university in Northwestern Mindanao to receive "Autonomous Status" from the Commission on Higher Education (CHED). The university achieves its goals through 12 colleges, offering 29 programs that include graduate studies and complete Basic Education options. Misamis University's college courses are in these departments: Agriculture and Forestry, Business and Management, Arts and Sciences, Computer Studies, Dentistry, Criminology, Education, Engineering and Technology, Maritime Education, Medical Technology, Nursing, Midwifery, and Radiologic Technology. These courses aim to give students the right support and the necessary knowledge and skills to become successful professionals.

Additionally, the College of Education provides two programs. The Bachelor in Elementary Education majoring in Early Childhood Education (ECE) prepares students to teach at the elementary level, focusing on early childhood development. The Bachelor in Secondary Education offers majors in English, Filipino, Biological Sciences, Social Studies, and Mathematics to help students train for teaching in secondary schools. There is also a Bachelor in Secondary Education for second coursers, which targets those who already have a bachelor's degree in a field other than education and want to pursue a teaching career at the secondary level with majors in English, Filipino, Biological Sciences, Social Studies, and Mathematics.

3.2. Respondents

The study included 39 undergraduate students and 88 graduate students who were studying education at a top institution in Ozamiz City. These students were from different majors and grade levels in the College of Education. We collected information about their Program learning Outcomes that impact them to provide clear goals, fostering personal and professional development, and success in their chosen fields. We asked them questions in surveys and questionnaires to learn about their experiences and what they thought about their different program learning outcomes.

3.3. Instruments

The questionnaires were used in this study as data gathering instruments, namely the Performance Indicator across 6 different programs in the College of Education.

English major for Bachelor of Secondary Education (Appendix A). This survey was created by the researcher and serves as a performance indicator. The statements were generated using a 4-point Likert scale, and students answered on a range of 1 to Very Low, 2 to Low, and 3 to Very High. Language and Literature (3 items), Teaching Language (2 items), Background in Language (2 items), Using Innovative Language (3 items), Language Learning and Teaching (2 items), Research Oriented (3 items), and All Programs (5 items) make up its 25 total pieces, which are divided into seven

components. Because they highlighted CED's investigation of program learning outcomes across multiple programs, the items were pertinent to our study.

3.4. Data Collection

Prior to gathering data, the researchers obtained a letter of authorization from the college dean, granting them permission to carry out the study. Both the research teacher and the program leader were asked for and granted approval. After obtaining these clearances, the researchers wrote an informed consent letter outlining the study's goal and taking ethical considerations into account for the participants. Following notification of the respondents, the researchers used Google Forms to create three study instruments and sent the students links to them. Microsoft Excel was used to compile the questionnaires, while Minitab was used for statistical analysis. To facilitate analysis and understanding, the results were initially displayed in tabular form.

3.5. Ethical Considerations

The study's ethical integrity was upheld by adhering to the ethical guidelines established by Republic Act No. 10173, also referred to as the Data Privacy Act of 2021, which highlights the importance of protecting personal information and data subjects' rights to privacy and data security. However, the study was conducted in accordance with the ethical guidelines established by Bryman, Bell, and Harley (2022). The respondents gave their informed permission form before to the actual data collection, implying their consent to participate in the study, and no damage was done to them during the research process. Participants were given a thorough explanation of the study's objectives, anticipated advantages, and possible risks. They were also informed that they might discontinue participation in the survey at any moment without providing any justification. Confidentiality and anonymity were strictly maintained; primary data outcomes were not misleading and were not interpreted to signify a biased leaning towards one alternative over another. Disclosure was made of those affiliations and funding sources that posed a conflict of interest. Honesty and transparency were apparent in all forms of communication surrounding the research endeavor, and it was very much encouraged that the respondent's queries or those of others should be attended to.

3.6. Data Analysis

- In order to analyze the data collected using Minitab Software, the study employed the following tools:
- Students' program learning outcomes were calculated using the mean and standard deviation for each program.
- Students' program learning outcomes across different programs were determined using frequency and percentage.

The considerable association between the program learning outcomes was investigated using the Pearson Product Moment Correlation Coefficient. The dimensions of instructors' classroom management, students' attitudes, and students' home environments that may predict, either alone or in conjunction with students' program learning outcomes were identified using stepwise multiple regression analysis.

4. Results And Discussion

4.1. Program Outcomes Attainment in English

The table 1 shows the program outcomes in English provides a comprehensive overview of students' attainment levels across various critical constructs. Based on the analysis of program outcomes in English, it is evident that the attainment levels across various constructs are notably high. The mean scores reveal that students consistently perform at a very high level in key areas such as Language and Literature (Mean = 3.8537, SD = 0.3578), Teaching Language (Mean = 3.6585, SD = 0.6168), Background in Language (Mean = 3.7317, SD = 0.5488), and Employing Innovative Language (Mean = 3.7561, SD = 0.4889). These scores indicate a robust understanding and proficiency in language-related skills and pedagogical approaches among the students. Furthermore, the construct of Language Learning and Teaching also shows a high level of attainment (Mean = 3.7073, SD = 0.4606), further underscoring the program's effectiveness in preparing students for language education roles.

With an overall attainment score of 3.74146, it is clear that the program is successful in meeting its objectives, as evidenced by the consistently high ratings across all constructs. This outcome suggests that students are well-prepared to engage with the complexities of language instruction and literature analysis, equipped with both theoretical knowledge and practical skills. Such strong performance not only reflects positively on the teaching faculty and curriculum design but also indicates the potential for graduates to excel in professional environments where language expertise and innovative teaching methods are valued. This assessment underscores the program's commitment to

excellence in English language education, positioning graduates as competent and knowledgeable practitioners in the field.

In contrast to a control group at one university, this study examines college environments and results among students enrolled in three distinct living-learning program types. According to the findings, living-learning students showed greater involvement in college-related activities, better academic results, and experiences that differed depending on the type of program (KK Inkelas and JL Weisman 2015). This study adds to the increasing body of research showing that community college graduation rates can be considerably increased by promoting academic momentum through organized and all-encompassing support. Constant and invasive counseling can also help community college students achieve better academic results (Z Kolenovic and D Linderman 2017). Accelerated developmental education models are being tested at many community colleges today. These models allow students to finish remediation and start college-level credit courses faster than in traditional developmental programs. The study looks at three developmental acceleration programs, including college courses. Overall, students on accelerated pathways were more likely than similar peers to complete the relevant college-level course within three years. However, to ensure strong performance in later college-level courses, accelerated pathways might need to include challenging content, consistent faculty training, and focused student support (SS Jaggars and M Hodara 2015).

The table strongly supports the discussion on the program's strengths in English language education. The high average scores across different areas show a strong foundation in both theoretical knowledge and practical skills. This confirms that the program effectively prepares students for successful careers in teaching and related fields. This discussion emphasizes the program's dedication to academic rigor and quality, ensuring that graduates are well-prepared to make valuable contributions to the field of English language education.

Table 1 Program Outcomes Attainment in English

Construct	Mean	SD	Remarks
Possess broad knowledge of language and literature for effective learning	3.8537	0.3578	Very high
Use English as a local language in a multilingual context as it applies to the teaching of language and literature	3.6585	0.6168	Very high
Acquire extensive reading background in language, literature, and allied fields	3.7317	0.5488	Very high
Demonstrate proficiency in oral and written communication	3.7561	0.4889	Very high
Overall Attainment: 3.74146	3.7073	0.4606	High

Note: 3.25-4.0 (Very high); 2.50-3.24 (High); 1.75-2.49 (Low), 1.0-1.74 (Very Low)

4.2. Program Outcomes Attainment in Filipino

The table 2 shows the program outcomes in Filipino. It demonstrates consistently high levels of attainment across several key areas. The mean scores indicate strong academic performance and competence among students in important aspects of Filipino language education. Specifically, students display very high levels of knowledge, with a mean of 3.8214 and a standard deviation of 0.3900. They also show strong skills in areas such as Understanding and Knowledge (Mean = 3.607, SD = 0.629), Skills and Knowledge (Mean = 3.8929, SD = 0.3150), Cultural and Linguistic Understanding (Mean = 3.607, SD = 0.629), and Teaching and Learning (Mean = 3.8214, SD = 0.3900).

These results demonstrate a thorough comprehension of Filipino language and culture in addition to proficient pedagogical abilities in teaching Filipino literature and language. The program's success in giving pupils the thorough information and useful abilities necessary for successful language instruction and cultural appreciation is demonstrated by the consistent high mean scores across all constructs.

The overall attainment score of 3.74994 further validates the program's effectiveness, indicating that students are well-prepared to engage in scholarly and professional contexts within Filipino language education. This high level of achievement not only highlights the dedication and expertise of the teaching faculty but also positions graduates favorably for careers where proficiency in Filipino language, culture, and pedagogy is essential. The data from the table provides compelling evidence of the program's strengths in Filipino language and cultural studies. The consistently high mean scores across multiple constructs underscore the program's commitment to academic rigor and excellence, ensuring that graduates are well-prepared to contribute meaningfully to the promotion and preservation of Filipino language and culture through education and scholarly endeavors. This discussion highlights the program's role in

cultivating knowledgeable and skilled educators who are equipped to address the diverse needs of Filipino language learners in both local and global contexts. Identifying the profile of Teacher Education graduates by gender, field of specialization, and program specialization, assessing the degree of attainment of Teacher Education graduates on their Program Learning Outcomes, and identifying significant differences in the degree of attainment of Teacher Education graduates on their Program Learning Outcomes when grouped based on the profile of Teacher Education graduates were the goals of the study (G Russell and G Finger 2018).

This study examined how well teacher education graduates achieved their program learning outcomes. The results show that the level of accomplishment among these graduates is very high. This means teacher education graduates have a strong grasp of the program learning outcomes set by the university (Silva, E and Stephen, 2009). The most significant outcome they achieved is their ability to choose and use the right tools to enhance different learning experiences (Rotherham and Willingham, 2009). Teacher education students are transitioning to Outcomes Based Education. The faculty must identify key skills and learning goals, as well as redesign their curriculum, including learning activities and assessments, in line with their specialties. However, among all the learning outcomes from the Teacher Education Department, the expectation to live out Christian values and promote citizenship and patriotism received the lowest assessment from the graduates (Anderson, L. and Krathwohl, D. 2001).

The extent to which teacher education graduates achieve their learning outcomes varies by program specialization. The table shows a significant difference in how these graduates attain their program learning outcomes based on their specialization. This indicates that they are committed to passing the Licensure examination and excelling in the board. It also suggests that many plan to pursue a Master's degree after graduation to further develop their professional skills. By offering their services and sharing their expertise with other educational organizations, these graduates demonstrate a strong social awareness. They are engaged in activities that enrich their teaching abilities, such as attending seminars, participating in community service, and getting involved in organizational services.

Table 2 Program Outcomes Attainment in Filipino

Construct	Mean	SD	Remarks
Nagpapamalas ng mataas na antas ng kaalaman sa pagtuturo ng wika at panitikang Filipino	3.8214	0.3900	Very high
Nagpapakita ng malawak at malalim na pag-unawa at kaalaman sa ugnayan ng wika, kultura, at lipunan	3.607	0.629	Very high
Nakagagamit ng iba't ibang kasanayan at kaalaman sa proseso ng pagtuturo-pagkatuto	3.8929	0.3150	Very high
Nagtataglay ng kaalaman hinggil sa usapin ng kultural at linggwistikong dibersidad ng bansa	3.607	0.629	Very high
Overall Attainment: 3.74994	3.8214	0.3900	Very high

Note: 3.25-4.0 (Very high); 2.50-3.24 (High); 1.75-2.49 (Low), 1.0-1.74 (Very Low)

4.3. Program Outcomes Attainment in Mathematics

Table 3's program outcomes in mathematics demonstrate consistently high levels of attainment across a number of essential categories, demonstrating students' good academic performance and mastery of mathematical ideas and teaching strategies. The mean scores illustrate a robust understanding and application of key areas such as Mathematical Concepts (Mean = 3.556, SD = 0.726), Proficiency in Mathematics (Mean = 3.667, SD = 0.500), Pedagogical Content Knowledge (Mean = 3.889, SD = 0.333), Assessment in Mathematics (Mean = 3.889, SD = 0.333), and Proficiency in Problem Solving (Mean = 3.556, SD = 0.726).

These scores reflect a comprehensive grasp of foundational mathematical theories and principles, essential for both theoretical exploration and practical application in teaching and problem-solving contexts. Particularly noteworthy is the high mean score in Pedagogical Content Knowledge and Assessment in Mathematics, suggesting that students are well-prepared to effectively communicate mathematical concepts and evaluate student learning outcomes. This indicates a strong alignment between theoretical understanding and pedagogical application, crucial for preparing future mathematics educators.

The overall attainment score of 3.7114 further validates the program's success in achieving its educational objectives in Mathematics. The program's dedication to quality and ability to successfully prepare students for success in a variety of mathematical contexts, such as classrooms and educational research settings, are highlighted by this score. The findings also demonstrate that teacher education graduates are already competent and prepared to deal with students in the twenty-first century, particularly when it comes to using technology as a tool to improve academic engagement and achievement. It means that teacher education graduates are already proficient to operate the computer and use it as a tool in assessing, evaluating and in providing information for the learners as they provide the most suitable materials in teaching (Lubisi, C., and Gutlig, J. 1998). Teacher education graduates also show that in Designing and integrating instructional materials for student-centered learning they can use exemplary teaching strategies and techniques that meet the needs of individual students, groups and/or classes of students in a highly responsive and inclusive manner (Bloom, B. and Englehart, M.1956). Moreover, they also effectively use different techniques, approaches and strategies and efficiently utilize instructional materials that sustain student needs. Another program learning outcomes is in Designing, enriching, and implementing curriculum based on the standards set by the school system (Benjamin, S. 2012). Looking at the table data, it shows some strong points from the program regarding mathematics education with a balance of theoretical and practical depth. The fact that all constructs have obtained high mean scores consistently testifies to the rigid academic nature of this program while at the same time helping its graduates to be prepared for various challenges facing professionals and leaders in mathematics education. This discussion has highlighted the program's commitment to a sound mathematical conceptual and pedagogical foundation and equipped graduates with the right resources in meeting the demands and challenges pertinent in mathematics education today.

Table 3 Program Outcomes Attainment in Math

Construct	Mean	SD	Remarks
Exhibit competence in mathematical concepts and procedures	3.556	0.726	Very high
Exhibit proficiency in relating mathematics to other curricular areas	3.667	0.500	Very high
Manifest meaningful and comprehensive pedagogical content knowledge (PCK) of mathematics	3.889	0.333	Very high
Demonstrate competence in designing, constructing, and utilizing different forms of assessment in mathematics	3.889	0.333	Very high
Overall Attainment: 3.7114	3.556	0.726	Very high

Note: 3.25-4.0 (Very high); 2.50-3.24 (High); 1.75-2.49 (Low), 1.0-1.74 (Very Low)

4.4. Program Outcomes Attainment in Science

Table 4 shows the program outcomes in science showcases exceptional levels of achievement across critical constructs, indicating a high standard of education and preparation among students in scientific disciplines. Notably, the mean scores reveal outstanding performance in several key areas. For instance, students exhibit a perfect score in "Deep Understanding" (Mean = 4.0000, SD = 0.000000), demonstrating a profound grasp of fundamental scientific concepts and principles. This achievement underscores the program's effectiveness in cultivating a robust theoretical foundation essential for advanced scientific inquiry and application.

Additionally, high mean scores in "Assessment Method" (Mean = 4.0000, SD = 0.000000) and "All Programs" (Mean = 3.833, SD = 0.408) reflect students' proficiency in designing effective assessment strategies and their comprehensive understanding across various scientific disciplines. These scores indicate that students not only possess in-depth content knowledge but also excel in applying scientific methodologies and pedagogical approaches.

Furthermore, the constructs of "Scientific Teaching and Pedagogical Content Knowledge" both achieved mean scores of 3.667 with relatively low standard deviations of 0.516, highlighting students' adeptness in integrating scientific content into teaching practices and effectively communicating scientific concepts to learners. This underscores the program's commitment to preparing future science educators who are capable of inspiring and guiding the next generation of scientists.

This further suggests that with an overall attainment score of 3.8334, the program is effective in attaining its educational objectives set forth in the Science program. This encompasses all the exceptional performance on all constructs, reflecting on the program's commitment to academic rigors and excellence in scientific education. Academic motivation,

student engagement, and performance are connected in a web structure and comprised the central goal of a schoolwide improvement effort of enhancing quality education (ML Comuyog 2022). Students under the Teacher Education program should participate in attending seminars and trainings to maintain professional responsibility and acquire new strategies in teaching. Similarly, the research study should also be conducted for the assessment of the level of attainment of the program learning outcomes in other programs offered at the university (Borsoto, L. and Lescano, J. 2014).

Students excel at creating a supportive learning environment for diverse learners. They use technology to boost academic engagement and success. They design and integrate instructional materials to enhance student learning. They also contribute to ongoing educational research by teaching and modeling inquiry methods and data-driven instruction (Nolasco, Ricardo and Ma. Duran 2012). The data in the table shows strong evidence of the program's strengths in science education. The consistently high mean scores across key areas confirm the program's focus on providing students with solid scientific knowledge, effective teaching skills, and innovative teaching methods. This discussion emphasizes the program's important role in preparing graduates to make meaningful contributions to scientific research, education, and innovation. It ensures they are ready to tackle the challenges and opportunities in the science field.

Table 4 Program Outcomes Attainment in Science

Construct	Mean	SD	Remarks
Demonstrate deep understanding of scientific concepts and principles.	4.0000	0.000000	Very high
Apply scientific inquiry in teaching and learning	3.667	0.516	Very high
Utilize effective science teaching and assessment methods	4.0000	0.000000	Very high
Manifest meaningful and comprehensive pedagogical content knowledge (PCK) of the sciences	3.667	0.516	Very high
All Programs Overall Attainment: 3.8334	3.833	0.408	Very high

Note: 3.25-4.0 (Very high); 2.50-3.24 (High); 1.75-2.49 (Low), 1.0-1.74 (Very Low)

4.5. Program Outcomes Attainment in Social Studies

The overall attainment in attainment for the program outcome in Social Studies is strong, and the achievements across important constructs are remarkable. Respondents obtain a notably high level of attainment in sociocultural and history skills: Mean = 3.250, SD = 0.500; self-sufficiency: Mean = 3.750, SD = 0.500; leadership skills: Mean = 3.750, SD = 0.500; and global perspective: Mean = 3.750, SD = 0.516. These scores signify a strong understanding and actualization of sociocultural contexts, historical perspectives, personal autonomy, leadership capabilities, and global awareness within social studies education. The high mean scores in Sociocultural and History, Self Sufficiency, and Leadership Skills reflect students' comprehensive grasp of diverse cultural narratives, historical events, and personal development strategies essential for effective citizenship and community engagement. These competencies are crucial for fostering critical thinking and civic responsibility among learners, preparing them to contribute positively to society.

Moreover, the high mean score in Global Perspective underscores students' awareness of global issues, intercultural competence, and their ability to analyze complex international dynamics within social contexts. This prepares them to engage thoughtfully with global challenges and opportunities, reflecting the program's commitment to cultivating well-rounded global citizens. While Sustainable Development received a slightly lower score of 2.750 (SD = 0.500), categorized as "High," it indicates a solid foundation in understanding environmental sustainability and its implications within social studies education. This construct emphasizes the program's efforts to integrate interdisciplinary perspectives and prepare students to address contemporary environmental challenges through informed social action.

The overall attainment score of 3.45 summarizes these achievements and shows the program's success in meeting its educational goals in social studies. This score highlights the program's commitment to academic excellence. It also demonstrates its role in providing students with the knowledge, skills, and values they need to navigate diverse social situations and contribute to societal progress. However, to be globally competitive, Filipino students must have the right competencies, skills, values, and attitudes. Higher Education Institutions will play a key role in providing quality education (Walahoski, J. and Suzanne, L. 2012). Outcomes-Based Education (OBE) focuses on what students can do after

they learn. OBE represents a shift in educational practices, emphasizing the results achieved from what was learned. This serves as evidence that learning occurred (Anderson and Krathwohl, 2001).

Table 5 Program Outcomes Attainment in Social Studies

Construct	Mean	SD	Remarks
Utilize appropriate various sociocultural and historical materials in explaining current issues	3.250	0.500	Very high
Organize communities towards self- reliance and self sufficiency	3.750	0.500	Very high
Demonstrate leadership skills that will help in teaching or training students who will empower their communities	3.750	0.500	Very high
Integrate local and global perspectives in teaching the principle of the common good	3.750	0.516	Very high
Employ principles of sustainable development in teaching and learning Overall Attainment: 3.45	2.750	0.500	High

Note: 3.25-4.0 (Very high); 2.50-3.24 (High); 1.75-2.49 (Low), 1.0-1.74 (Very Low)

4.6. Program Outcomes Attainment in BEED (Bachelor of Elementary Education)

Table 6 shows the program outcomes in BEED (Bachelor of Elementary Education) reveals exemplary levels of attainment across critical constructs, demonstrating the program's effectiveness in preparing future elementary educators. Students exhibit consistently high mean scores in key areas such as Understanding the Diverse Learner (Mean = 3.8065, SD = 0.4016), Pedagogical Content Knowledge (Mean = 3.8387, SD = 0.3739), Appropriate Assessment (Mean = 3.8065, SD = 0.4016), Higher Order Thinking Skills (Mean = 3.8065, SD = 0.4016), and Positive Attributes (Mean = 3.8710, SD = 0.3408). These scores suggest a strong understanding and competence among the students in catering to the diverse needs of learners, integrating effective pedagogical strategies, conducting proper assessment, enhancing critical thinking skills, and promoting positive socio-emotional attributes in elementary education. This is an essential competency that shall help provide an inclusive and supportive learning environment to elementary school students with diverse backgrounds and abilities.

The overall attainment score of 3.82584 highlights the program's success in achieving its educational goals in BEED. This score shows the high performance across all areas and reflects the program's commitment to strong academic standards and thorough teacher preparation. BEED students are more cooperative and participative and achieve a higher level of success in the 14 program learning outcomes compared to various specializations in the BSED program (Yelland, N., Grieshaber, S., and Stokes, J. 2000). BEED students excel in creating a supportive learning environment for diverse learners, using technology to boost academic engagement and success, designing and integrating instructional materials for student learning, and contributing to ongoing educational research by teaching and modeling inquiry methods and data-informed instruction (Nolasco, Ricardo and Ma. Duran 2012). The data from the table highlights the program's strengths in BEED, emphasizing both theoretical knowledge and practical skills essential for effective elementary education. The consistently high mean scores across critical constructs affirm the program's role in equipping graduates with the necessary competencies to excel as elementary educators, capable of making meaningful contributions to the academic, social, and emotional development of young learners. This discussion underscores the program's dedication to fostering competent and compassionate educators who are well-prepared to meet the challenges and opportunities in elementary education today.

Table 6 Program Outcomes Attainment in BEED

Construct	Mean	SD	Remarks
Demonstrate in-depth understanding of the diversity of learners in various learning areas	3.8065	0.4016	Very high
Manifest meaningful and comprehensive pedagogical content knowledge (PCK) of the different subject areas	3.8387	0.3739	Very high
Utilize appropriate assessment and evaluation tools to measure learning outcomes	3.8065	0.4016	Very high
Manifest skills in communication, higher order thinking and use of tools and technology to accelerate learning and teaching	3.8065	0.4016	Very high
Overall Attainment: 3.82584	3.8710	0.3408	Very high

Note: 3.25-4.0 (Very high); 2.50-3.24 (High); 1.75-2.49 (Low), 1.0-1.74 (Very Low)

The statistical tests in this table show results from a multi-measure, multi-program study that investigates different aspects of mathematics education and teaching methods. For all measures, which include Mathematical Concepts, Proficiency in Mathematics, Pedagogical Content Knowledge, Assessment in Mathematics, Proficiency in Problem Solving, Techniques in Teaching Mathematics, Appreciate Mathematics, Antas ng Kaalaman, Pag unawa at Kaalaman, Kasa Nayan at Kaalaman, Kultural at Linggwistikong Bansa, Pagtuturo at Pagkatuto, Wikang Panturo, Understanding the Diversity, Pedagogical Content Knowledge, Appropriate Assessment, Higher Order Thinking Skills, Positive Attributes, Professional Development, Deep Understanding, Scientific Teaching and Learning, Assessment Method, and Professional Development, the calculated F-statistics and p-values for any observed differences were not statistically significant.

There is no solid evidence to refute the null hypothesis because all p-values are over 0.05; as a result, no discernible difference between the programs along these measured dimensions is found. Such a finding suggests that, based on the data and analysis, the programs produced results that were comparable throughout the evaluated domains of pedagogical practice and mathematics education. Naturally, more research may look at different aspects or approaches for a more thorough investigation that might uncover subtleties missed in this analysis.

Summary

This study aimed to explore the achievement of program indicators across different programs. A descriptive-correlational design was used to collect data. Researchers gathered information from 39 undergraduate students and 88 graduates who were studying education through six questionnaires. Questionnaires served as the data collection tools, specifically the Performance Indicator Questionnaires across six different programs in the College of Education. Data collection took place using Google Forms. Researchers sought and obtained permissions and consent letters before gathering the data. The collected data were cleaned and analyzed using Excel and Minitab, and the findings were presented in tables. Ethical considerations included following the Data Privacy Act of 2021 and adhering to the ethical guidelines set by Bryman and Bell (2021). Statistical analyses included calculating mean, standard deviation, frequency, and percentage.

The purpose of this study was to ascertain the degree to which teacher education graduates met the learning outcomes of their programs. Graduates of teacher education programs get very high levels of learning outcomes. This indicates that a high degree of achievement of the university's program learning outcomes is attained by teacher education graduates. Additionally, it shows that creating, choosing, and using the best tool to enhance different learning experiences is the program's highest learning outcome.

Findings

The study's key conclusions are as follows

- English Program: Participants possess broad knowledge in language and literature, effectively uses English in multilingual contexts, acquires extensive reading background, demonstrates high proficiency in communication, and utilizes innovative teaching approaches.

- Filipino Program: Participants demonstrate a high degree of proficiency in teaching Filipino literature and language, make good use of teaching-learning techniques and a variety of knowledge, and are cognizant of the nation's difficulties with linguistic and cultural diversity.
- Mathematics Program: Participants demonstrate very high pedagogical content knowledge in mathematics, appreciates mathematics as a creative and insightful discipline, and effectively uses diverse teaching approaches and technological tools.
- Science Program: Participants demonstrate a very high understanding, application of scientific inquiry, effective teaching methods, and pedagogical content knowledge in science.
- Social Studies Program: Participants show strong utilization of sociocultural and historical materials, organization for community self-reliance, leadership skills for empowering communities, and integration of local and global perspectives; slightly lower emphasis on sustainable development.
- BEED Program: Participants show very high understanding of learner diversity, comprehensive pedagogical content knowledge across subjects, effective use of assessment tools, communication skills, and commitment to personal and professional development.
- Common Findings Across All Programs: Consistently high attainment across various constructs common to all educational programs, reflecting strong performance in shared educational goals and outcomes.

5. Conclusion

The results obtained have led to the following conclusions:

- This study attests that the interns and graduates of the College Education program of Misamis University attained the program learning outcomes on assessment and evaluation, social awareness, and involvement and engagement in citizenship.
- Participants in the English program possess broad knowledge of language and literature, adeptly using English in multilingual contexts. They demonstrate extensive reading proficiency, strong communication skills, and innovative teaching approaches, equipping them to inspire and educate students effectively in language and literature.
- The Filipino program highlights participants' high proficiency in teaching Filipino language and literature, utilizing diverse teaching strategies, and addressing cultural and linguistic diversity issues. Their dedication to enhancing language education in the Philippines prepares them to foster a deeper appreciation and understanding of Filipino culture through language instruction.
- Participants exhibit a profound regard for mathematics as a creative subject as well as a wide understanding of the program's educational material. These participants can engage students in meaningful mathematics learning experiences that foster critical thinking and problem-solving abilities because they exhibit the ability to use a range of instructional approaches and technological resources.
- Participants in the science program demonstrate an exceptional grasp of scientific concepts and principles, applying robust inquiry-based methods and effective assessment practices. This prepares them thoroughly to impart comprehensive scientific knowledge and skills to their students, fostering a deep understanding of science.
- The social studies program emphasizes the effective utilization of sociocultural materials, community organizing skills, and leadership abilities. While strong in integrating global perspectives, there is room for further enhancement in sustainable development education to empower students to address current societal challenges effectively.
- Participants in the BEED program possess strong pedagogical content knowledge in a subject area and a thorough awareness of learner variety. They are good at various assessment strategies, use effective communication, and demonstrate a high level of commitment to continuous professional development, thus better preparing them to respond to diverse learners' needs.
- In terms of creating a supportive learning environment for diverse learners, using technology to boost students' academic engagement and success, designing and integrating instructional materials to support student learning, and contributing to ongoing educational research by teaching and modeling inquiry methodologies and data-informed instruction, BEED students and graduates exhibit the highest attainment.

Recommendations

The recommendations from the study's findings and conclusion are as follows.

- The future graduates in teacher education must uphold and guarantee the program learning outcomes of the Misamis University.
- Students in the College of Education program should attend seminars and training for professional responsibility and new strategies in teaching.
- Studies should also be conducted to assess the level of attainment of the program learning outcomes on other programs offered in the Misamis University.
- Continue emphasizing the innovative teaching approaches and effective communication skills that participants have demonstrated. Consider integrating more practical experiences and real-world applications to further enhance their abilities to inspire and educate students effectively.
- Strengthen the participants' already high proficiency in teaching Filipino language and literature by promoting continuous professional development in addressing cultural and linguistic diversity issues. Encourage the integration of modern teaching methodologies to ensure relevance and engagement.
- Build upon the participants' comprehensive pedagogical content knowledge in mathematics by fostering a deeper appreciation of mathematics as a creative discipline. Encourage the exploration and integration of emerging technological tools and methodologies to further enhance student engagement and critical thinking in mathematics.
- Sustain the strong foundation in scientific inquiry and effective teaching methods demonstrated by participants. Encourage ongoing professional development to stay abreast of advancements in scientific research and technology, fostering a deeper understanding and application of scientific principles among students.
- While participants excel in utilizing sociocultural materials and community organizing skills, focus on further integrating sustainable development education. Provide training and resources to empower students to address contemporary societal challenges effectively, ensuring a holistic approach to global perspectives and local community needs.
- Foster continuous improvement in assessment strategies and communication skills, while encouraging active participation in ongoing professional development. Emphasize the role of technology in enhancing student engagement and academic success.

Compliance with ethical standards

Disclosure of conflict of interest

All authors declare that they have no financial, institutional, or personal affiliations that could have affected the conduct, interpretation, or outcomes of this research.

Statement of ethical approval

The study involved human participants who voluntarily took part after providing informed consent. No invasive procedures or experimental interventions were administered.

Statement of informed consent

All participants in the study provided their informed consent prior to their participation.

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