Assessment of Bachelor of Secondary Education (BSED) Course Learning Outcomes: Insights for Program Enrichment

Jerlyn D. Pama

Iloilo State University of Fisheries Science and Technology (ISUFST)- Tiwi Campus, Brgy. Tiwi, Barotac Nuevo, Iloilo, Philippines

DOI: https://dx.doi.org/10.47772/IJRISS.2025.9020295

Received: 14 February 2025; Accepted: 18 February 2025; Published: 19 March 2025

ABSTRACT

This study assessed the alignment of course learning outcomes (CLOs) of the Bachelor of Secondary Education (BSED) major in English, Filipino, Mathematics, Science, and Social Studies with the Program Outcomes (POs) in CHED Memorandum Order (CMO) No. 75, s. 2017. Likewise, it profiled the assessment strategies utilized by the teachers. Only available syllabi in the BSED program were used in the study. Frequency counts and ranks were employed in data analyses. The study showed that fewer English teachers created CLOs for POs 6.3.1.f, 6.3.1.g, and 6.3.1.c, and majority for POs 6.3.1.a, 6.3.1.b, and 6.3.1.h. Filipino teachers developed a few CLOs that aligned with POs 6.3.2.e and 6.3.2.c, but many for POs 6.3.2.a, 6.3.2.b, 6.3.2.d, and 6.3.2.f. Math teachers formulated less CLOs for POs 6.3.3.d and 6.3.3.g, but more for POs 6.3.3.a, 6.3.3.b, and 6.3.3.f. Science teachers wrote many CLOs that focused on achieving PO 6.3.4.a, but few for POs 6.3.4.b, 6.3.4.c, and 6.3.4.d. Social Studies crafted fewer CLOs corresponding to POs 6.3.5.f, 6.3.5.c, and 6.3.5.b, but more CLOs on POs 6.3.5.d, 6.3.5.a, and 6.3.5.g. The teachers used various assessment techniques but should keep abreast of summative and formative assessment methods to strengthen them. The findings gave insights for program enrichment.

Keywords: alignment of CLOs and POs, assessment strategies, course learning outcomes (CLOs), program enrichment, program outcomes (POs)

INTRODUCTION

Education liberates the intellect, unlocks the imagination, and is the key to prosperity. It opens a world of opportunities, enabling us to contribute to a progressive, healthy society. Learning benefits every human being and should be available to all. The United Nations Sustainable Development Goal (SDG.) No. 4, Quality Education, aims to ensure inclusive and equitable education and promote lifelong learning opportunities. This goal recognizes the need to provide quality education for all (The Global Goals, 2024).

Many leaders, institutions, organizations, and individuals have, in various ways, spent a large amount of their resources to ensure that quality education is achieved. Today, education has become one of the most significant enterprises. It has been defined differently by different people in different parts of the world—Peters (1967) defined education as transmitting what is worthwhile to those committed to it. Education is an activity in a society, and its aims and methods depend on the nature of the society in which it operates. Education constantly changes, adapting to new demands (Eze,2009).

Educators emphasized that educators and educational authorities need to shift the attitude and frame of mind. The shift necessitates rotating teaching methods from educator-centered to student-centered (Macayan, 2017). The shift in instructional design has gained popularity due to its authenticity and systematic approach. However, this needs organized supervision and faculty training to achieve the desired goals for the program (Iqbal et al., Ian & Ahmad, Shahzad & Almigbal; Turkey, 2020) and a significant component of education, specifically in teaching and learning procedures. It highlights the outcome, where students' accomplishments are computable, verified, and could be improved (Sainy, (2018) & De Guzman, Edaño, & Umayan, 2017).

The Commission on Higher Education's (CHED) definition of Outcomes-Based Education (OBE) is an approach that focuses and organizes the educational system around what is essential for all learners to know, value, and be able to do to achieve the desired level of competence. The teaching-learning system will have its appropriate assessment of student performance (CHED Presentation, 2012). This method highlights the students' performance and productivity at the end of learning and focuses on measuring the outcomes or results of learning rather than just the learning process itself. This educational approach is widely accepted in many countries worldwide, particularly in vocational and professional education, because of its practical approach to curriculum development, including learning practices and focusing on the students rather than the teacher. OBE has many intrinsic benefits, making it an attractive model for educationalists involved in curriculum planning, curriculum developers, teachers, employers, and students (Sainy, 2018). It is a comprehensive approach to organizing and operating an education system (Spady, 1994), involves the restructuring of curriculum, assessment, and reporting practices in education to reflect the achievement of high-order learning and mastery rather than the accumulation of course credits"(Vidyakala et al., 2020).

As specified in CMO No. 75, series of 2017, on Policies, Standards, and Guidelines (PSG) for Bachelor of Secondary Education (BSED), highlights the "shift to learning competency-based standards/outcomes-based education is a response to the 21st Century Philippine Teacher Education framework". PSGs are the salient features of the K to 12 Enhanced Curriculum (RA 10533), the Philippines Qualifications Framework (EO 83, s. 2012), the National Competency-Based Teacher Standards (NCBTS) currently known as the Philippine Professional Standards for Teachers (DO 42, s. 2017). The PSG specifies the core competencies expected of BSED graduates regardless of the type of Higher Education Institution (HEI) where they graduated. The PSG also provides ample space for HEIs to innovate in the curriculum to assess how best to achieve learning outcomes in their particular contexts and missions. (CHED, 2017).

Outcomes are precise learning results that learners must demonstrate at the end of significant learning experiences, such as what they can do with what they know and have learned. Outcomes are actions/ performances that successfully embody and reflect learner competence in using content, information, ideas, and tools Choi, (2020). Vella, Berardinelli, and Burrow (1998) highlighted the importance of accountability mechanisms that directly reflect student performance and "know what they know." Hence, learning outcomes describe what is learned versus what is taught over time.

Iloilo State University of Fisheries Science and Technology, Tiwi Campus, has implemented outcome-based education in the different campuses in adherence to CMO No. 75, s. 2017; however, the alignment of CLOs vis-à-vis POs in the CMO has not been assessed. Also, the institution submits itself for a higher accreditation level to assess its programs' quality. Thus, it is very fitting to continuously evaluate its curriculum or programs to ensure quality education for the students and graduates, and a greater chance to increase the passing percentage in the teachers' licensure examination. Assessing the status of OBE in educational institutions is a crucial step in ensuring that students receive a high-quality education that prepares them for success in their future careers (Irfan et al. Islam, Sheikh & Sood; Siddhi, 2023). Also, educational institutions are always attentive and watchful about the quality of graduates produced and introduced in the market (Yusoff et al., 2014). Hence, the primary purpose of this study is to assess the alignment of the CLOs of BSED major in English, Filipino, Mathematics, Science, and Social Studies vis-à-vis program outcomes in CMO No. 75, s. 2017. Likewise, this study aimed to profile the assessment strategies utilized by the teachers.

Research Questions

This research aimed to assess the alignment of CLOs of BSED major in Filipino, English, Mathematics, Science, and Social Studies with the POs in CMO No. 75, s.2017. Likewise, this study profiled the assessment strategies utilized by the teachers in the BSED program. This study specifically sought answers to the following objectives:

1. What is the extent of alignment of course learning outcomes (CLOs) in BSED major in English, Filipino, Mathematics, Science, and Social Studies program outcomes (POs) in CMO No. 75, s. 2017?

2. What assessment strategies do the teachers in the Bachelor of Secondary Education majors in English, Filipino, Mathematics, Science, and Social Studies utilize in the BSED program?

3. What contextualized steps can be proposed to assess the alignment of course learning outcomes and program outcomes of the BSEd?

Conceptual and Theoretical Framework

OBE has been formulated for several decades and focused on the significance of learning objectives for designing educational experiences (Guskey, 1994). It is used in education because it focuses and organizes everything in an educational system around what is necessary for all students to be able to do at the end of their learning (Asim et al., Anthony & Ahmed, Ashfaq & Sadiq; Samreen, 2021). It is believed that clear educational standards should be established and that accountability for results must be ensured. This latest wave of institutional reforms opened the window of opportunity for attaining cognitive competence (Hatch, 2013). As highlighted by the theory of behaviorism, the new concepts of cognitive and constructivism theories have also progressed. Most of the literature on cognitive theory targets how learners learn concepts and apply them in different situations by using information and recall mechanisms.

Tyler Rationale (Ralph Tyler, 1949) emphasizes the importance of clear learning objectives, aligned assessment methods, and continuous curriculum evaluation. This theory emphasizes ensuring the curriculum effectively achieves its intended learning outcomes as outlined by CMO 17 s. 2017. Backward Design (Grant et al., 2005) suggests starting curriculum development with desired outcomes. This theory supports this study by focusing on how well the BSEd program prepares graduates to achieve the outcomes mandated by CMO 17 s. 2017 (Wraga, 2017).

Educational researchers started paying attention to cognitive theory and looking into the relations between instructions and tests and desired learning outcomes to ensure that instructional alignment has been reached (Martone & Sireci, 2009). The learning techniques generated from cognitive theory are known as constructivism, one of the significant factors behind curriculum development and assimilation (Vapnik, 2013). OBE presents the subsequent phase by providing a theoretical background for curriculum designing and directing the attention from cramming course content to depicting competence in actual life situations. OBE curriculum originated from extensive visionary aims formulated to allow students to direct their lives effectively after they ended their educational experience (Barman et al., 2014). OBE is a complete strategy to improve educational systems and thus improve students' learning outcomes. The outcome-based assessment of program outcomes will be beneficial in advancing higher education (Suji et al., 2023) because educational institutions are always attentive and watchful about the quality of graduates produced and introduced in the market (Yusoff et al., 2014).

The paradigm of this study is shown below.

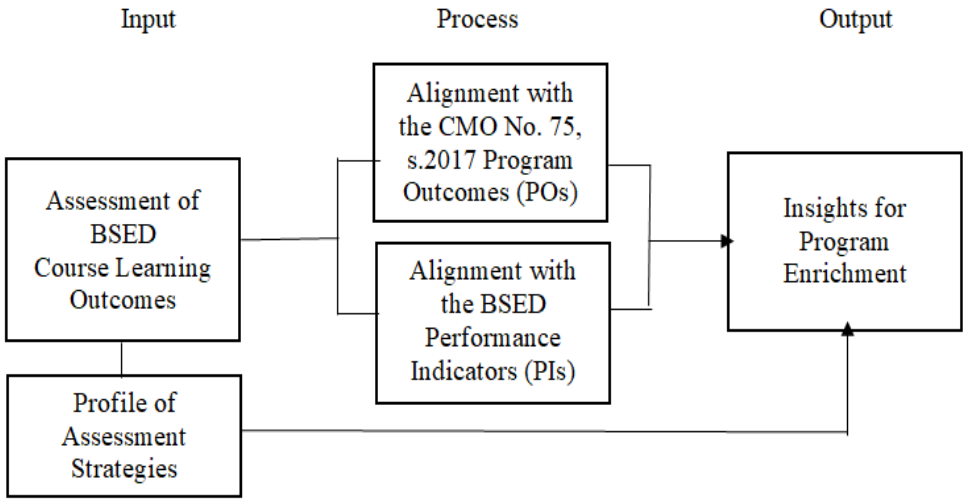

Figure 1: The shows the research paradigm of the study

The study was conducted in August 2022 and January 2023 since these were the deadlines set by the university for teachers to submit the syllabi every semester.

METHODOLOGY

This descriptive research aimed to assess the alignment of the course learning outcomes (CLOs) of the BSED major in English, Filipino, Mathematics, Science, and Social Studies vis-a-vis CMO No. 75, s. 2017 program outcomes. The input was the assessment of BSED CLOs in English, Filipino, Mathematics, Science, and Social Studies, which the teachers formulated. The process aligned CLOs to the POs using the PIs stipulated in CMO No. 75, s. 2017, while the output was insights for program enrichment.

This research utilized the CLOs formulated by the teachers in the BSED Program's syllabi, namely English, Filipino, Mathematics, Science, and Social Studies, and their assessment strategies and the POs and PIs stipulated in CMO No. 75, s. 2017.

Two encoders were tasked to encode and align the CLOs with the PIs and POs stipulated in CMO No. 75, s. 2017. After encoding and aligning, the researchers presented and consulted experts in the field, administrators, and faculty representatives in each discipline to check the correctness of the alignment for suggestions. For validation, the alignment of the CLOs vis-à-vis POs with its PIs in CMO No. 75, s. 2017 was presented to the faculty and program chairpersons of English, Filipino, Mathematics, Science, and Social Studies to critique the alignment before finalizing the results. The syllabi of the BSED program used in the study are profiled below.

Table 1: Profile of the Syllabi of BSED major in English, Filipino, Mathematics, Science and Social Studies

BSED Major Courses	No. of Syllabi per Major	Available Syllabi per Major	%
English	20	12	60
Filipino	21	9	43
Mathematics	20	14	70
Science	20	8	40
Social Studies	23	15	65

Table 1 summarizes the profile of the syllabi per major. It shows that the profile of the syllabi used in this study as follows: There are twelve (12) or sixty percent (60%) available English syllabi, Filipino courses have nine (9) or forty-three percent (43%), Mathematics courses have fourteen (14) or seventy percent (70%), Science has eight (8) or forty percent (40%), and Social Studies has fifteen (15) or sixty-five (65%).

Statistical Tools and Data Analyses

Frequency counts and ranks were employed to profile the number of CLOs of BSED major in English, Filipino, Mathematics, Science, and Social Studies as to its alignment with the program outcomes in CMO No. 75, s. 2017 using the PIs to determine the order of the program outcomes from the highest to lowest frequency.

RESULTS AND DISCUSSION

Table 2a: Rank Results of the Alignment of English Course Learning Outcomes (CLOs) vis-à-vis Performance Indicators (PIs) and Program Outcomes (POs) in CMO No. 75 s.2017

CHED Program Outcomes (POs)	**Performance Indicators (PIs)**	**NO. of English Course Learning**	**No. of Course Learning Outcomes (CLOs) aligned**	**Rank**

		Outcomes (CLOs)	to POs in CMO No.75, s. 2017	
6.3.1.a Possess broad knowledge of language and literature for effective learning.	• Integrate the relationship of language, literature, culture, and society in the teaching-learning process	8	9	1
	• Conduct an independent investigation of a selected structure of English in the context of the language classroom	2		
	• Critique selected literary pieces using appropriate literary theories	3		
6.3.1.b Use English as a glocal language in a multilingual context when teaching language and literature.	• Incorporate features of English as a global language in the design of the curriculum, learning activities, and materials	7	7	3
	• Draft a proposal for and implement a community-based English language or literature-based learning program	0		
6.3.1.c Acquire extensive reading background in language, literature, and allied fields.	• Prepare an annotated reading list appropriate for a particular grade level to enhance students' reading skills	0	1	8
	• Show the ability to enrich the curriculum by including an extensive reading list for learning language, literature, and allied fields.	1		
6.3.1.d Demonstrate proficiency in oral and written communication.	• Utilize a variety of oral communication forms in order to become an effective model for learners	2	2	6
	• Prepare original compositions in expository and creative writing	1		
6.3.1.e Show competence in employing innovative language and literature teaching approaches, methodologies, and strategies	• Employ a variety of innovative teaching approaches, methodologies, and strategies	3	5	4
	• Design learning plans following expectations of the curricula for grades 7-10	2		
	• Perform one independent and one supervised teaching demonstration	3		
	• Construct appropriate assessment tools for the language and literature classroom.	1		
6.3.1.f	• Design computer-assisted language and literature learning tasks	2	2	6

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume IX Issue II February 2025

Use technology in facilitating language learning and teaching	• Prepare one independent and one supervised technology-based lesson	3		
6.3.1.g Inspire students and colleagues to lead relevant and transformative changes to improve learning and teaching language and literature.	• Conduct a community language profiling survey to make lessons more localized.	2	2	6
	• Draft a proposal for and implement a community-based English language or literature-based learning program	0		
6.3.1.h Display skills and abilities to be a reflective and research-oriented language and literature teacher.	• Conduct a comprehensive language profiling to identify students' needs	0	8	2
	• Analyze assessment results to improve teaching and learning in the language classroom	6		
	• Conduct research concerning the teaching and learning of language and literature	2		

Table 2a presents the results of the rank of English CLOs vis-a-vis PIs and POs in CMO No. 75, s. 2017. The results show that of the twelve (12) syllabi available, there were nine (9) CLOs which aligned to PO 6.3.1. a, which ranked 1st; eight (8) for PO 6.3.1.h ranked 2nd; seven (7) in PO 6.3.1.b ranked 3rd; five (5) for PO 6.3.1.e ranked fourth (4th); two (2) for PO 6.3.1.d; PO 6.3.1.f; PO 6.3.1.g ranked 6th; and one (1) in PO 6.3.1.c ranked 8th.

Table 2b: Results of the Rank of the Filipino Course Learning Outcomes (CLOs) vis-à-vis Performance Indicators (PIs) and Program Outcomes (POs) CMO No. 75, s. 2017 Program Outcomes

Program Outcomes (POs) in CMO No. 75, S. 2017	**Performance Indicators (PIs)**	**No. of Filipino CLOs**	**No CLOs aligned to POs in CMO No.75, s. 2017**	**Rank**
6.3.2. a Nagpapamalas ng mataas na antas ng kaalaman sa pagtuturo ng wika at panitikang Filipino	• Naipaliliwanag ang mga bataayan at kaalaman sa pagtuturo ng Filipino.	7	8	1.5
	• Nailalapat ang kaalaman sa Filipino na nakasalig sa iba't ibang teorya, pananaw,a t prinsippyo sa pagkatuto at pagtuturo	1		
6.3.2. b Nagpapakita ng malawak at malalim nap ag-unawa at kaalaman sa ugnayan ng wika, kultura, at lipunan	• Naipaliliwanag ang papel ng wika bilang isang panlipunanang phenomenon.	4	8	1.5
	• Nasusuri ang ugnayan ng wika, panitikan, kultura at lipunan	5		
	• Nagagamit ang pagpapahalagang pampanitikan sa pagtuturo ng ugnayan ng kltura at lipunan	1		

	• Nasusuri ang gamit ng wika sa iba't ibang institutsyong panlipunan	2		
	• Nakagagawa ng kritikal na pag-aaral hinggil sa mga napapanahong isyu sa wika, kultura at lipunan at ang implikasyon nito sa pagtuturo at pagkatuto ng Filipino.	2		
6.3.2. c Nakagagamit ng iba't ibang kasanayan at kaalaman sa proseso ng pagtuturo-pagkatuto	• Nakapagdidisenyo ng makabuluhang kurikulom batay para sa pagtuturo at pagkatuto at pagkatuto ng Filipino	0	1	6
	• Nakabubuo ng plano ng pagkatuto ayon sa kahingian ng kurikulum	0		
	• Nakalilikha ng mga kagamitang pampagtuturo na na nakaugat sa lokal na kultura.	0		
	• Nakagagamit ng mga makabagong pagdulog pagtasa at pagtaya sa pagtuturo at pagkatuto ng Filipino	2		
	• Nakagagamit ng iba't ibang lapit o dulog sa pagtuturo ng Filipino para sa ika-21 siglo	0		
6.3.2. d Nagtataglay ng kaalaman hinggil sa usapin ng kultural at linggwistikong diberssidad ng bansa	• Natutukoy at nasususri ang mga barayti at baryasyon ng wikang Filipino	2	5	3
	• Napaghahambing ang mga pagkatulad at pagkakaiba ng mga wika at kultura.	2		
	• Nakapagpapahayag ng mga saloobin sa kahalagahan ng pagkakatulad at pagkakaiba ng mga rehiyonal na panitikan.	4		
6.3.2. e Nakapagdidisenyon ng malikhain, inobatibo, at integratibong mga alternatibong dulog sa pagtuturo at pagkatuto	• Nakakagamit ang ibat ibang dulog pagtuturo at pagkatuto ng wika at panitikang Filipino	2	2	5
	• Natatataya ang bisa ng dulog sa epektibong pagtuturo- pagkatuto ng wika at panitikang Filipino	0		
6.3.2. f Nakagagawa ng pananaliksik ukol sa ikauunlad ng wikang Filipino bilang wikang panturo	• Nakakagawa ng pananaliksik ukol sa wika at panitikang Filipino	1	4	4
	• Nagtataglay ng kaalaman sa teknikal na aspeto ng pananaliksik sa pagtuturo at pagkatuto ng wika at panitikang Filiipino.	0		
	• Nakabubuo ng mga pag-aaral ukol sa pagtuturo at pagkatuto ng wikang Filipino	3		

Table 2b contains the rank results of Filipino CLOs vis-à-vis PIs and POs in CMO No. 75, s. 2017. The table presents that of the nine (9) syllabi available, eight (8) CLOs aligned to PO 6.3.2.a, and PO 6.3.2.b ranked 1.5th;

five (5) for PO 6.3.2.d ranked 3rd; four (4) for PO 6.3.2.f ranked 4th; two (2) for PO 6.3.2.e "ranked 5th, and one (1) PO 6.3.2.c ranked 6th.

Table 2c: Rank Results of the Alignment of Mathematics Course Learning Outcomes (CLOs) vis-à-vis Performance Indicators (PIs) and Program Outcomes (POs) in CMO No. 75, s. 2017

Program Outcomes (POs) in CMO No. 75, s. 2017	**Performance Indicators (PIs)**	**No. of Mathematics CLOs**	**No. of CLOs aligned to POs in CMO No.75, s. 2017**	**Rank**
6.3.3. a Exhibit competence in mathematical concepts and procedures	• Explain and illustrate clearly, accurately, and comprehensively the basic mathematical concepts, using relevant examples as needed	7	10	1
	• Demonstrate in detail basic mathematical procedures	7		
	• Show the connections between mathematical concepts that are released to one another	9		
	• Provide examples to illustrate the application of mathematical concepts and procedures	6		
6.3.3. b Exhibit proficiency in relating mathematics to other curricular areas	• Create a curriculum guide that shows how mathematics can be integrated with other curricular areas	0	9	2
	• Identify teaching activities that support the implementation of the curriculum guide	5		
	• Develop and utilize instructional materials that support the integration of mathematics with other curricular areas	2		
	• Utilize appropriate technologies to achieve the learning outcomes.	4		
6.3.3. c Manifest meaningful and comprehensive pedagogical content knowledge (PCK) or mathematics.	• Demonstrate skills in various methods of learning in mathematics, such as conducting investigations, modeling, and doing research	3	6	4.5
	• Create and utilize learning experiences in the classroom that develop the learners' skills in discovery learning, problem-solving, and critical thinking	2		
6.3.3. d Demonstrate competence in designing, constructing, and	• Design and utilize varied assessment tools in mathematics, including alternative forms of assessment	3	3	6
	• Analyze assessment results and use these to improve learning and teaching.	1		

utilizing different forms of assessment in mathematics	• Provide timely feedback on assessment results to students.	0		
6.3.3. e Demonstrate proficiency in problem-solving by solving and creating routine and non-routine problems with different levels of complexity.	• Demonstrate skills in various problem-solving heuristics	1	6	4.5
	• Select suitable examples to explain the various problem-solving heuristics	4		
	• Manifest creativity and critical thinking when selecting examples and problems to be used in the classroom and the assessment of students' learning	2		
	• Use varied resources for selecting and creating problems to develop the student's problem-solving skills	1		
6.3.3. f Use effectively appropriate approaches, methods, and techniques in teaching mathematics, including technology tools	• Demonstrate knowledge and skills in varied approaches and methods of teaching mathematics	5	7	3
	• Manifest discretion when selecting approaches or methods that would be effective in teaching particular lessons	1		
	• Utilizes a variety of student-centered approaches and methods in the classroom	1		
	• Demonstrate skills in the use of standard mathematical software for teaching and learning mathematical concepts, e.g., Graphmatica, Geogebra, and Geometer's Sketchpad	2		
	• Develop and use materials that guide the students in using mathematical software for discovering and learning mathematical concepts	1		
6.3.3. g Appreciate mathematics as an opportunity for creative work, moments of discovery, and gaining insights into the world	• Model in class such mathematical attitudes as delight after having found the solution to a problem or a sense of wonder at how certain mathematical concepts evolved	1	2	7
	• Develop lessons that can help students appreciate the use of mathematics in daily life	1		

Table 2c displays the rank results of mathematics CLOs vis-à-vis PIs and POs in CMO No.75, s. 2017. The results show that of the fourteen (14) syllabi available, ten (10) CLOs are aligned to PO 6.3.3. ranked 1st; nine

(9) for PO 6.3.3.b ranked 2nd; seven (7) under PO 6.3.3.f ranked 3rd; six (6) for PO 6.3.3., and PO 6.3.3.e ranked 4.5th; three (3) aligned to PO 6.3.3.d ranked 6th; and two (2) for PO 6.3.3.g ranked seventh (7th).

Table 2d: Results of the Rank of Science Course Learning Outcomes (CLOs) vis-à-vis Performance Indicators (PIs) and Program Outcomes (POs) in CMO No. 17 s. 2017

Program Outcomes (POs) in CMO 75, s. 2017	**Performance Indicators (PIs)**	**No. of Science CLOs**	**No. of CLOs aligned to POs in CMO No.75, s. 2017**	**Rank**
6.3.4. a Demonstrate a deep understanding of scientific concepts and principles	• Display a basic and comprehensive understanding of knowledge and principles of the subject matter in the sciences	9	9	1
6.3.4. b Apply scientific inquiry in teaching and learning	• Apply scientific principles to solve current problems.	4	5	3
	• Uses scientific inquiry in understanding and explaining natural phenomena.	5		
6.3.4. c Utilize effective science teaching and assessment methods	• Design and utilize appropriate instructional materials in Science	0	5	3
	• Employ effective teaching techniques for diverse types of learners in varied learning conditions	3		
	• Design and utilize a variety of appropriate assessment techniques to monitor and evaluate learning	3		
	• Provide regular feedback to students	1		
6.3.4. d Manifest meaningful and comprehensive pedagogical content knowledge (PCKPCK of the sciences.	• Utilize appropriate pedagogy and use of technology for the different science content areas	1	5	3
	• Demonstrate skills in various methods of teaching-learning in the sciences, including conducting science investigations, making models and prototypes, and doing science research	4		
	• Create and utilize learning experiences in the classrooms to develop learner's skills in discovery learning, problem learning, and critical thinking	0		

Table 2d shows the rank results of science CLOs vis-à-vis PIs and POs in CMO No.75, s. 2017. The results show that of the ten (10) syllabi available, nine (9) CLOs are aligned to PO 6.3.4. a ranked 1st; five (5) for PO 6.3.4.b; PO 6.3.4.c, and 6.3.4.d ranked 3rd.

Table 2e: Rank Results of the Alignment of Social Studies Course Learning Outcomes (CLOs) vis-à-vis Performance Indicators (PIs) and Program Outcomes (POs) in CMO No. 17 s. 2017

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume IX Issue II February 2025

Program Outcomes (POs) in CMO NO. 75, s. 2017	Performance Indicators (PIs)	No. of Social Studies CLOs	No. of CLOs aligned to POs in CMO No.75, s. 2017	Rank
6.3.5. a Utilize appropriate various sociocultural and historical materials in explaining current issues	• Relate current events with available historical data to help students develop critical perspectives on social issues	7	11	2
	• Draw the connections between and among people, events, and places to analyze local and global social issues	10		
6.3.5. b Organize communities towards self-reliance and self-sufficiency	• Design community-based activities to help learners achieve an integrated view of social development	2	2	7
	• Organize student clubs/activities for community outreach projects	0		
	• Conduct public assemblies to increase social awareness	0		
6.3.5. c Demonstrate leadership skills that will help in teaching or training students who will empower their communities	• Train students to be involved in community-related activities	3	3	6
	• Establish linkages with government and non-government organizations to promote public welfare	0		
6.3.5. d Integrate local and global perspectives in teaching the principle of the common good	• Access information from local and foreign media about social issues to enhance teaching	7	13	1
	• Distinguish truthful from false Presentation of information from social media	9		
6.3.5. e Employ principles of sustainable development in teaching and learning	• Initiate advocacy campaigns towards the attainment of sustainable development goals	1	7	4
	• Organize initiatives for the stewardship of natural resources	1		
	• Participate in activities that promote environmental consciousness	5		
	• Integrate the environmental principles in learning and teaching	5		
6.3.5. f Show scholarship in research and further learning.	• Participate in research to improve the teaching and learning of social studies	4	4	5
	• Join seminars, trainings, workshops, and related activities to improve the teaching and learning of social studies	4		

6.3.5. g Display the qualities of an innovative teacher who has mastery of the subject matter	• Design innovative strategies that heighten students' engagement in the social studies classroom	9	9	3
	• Produce assessment materials to measure student's performance	5		

Table 2e highlights the rank results of Social Studies CLOs vis-à-vis PIs and POs in CMO No. 75, s. 2017. The results show that of the sixteen (16) syllabi available, thirteen (13) CLOs are aligned to PO 6.3.5 d which ranked 1st; eleven (11) PO 6.3.5. a, ranked (2nd); nine (9) for PO 6.3.5.g ranked 3rd; seven (7) under PO 6.3.5.e, ranked 4th; four (4) with PO 6.3.5.f, ranked 5th; three (3) for PO 6.3.5.c, ranked 6th; and two (2) for PO 6.3.5.b ranked 7th

The difficulty in achieving the program outcomes was supported by the study conducted by Chicca and Shellenbarger (2024), which found in the case of nursing program that evaluating various nursing program outcomes helps faculty assess program quality. Evaluation efforts may reveal that programs need to meet their established benchmarks. Nurse educators and internal and external stakeholders should engage in systematic yet purposeful quality improvement efforts to boost program outcomes that display declines in performance. Faculty may need help to determine needed changes and how to implement and evaluate modifications that can enhance performance successfully. Thus, the study presents a roadmap for improving program outcomes that is systematic and purposeful, and ongoing quality improvement efforts help prepare to care, safe and competent nurses who positively impact healthcare.

Gauging learning in higher education and determining whether students are meeting the stated learning outcomes is a complex process because there currently needs to be more consensus on measuring student general learning across programs and institutions (Barclay & Ercikan, 2017; Penn, 2011; Porter, 2012).

It was also emphasized that outcomes are precise learning results that learners must demonstrate at the end of significant learning experiences, such as what they can do with what they know and have learned. Outcomes are actions/ performances that successfully embody and reflect learner competence in using content, information, ideas, and tools Choi, (2020). Vella, Berardinelli, and Burrow (1998) highlighted the importance of accountability mechanisms that directly reflect student performance and "know what they know." Hence, learning outcomes describe what is learned versus what is taught over time.

Further, reviewing the status of OBE in educational institutions is a crucial step in ensuring that students receive a high-quality education that prepares them for success in their future careers (Irfan et al. Islam, Sheikh & Sood; Siddhi, 2023). Also, educational institutions are always attentive and watchful about the quality of graduates produced and introduced in the market (Yusoff et al., 2014). Article II/Section 7 of CMO No. 46, 2012, emphasizes the kind of commitment is translated into having a mindset for quality assurance, which is "about ensuring that there are mechanisms procedures and processes in place to ensure that the desired quality, however defined and measured, is delivered."

Table 3 : Profile of the Assessment Strategies Employed by English, Filipino, Mathematics, Science, and Social Studies Teachers

English	**Filipino**	**ath**	**Science**	**Social Studies**
• Creating graphic organizer • Project method • Drafting a script	• Pagsasagawa ng ulat • Pagbuo ng burador at pagsasaayos ng mga bahagi	• Reflection • Triad Groups • Do-Show • K.W.L. Chart • Cooperative	• Concept-check • Situationalysis • Problem-tree Analysis • Case Analysis	• Problem-Solving • Informal and FormalDebate • Group Activity: 3Rs- Read, React,

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume IX Issue II February 2025

• Drafting a book • Storytelling • Drafting a comic strip • Case studies • Reflection log • Affinity mapping • Deconstructing Reading Texts • Cooperative Learning • Independent Research • Design Thinking • Drawing implication • Creating a Differentiation • Mixed-Pair-Discuss • Match Mine: Trace • What I Say Activity • Discourse Analysis • Writing Argument Report • Societal Survey • Three Part Interview • Wrapping Insights • T-Chart • Demo teaching • Summative test	• Pagbuo ng pahayagang pangkampus • Pagbuo ng timeline • Pagsulat ng balita • Pagsusuri ng halimbawa ng editorial/lathalain • Pagsusuri ng mga bahagi ng pahayagan • Pagbuo ng akrostik • Pagbuo ng compilation tungkol sa panitikan ng rehiyon • Pagsusulat • ngpananaliksik • Paggawa ng maliit ng diksyunaryo • Summative test	Learning • Buzz Session • Class data Gathering • Interactive Discussion • Performance Task • Problem set • Summative test	• Graphic organizer • Laboratory Activities • Confirmatory Inquiry-based Learning • Video Analysis • Essay Writing • Paper presentation • Problem-Solution Paper • Term Paper • Essay Output • Scientific Paper Presentation • Earthquake Drill Simulation • Volcanic Eruption Preparedness Campaign • Problem Solution Paper • Reflection Paper • Laboratory Activities • Oral and Written Report with Scoring Rubrics • Survey Report/ Fieldworks/Field Research Activity • Portfolio with Scoring Rubrics • Summative test	Reflect • Concept Mapping • Group Activity" Fishing the Concept • Map Tracing • Making Timeline • Making Pictogram • Cooperative Strategy • Brainstorming: {3Ds - Discussion, Debate, Delivery, • Reflection Paper • Model Making • Simulation • Case Analysis • Video Analysis • Movie Critique paper • Composition of Basic Legal Documents • Community-based Research • Sample Formulated Assessments on Basic Laws • Community-based - Instructional Materials • Reflection Paper • Recorded Simulation • Video Analysis Output • Lesson Plan Output • Teaching Demonstration with rubric

				• Pictogram/ Infographics • Summarizing Concepts • Writing a Lesson Plan • Doing simple research • Independent research • Making Reflections • Summative test

Table 3 presents the profile of the assessment strategies employed by English teachers to achieve their learning outcomes. The teachers teaching BSED major in English, Filipino, Mathematics, Science, and Social Studies employ summative and formative assessments appropriate for the different topics in their respective disciplines. Mostly, if not all, teachers gave paper-pencil tests, alternative assessments such as surveys, reflection papers, laboratory experiments, field/nature trips, gallery exhibits, making modules, news making, cartooning, advocacy campaign materials, and other forms of assessments to measure students' performance. Teacher employed a variety of assessment strategies; however, there is a need to explore more recent updates in this aspect aligned with their specialization to strengthen their skills for both formative and summative methods.

Black & William (2009), in the study of Westbroek, H. B., van Rens, L., van den Berg, E., & Janssen, F. (2020), emphasized that assessment for learning can be done by monitoring the quality of the learning process and on providing continuous feedback to guide learning and teaching can positively influence learning processes. It also can contribute to developing metacognitive skills and a feeling of ownership. If used effectively, the assessment of learning can lead to increased student learning and achievement (Kim et al. (2020); Andersson & Palm, 2017; Fletcher & Shaw, 2012; Pinger et al., 2018; Yin et al., 2013). The findings suggested five critical factors from the literature that impact student learning outcomes, including assessment strategies, learning objectives based on level of complexity, student-preferred learning styles, English language competency, and employer requirements. Asim, Hafiz & Vaz, Anthony & Ahmed, Ashfaq & Sadiq, Samreen. (2021). The study results highlighted the participants' experiences related to changes in teaching, academic activities, exams, marks, and quality of teaching in OBE the curriculum and how they can distinguish the same from their traditional curriculum. As emphasized by CHED, the teaching-learning system will have its appropriate assessment of student performance (CHED Presentation, 2012). Also, teachers can adapt their instruction to the needs of learners based on information derived from assessments as a form of feedback, modify their teaching and provide feedback to students, and use feedback to steer their learning processes directly (Schildkamp et al., 2020; Bennett, 2011; Black & Wiliam, 1998; Sadler, 1989). The result was also supported by the study conducted by Xiaomei Wei, Nadira Saab, and Wilfried Admiraal (2021) that learning outcomes that were reviewed concerned cognitive, behavioral, and affective learning outcomes. Twenty-five assessment approaches were employed to examine these outcomes and identify the assessment characteristics. The results indicate that considering learning outcomes at the beginning of course design could support the formulation of explicit assessment goals and, in this way, instruct learners to work toward learning outcomes. A combination of knowledge tests and skill tasks can be used to examine cognitive outcomes in a particular Massive Open Online Courses (MOOCs). Outcome-oriented feedback rubrics are beneficial to support learner essay performance, and interpretations of the utilization of rubrics could better guide providers in giving peer feedback. Various behavioral and affective outcomes reflect multiple aspects of participant learning in MOOCs and contribute to a better understanding by teachers and the provision of learning support.

Article II/Section 6 of CMO No. 46, 2012, defines quality as the alignment and consistency of the learning environment with the institution's vision, mission, and goals demonstrated by exceptional learning and service

outcomes and the development of a culture of quality. Article II/Section 7 of CMO No. 46, 2012, emphasizes the kind of commitment is translated into having a mindset for quality assurance, which is "about ensuring that there are mechanisms procedures and processes in place to ensure that the desired quality, however defined and measured, is delivered." CHED emphasizes that the starting point of quality assurance is articulating the desired quality outcomes set within the HEI's Vision, Mission, and Goals (VMG) context. Further, appropriate assessment tools should be used to measure performance and check if the mechanisms, procedures, and processes deliver the desired quality. Such systems and processes, when properly implemented, could lead to quality outcomes and sustainable programs and initiatives. Quality Assurance systems "look at institutional performance in terms of the HEI's capacity to translate policy (in terms of VMG) into quality programs and results.

OBE is a comprehensive approach to organizing and operating an education system (Spady, 1994), involves the restructuring of curriculum, assessment, and reporting practices in education to reflect the achievement of high-order learning and mastery rather than the accumulation of course credits"(Vidyakala et al., 2020). It aims to facilitate desired changes within the learners by increasing knowledge, developing skills, and positively influencing attitudes, values, and judgment. It expresses the determination of what the best way to learn is first. Once the end goal (product or outcome) is determined, the strategies, processes, techniques, and other ways and means can be put into place to achieve the goal. OBE, like other concepts in learning, remains the same, that is, by evaluating what is required to achieve and accomplish learning outcomes.

Output: Proposed Contextualized Steps to Assess the Alignment of Course Learning Outcomes and Program Outcomes of the BSEd

Reviewing the status of OBE in educational institutions is a crucial step in ensuring that students receive a high-quality education that prepares them for success in their future careers (Irfan et al. Islam, Sheikh & Sood; Siddhi, 2023). Also, educational institutions are always attentive and watchful about the quality of graduates produced and introduced in the market (Yusoff et al., 2014). Article II/Section 7 of CMO No. 46, 2012, emphasizes the kind of commitment is translated into having a mindset for quality assurance, which is "about ensuring that there are mechanisms procedures and processes in place to ensure that the desired quality, however defined and measured, is delivered". The outcomes are precise learning results that learners must demonstrate at the end of significant learning experiences, such as what they can do with what they know and have learned. These are actions/ performances that successfully embody and reflect learner competence in using content, information, ideas, and tools Choi, (2020). Vella, Berardinelli, and Burrow (1998) highlighted the importance of accountability mechanisms that directly reflect student performance and "know what they know." Hence, learning outcomes describe what is learned versus what is taught over time.

To guide the university in evaluating its curriculum or programs to ensure quality education for the students and graduates, the following steps are proposed for alignment of the curriculum and as output of this study.

Output 1-Figure 2: Proposed Contextualized Steps to Assess the Alignment of Course Learning Outcomes and Program Outcomes of the BSEd

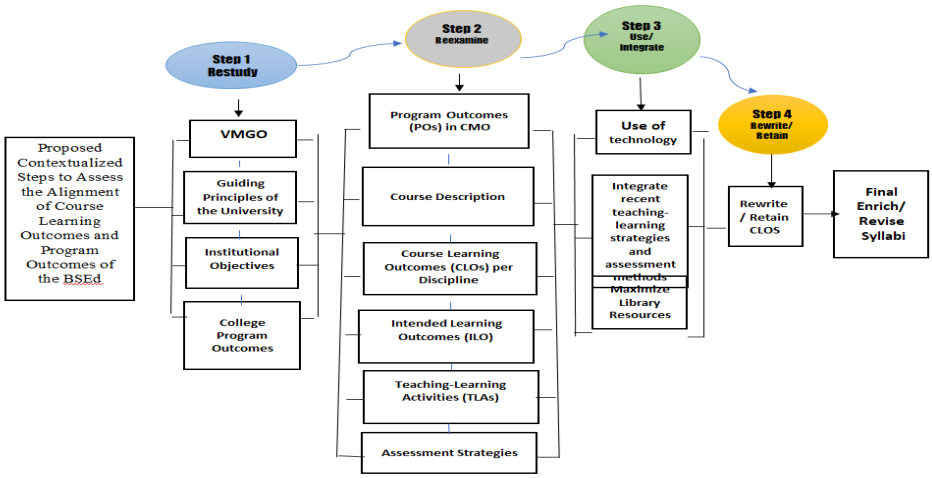

Figure 2 shows the steps for curriculum alignment through syllabi revision as one of the insights in program enrichment. Considering the framework of OBE, this was contextualized according to the practice of the university from the VMGO, University Guiding Principles, Institutional Objectives, and POs in CMO No. 75, s. 2017, CLOs, ILOs, TLAs and Assessment Methods. The following steps are as follows: Step 1: Restudy the Vision, Mission, Goals and Objectives, guiding principles of the university, and institutional objectives for a comprehensive understanding of the different statements of what graduates of the institution are supposed to be able to do, the values that can be inculcated as the distinct characteristics should the graduates possess, and the college program outcomes to analyze the statements of what graduates from a particular degree program should be able to do, and to be integrated into the formulation of CLOs.

Step 2: Reexamine the program outcomes stipulated in COM No. 75, s. 2017 to determine the expected knowledge and skills to be achieved by the program graduates. The CLOs formulated and how these can be elucidated in the intended learning outcomes (ILOs). From the crafted ILOs, look for appropriate teaching-learning strategies (TLAs) and assessment strategies to achieve these. Then, review again the alignment of the ILOS, TLAs, and assessment strategies in achieving CLOs to ensure that the student's knowledge, skills, and attitudes that should be able, mastered, or developed after a given course have been responded to.

Step 3: Integrate the use of technology or any online apps in the syllabi for engaging discussion, as well as recent teaching-learning strategies and assessment methods, and maximize library materials available for resources and references.

Step 4: Rewrite the CLOs if these are not aligned with the program outcomes; however, retain the CLOs if these are aligned with the program outcomes.

The process can be repeated from steps 1 to 4 to ensure the alignment of the different areas in the syllabi.

Article II/Section 6 of CMO No. 46, 2012, CHED defines quality as the alignment and consistency of the learning environment with the institution's vision, mission, and goals demonstrated by exceptional learning and service outcomes and the development of a culture of QUALITY. Article II/Section 7 of CMO No. 46, 2012, emphasizes that this kind of commitment is translated into having a mindset for QA which is "about ensuring that there are mechanisms, procedures, and processes in place to ensure that the desired quality, however, defined and measured, is delivered." The starting point of QA is articulating the desired quality outcomes set within the context of the HEI's Vision, Mission, and Goals (VMG). Appropriate assessment tools should be used to measure performance and check if the mechanisms, procedures, and processes deliver the desired quality. Such systems and processes, when properly implemented, could lead to quality outcomes and sustainable programs and initiatives. Quality Assurance systems then “look at institutional performance in terms of the HEI’s capacity to translate policy (in terms of VMG) into quality programs and quality results (CHED Presentation, 2012).

Anderson (2005) emphasized that curriculum alignment is the coherence between all components of an educational system, particularly between (1) learning objectives, (2) assessment, and (3) teaching. Curriculum alignment is crucial in realizing learning objectives, but practical problems often must be addressed in higher education. The adverse effect of misalignment is further amplified by the need for more student awareness of their position within the curriculum (de Meij & Merx, (2018). According to Biggs and Tang (2007), curriculum alignment is crucial for the quality of learning because it is a constructive coherence between teaching, learning, and assessment to achieve actual learning outcomes. In optimizing students’ learning, teachers ensure that every activity given to students helps them realize the learning objectives.

The developments in OBE and innovative shifts in its pedagogical approaches have reshaped the curricula in schools’ learning environments. This instructional design has gained popularity due to its authenticity and systematic approach. However, this needs organized supervision and faculty training to achieve the desired goals for the program (Iqbal et al., Ian & Ahmad, Shahzad & Almigbal; Turkey, 2020) and a significant component of education, specifically in teaching and learning procedures. It highlights the outcome, where students’ accomplishments are computable, verified, and could be improved (Sainy, (2018) & De Guzman, Edaño, & Umayan, 2017).

CONCLUSIONS

Teachers need to familiarize themselves with the performance indicators in each program outcome stipulated in the CMO 75 s. 2017 for the Bachelor of Secondary Education (BSED) program effected an imbalance in the distribution of CLOs that was aligned with the program outcomes. The newly formulated VMGO and Guiding Principles were communicated but needed to be thoroughly discussed for a deeper understanding of the goals. The inclusion of the institutional objectives in syllabi should have been emphasized when revising instructional materials. The confusion on how to do the curriculum alignment process contributes to ambiguous course learning outcomes formulated by the teachers in the BSED program. Moreover, the faculty employed many assessment strategies.

RECOMMENDATIONS

Based on the findings and conclusions, the following recommendations were made:

Policymakers. The school administration may design a training workshop for the teachers, highlighting the critical areas needed to assess the alignment of the curriculum. It is also suggested that department heads carefully review all the submitted syllabi in the different BSED programs to ensure correct alignment. The Director of Instruction and the Dean of College may adopt the plan of steps as output of this study as a guide in the conduct of training -workshop for the alignment of the VMGO, Guiding Principles, institutional objectives, CLOS, ILOs, TLAs, and assessment methods in the syllabi to enrich the BSED program. Additionally, the administration may incorporate into the training the use of a variety of appropriate assessment techniques to enhance the assessment methods for both formative and summativ

Educators. All faculty members may be guided on aligning the different areas when they revise the syllabi. Seasoned and novice teachers may emphasize the performance indicators and program outcomes in CMO No. 75, s. 2017, in the revision or enrichment of their syllabi to guarantee that they accomplish the CMO-established program outcomes.

Future Research. To carry out additional research on how the results of the BSED program compare to CHED CMO 75, s. 2017, with more factors that might expand their investigation and lead to more significant discoveries and innovations in the field of education.

REFERENCES

1. Abusin, S., Al-Emadi, N., & Mandikiana, B. (2023). An Evaluation of the Alignment of Surplus Food Recovery and Redistribution Technologies with the Circular Economy. Sustainability, 15(16), 12355.
2. Allen, L. (2008). Where exemplary ERP implementations go wrong: A case for continuity. Business Process Management Journal, 14(3), 327–337.
3. A Review on Outcome Based Education and Factors That Impact Student Learning Outcomes in Tertiary Education System | Asim | International Education Studies | CCSE. https://ccsenet.org/journal/index.php/ies/article/view/0/44631
4. Asim, Hafiz & Vaz, Anthony & Ahmed, Ashfaq & Sadiq, Samreen. (2021). A Review on Outcome Based Education and Factors That Impact Student Learning Outcomes in Tertiary Education System. International Education Studies. 14. 1. 10.5539/ies. v14n2p1
5. Babu, A. & Roy, A. (2023). The Outcome-Based Education Versus Traditional Education: The Perspective Analysis of Teachers.
6. Bachelor of Secondary Education | Pangasinan State University Asingan Campus. https://asingan.psu.edu.ph/bachelor-of-secondary-education/
7. Barclay McKeown, S., & Ercikan, K. (2017). Student Perceptions About Their General Learning Outcomes: Do They Add Up? AERA Open, 3(2). https://doi.org/10.1177/2332858417701712
8. Balid, W., Alrouh, I., Hussian, A., & Abdulwahed, M. (2012). Systems engineering design of engineering education: A case of an embedded systems course. Paper presented at the Proceedings of IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE) 2012. https://doi.org/10.1109/TALE.2012.6360407

9. Barman, Linda & Silén, Charlotte & Laksov, Klara. (2014). Outcome-based education enacted: Teachers' tensions in balancing between student learning and bureaucracy. Advances in health sciences education: theory and practice. 19. 10.1007/s10459-013-9491-3.
10. Black, P. J., & Wiliam, D. (2009). Developing the theory of formative assessment. Educational Assessment, Evaluation and Accountability, 21(1), 5–31. https://doi.org/10.1007/s11092-008-9068-5
11. Bhat, Shankaranarayana. (2018). Outcome Based Education - An Overview. Introduction to Outcome Based Education
12. Carroll, J. B. (2012). Words, meanings, and concepts (I) Readings in Educational Psychology (pp. 33-95). Routledge.
13. Chaffey College. (2019). Program learning outcomes - Chaffey College. Retrieved from https://www.chaffey.edu/outcomes-and-assessment/program-learning-outcomes
14. Chicca, J., & Shellenbarger, T. (2024). A roadmap for improving nursing program outcomes. Teaching and Learning in Nursing, 19(1), 10-15. https://doi.org/10.1016/j.teln.2023.04.018
15. C, Lavanya. (2022). Assessment and Attainment of Course Outcomes and Program Outcomes. Journal of Engineering Education Transformations, doi: 10.16920/jeet/2022/v35i4/22109
16. Center for Teaching and Learning. (n.d.). Aligning what we teach with how we teach it. [Website] Cornell University. Retrieved May 24, 2024, from https://teaching.cornell.edu/teaching-resources/teaching-cornell-guide/inclusive-course-design/curriculum-alignment
17. Choi, Y. (2020). Developing a Specialization for LAM Convergence Using a Competency-Based Approach in an LIS Graduate Curriculum. Journal of Education for Library and Information Science, 61(2), 212–228.
18. De Guzman, M. F. D., Edaño, D. C., & Umayan, Z. D. (2017). Understanding the essence Of the outcomes-based education (OBEOBE) and knowledge of its implementation in a technological university in the Philippines. Asia Pacific Journal of Multidisciplinary Research, 5(4).
19. Eze, S.G.N.S.G.N. (2009). FEATURES OF QUALITY EDUCATION. Introduction.
20. Guskey, T. R. (2005). Formative classroom assessment and Benjamin S. Bloom: Theory, Research and Implications. Online Submission.
21. Guskey, T. R., & Passaro, P. D. (1994). Teacher Efficacy: A Study of Construct Dimensions. American Educational Research Journal, 31(3), 627-643. https://doi.org/10.3102/00028312031003627
22. Hatch, T. (2013). Beneath the surface of accountability: Answerability, responsibility and capacity-building in recent education reforms in Norway. Journal of Educational Change, 14(2), 113–138. https://doi.org/10.1007/s10833-012-9206-1
23. Iqbal, Shazia & Willis, Ian & Ahmad, Shahzad & Almigbal, Turky. (2020). Outcome-based Education: evaluation, implementation, and faculty development. MedEdPublish. 9. 10.15694/mep.2020.000121.1.
24. Irfan, S. & Irfan Ul Islam, Sheikh & Sood, Siddhi. (2023). Studying the Status of Outcome Based Education in Educational Institutions: A Systematic Literature Review. 12. 14234-14243. 10.48047/ecb/2023.12.si4.1289.
25. J, Suji & M, Thangatamilan & R, Sureshkumar & P, Revathi. (2023). Assessment of Program Outcomes in Outcome Based Education through Students' Co-Curricular Activities. Journal of Engineering Education Transformations. 36. 58-64. 10.16920/jeet/2023/v36i4/23115.
26. Johnson, C. E., Boon, H. J., & Dinan Thompson, M. (2020). Curriculum Alignment After Reforms: A Systematic Review with Considerations for Queensland Pre- and In-service Teachers. Australian Journal of Teacher Education, 45 (11). Retrieved from https://ro.ecu.edu.au/ajte/vol45/iss11/3
27. Martone, Andrea & Sireci, S. (2009). Evaluating Alignment Among Curriculum, Assessment and Instruction. Review of Educational Research - REV EDUC RES. 79. 1332-1361. 10.3102/0034654309341375.
28. Macayan, J. V. (2017). Implementing Outcome-Based Education (OBEOBE) framework: Implications for assessment of students' performance. Educational Measurement and Evaluation Review (2017), 8(1), 4.
29. Molano, T. C. (2023). Bridging the Gap Between Knowledge and Practice on the Implementation of Outcomes-Based Education. https://core.ac.uk/download/574722386.pdf
30. Nhleko, Y., & Van der Westhuizen, T. (2021). Curriculum Alignment: The Perspectives of University Students on the Impact of Industry 4.0 on Entrepreneurship Education Within Higher Education. European Conference on Innovation and Entrepreneurship, (), 642-651, XXV, XXX.

31. Parag Omar. (2002). Outcomes-based education. 10.13140/RG.2.2.14398.89923. from https://www.researchgate.net/publication/317209834_Outcomes_Based_Education
32. Peters, R. S. (1967). The concept of education. Routledge & Kegan Paul
33. Sainy, R. (2018). Outcome Based Education: A conceptual framework. International Journal of Research and Innovation in Social Science (IDRISS) |Volume II, Issue IX, September 2018|ISSN 2454-618
34. Shaikh, H. & Kumar, Prof. (2022). Implementing an Application for Attainment Calculation of Program Outcomes and Course Outcomes for Courses of University Affiliated Engineering Programs. International Journal of Engineering and Advanced Technology. 11. 49-56. 10.35940/ijeat.D3409.0411422.
35. Spady, W. G. (1994). Outcome-Based Education: Critical Issues and Answers. American Association of School Administrators.
36. Sureshkumar, R., Revathi, P. (2023). Assessment of Program Outcomes in Outcome Based Education through Students' Co-Curricular Activities. Journal of Engineering Education Transformations, doi: 10.16920/jeet/2023/v36i4/23115
37. The Global Goals. (2024, May 9). Goal 4: Quality education [SNIPPET]. Retrieved from https://www.globalgoals.org/goals/4-quality-education/
38. Tucker, B. A., & Russell, R. F. (2004). The Influence of the Transformational Leader. Journal of Leadership & Organizational Studies, 10(4), 103-111. https://doi.org/10.1177/107179190401000408
39. Vahid, A., & Levine, S. (2019). Collaborative Online International Learning: A Pedagogical Intervention to Enrich Students' Learning. European Conference on E-Learning, (), 579-587, XVII.
40. Vidyakala, K., Deepa, J., & Geerthana, K. (2020). Assessment of Outcome-Based Education Among Mathematics Students in Coimbatore. Social Science Research Network. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3616907
41. Vapnik, Vladimir N. (2013). The Nature of Statistical Learning Theory (2, illustrated). Information Science and Statistics. Springer Science & Business Media.
42. Westbroek, H. B., van Rens, L., van den Berg, E., & Janssen, F. (2020). A practical approach to Assessment for learning and differentiated instruction. International Journal of Science Education, 42(6), 955–976. https://doi.org/10.1080/09500693.2020.1744044
43. Wijngaards-de Meij, L., & Merx, S. (2018). Improving curriculum alignment and Achieving learning goals by making the curriculum visible. International Journal for Academic Development, 23(3), 219–231. https://doi.org/10.1080/1360144X.2018.1462187
44. Wraga, W. (2017). Understanding the Tyler rationale: Basic Principles of Curriculum and Instruction in historical context. Espacio, Tiempo y Educación. 4. 227. 10.14516/ete.156.
45. Xiaomei Wei, Nadira Saab, Wilfried Admiraal, (2021). Assessment of cognitive, behavioral, and Affective learning outcomes in massive open online courses: A systematic literature review, Computers & Education, Volume 163, 104097, ISSN 0360-1315, https://doi.org/10.1016/j.compedu.2020.104097.
46. Yusoff, Y. M., Fuaad, N. F. A., Yasin, R. B. M., & Tawil, N. M. (2014). Achievement of Program outcomes in outcome-based education implementation—a meta-analysis. Paper presented at the Proceedings of the 2014 International Conference on Industrial Engineering and Operational Management, Bali, Indonesia. https://doi.org/10.6007/IJARBSS/v7-i6/3352
47. (2024). Philippines: The province of Iloilo has signed an agreement with universities and industry groups.