

Curriculum Quality Audit of Bachelor of Technology and Livelihood Education Specializations at Tarlac Agricultural University: Inputs for Program Enhancement

Jefferson L. Bautista¹

¹(Tarlac Agricultural University, Philippines)

ABSTRACT: *This study, titled “Curriculum Quality Audit of the Bachelor of Technology and Livelihood Education Specializations at Tarlac Agricultural University: Inputs for Program Enhancement,” assessed the alignment of the BTLED program with CHED Memorandum Order No. 78, s. 2017 and TESDA National Certificate (NC) competencies. Utilizing a quantitative-descriptive research design and Curriculum Quality Audit (CQA) with heat mapping, the study analyzed alignment across three major strands: Agri-Fishery Arts, Home Economics, and Information and Communication Technology. Findings revealed a strong alignment between the BTLED program outcomes and CHED-prescribed outcomes, indicating the curriculum’s adherence to national educational standards. However, significant gaps were identified in aligning course content with TESDA competencies, particularly in the Basic and Common domains, which can be addressed in other program subjects/courses if analyzed holistically. These discrepancies, however, may hinder students’ readiness for certification and industry employment. Based on these findings, an action plan for program enhancement was developed to enhance curriculum alignment, strengthen faculty capacity, and promote industry collaboration. The study recommends immediate curriculum visit, faculty training in competency-based education, and adoption of the proposed action plan to ensure that BTLED graduates are well-prepared for both teaching roles and TESDA certification standards.*

KEYWORDS –Bachelor of Technology and Livelihood Education (BTLEd), Curriculum Quality Audit (CQA), Outcomes-based Education (OBE), Technical Education and Skills Development Authority (TESDA) National Certificate Competencies, Program Enhancement.

I. INTRODUCTION

The primary aim of education is to develop and improve the teaching and learning process. One way of doing so is in the preparation for the curriculum which will be implemented in a certain program. The curriculum serves as the blueprint of plans to attain such goal. Teachers craft and plan different activities based on the course subject that they are going to teach. In tertiary schools, one way that instructors are doing this is by crafting syllabi that consist of the learning outcomes, objectives, teaching and learning activities, and the like. Instructional and learning activities are being planned and prepared based on the program being offered by a university/college, and the curriculum that is being implemented. In doing so, course instructors must align their content and other related parts of the syllabus to the program’s policies, guidelines, and standards to attain the desired outcomes of the program, benefiting both the students and the institution.

Tarlac Agricultural University-College of Education in 2018 implemented the Bachelor of Technology and Livelihood Education following the Commission on Higher Education Memorandum Order Number 78 Series of 2017 (CMO No. 78, S.2017) which provides the pertinent provisions on Policies, Standards, and Guidelines (PSG) of Bachelor of Technology and Livelihood Education (BTLED) Program. The said memorandum is following the Higher Education Act of 1994 and in pursuance of an outcomes-based quality assurance system as advocated under CMO 46 s. 2012 (Policy Standard To Enhance Quality Assurance (QA) in Philippine Higher Education Through An Outcomes Based and Typology Based QA).

With regards to the outcomes-based quality assurance system mentioned above, outcomes-based education (OBE) syllabi are being prepared by course instructors to make sure that the desired outcomes of a certain course or program are followed and implemented, in adherence to Article VII Section 21 of CMO 78 s 2017. An educational outcome, by definition in OBE, is an application of learning which is what students should be able to do by the end of the period (Spady, 1993). Hence, an outcome-based approach in education is a way in which curricular decisions are based on the learning outcomes that students are expected to achieve at the end of a course or program. It presupposes a certain approach to imparting and assessing learning, a transition from the instructor to the students as the focal point of the learning process. The change in paradigm likewise indicates that the process of learning entails a structure that begins by crafting a curriculum to ensure course outcomes correspond with program outcomes and that learning activities and assessments are aligned with each course's learning outcomes (Biggs and Tang, 2011). Consequently, OBE syllabi are being developed. OBE syllabi encourage instructors and students to share responsibility for learning and can influence student assessment and course evaluation (Harden, 1999). Designing a course using OBE syllabi starts with instructors planning the intended learning outcomes (instead of course objectives) in terms of students' knowledge, skills, values, and attitudes at the end of the learning process. Each of the learning outcomes will be used as a basis for instructors to select suitable teaching and learning activities and assignments. The report on students' performance through assessment will reveal the learners' level of achievement of expected outcomes. The reports will then be used to plan the teaching objectives and assess the present teaching, learning, and assessment processes (Biggs and Tang, 2007 as cited by Callaman, 2022). These factors must be considered in designing and crafting OBE syllabi. In the OBE paradigm, the focus of education changes from a centered around teachers-inputs-based "instruction" paradigm to a student-centered, outcomes-based pedagogical paradigm (Barr and Tagg, 1995).

In the context of the CMO 78 s. 2017 and the present curriculum being prepared by university/college instructors, the two must be aligned to attain the desired outcome of a program. Curriculum Quality Audit (CQA) is one way to identify the alignment in syllabus and certain standards. CQA involves comparing relevant parts of the syllabus to a set of standards. CQA is a distinctive form of curriculum mapping. It is goal-oriented, which provides a clear purpose, and it has distinctive processes and documentation. One process of CQA is heat mapping. The process of heat mapping is one method for determining such alignment between the curriculum and syllabus. Heat mapping is a novel low-cost, high-input technique of curriculum mapping. Heat mapping requires manual data entry, which can be time-consuming for extensive curriculums. There are no additional upfront expenditures. Heat mapping can assist integrated, spiral curriculum programs in identifying when and where essential topics are taught in the duration of the course. The heat maps display the necessary information and are simple for interpretation. Both the mapping process and the finished heat map can yield valuable information. This includes information regarding trends within the curriculum, areas for potential development in sessional design, and a more thorough understanding of the extent to which each lecture topic is covered (Clark et al., 2021). In a study by Burke et al (2016), the mapping of entire courses to United Kingdom (UK)-specific outcomes was accomplished using a simple heat map. The concept of grid colors represents covered topics and where they are found.

Likewise, one goal of the program is to ensure that graduates of BTLE must be qualified for Technical Vocational Education and Training (TVET) trainers and assessors after obtaining a certain certification. These certifications were given by the Technical Education and Skills Development Authority (TESDA) which serves as the Philippines' Technical Vocational Education and Training (TVET) authority. In lieu of this, learning activities and objectives of the OBE must be aligned as well with the competencies needed to get a certification that is being assessed by the TESDA. For instance, an Information and Communication Technology (ICT) major might have its National Certificate after the TESDA assessment with proper training and competencies learned from the program.

Tarlac Agricultural University-College of Education (TAU-CED) offers the Bachelor of Technology and Livelihood Education (BTLEd) Program since its implementation in 2018 in accordance with the CMO 78 s 2017. It offers three majors under BTLEd namely: Home Economics (H.E.), Information and Communication Technology (ICT), and Agriculture and Fishery Arts (AFA). Furthermore, TAU-CED has been using and implementing OBE-syllabi since its implementation in accordance with the CMO 78 s 2017.

With this regard, as there is not yet any study conducted related to the topic, as well as no substantial curriculum review has been conducted, in light with this reasons, this study sought to describe the alignment of the CMO 78 s 2017 and the OBE-syllabi being designed, crafted, and implemented by TAU-CED with the use of Curriculum Quality Audit and the heat mapping technique, to further see the curriculum quality assurance of the institution in the implementation of the program and usage of OBE syllabi. This study also described the alignment of the OBE syllabi of certain subjects to TESDA Certificate program competencies. This study may become a basis for a review of curriculum quality on OBE-syllabi. This study paved the way for the development of an action plan based on the data gathered in this study.

II. REVIEW OF RELATED LITERATURE AND STUDIES

Related Literature

Curriculum design and evaluation are crucial aspects of education that shape effective learning experiences (Brooks, 2013). Heat mapping, a data visualization technique, has gained prominence in education and allows educational institutions to analyze complex data sets and identify areas of strengths and weaknesses in the curriculum (Brooks, 2013). Heat maps visually represent the alignment between intended, enacted, and experienced curricula, helping educators identify areas that require attention or modification (Gikas & Grant, 2013).

Heat maps are a method of graphically representing data in which values are represented by color, making it simple to visualize and comprehend complex data at a glance. Modern heat maps are typically produced with specialized heat mapping software, although they can be created by hand (fullstory, 2023), this creates an easy-to-interpret visual aid that allows educators to identify trends and patterns.

One of the significant benefits of heat mapping in syllabus design is its ability to uncover gaps and overlaps in the curriculum. According to Gikas and Grant (2013), heat mapping enables educators to examine the alignment between intended, enacted, and experienced curricula. By visually representing these alignments and disparities, educators can recognize areas that require further attention or modification.

Heat mapping is a method of representation of data that is being used as well in curriculum quality audits. According to Philippine Normal University on Curriculum Quality Audit (nd), using heat maps enables faculty to easily and objectively identify and discuss how courses may be revised such as components that should be retained/changed/added/removed; and what topics/outcomes new courses should contain. Heat mapping in a syllabus refers to the use of visual aids to represent the distribution of topics and workload throughout a course. This technique involves using colors to indicate the intensity of a particular topic or

activity in the syllabus. For example, a darker color may be used to represent a topic that requires more time and effort, while a lighter color may be used to represent a less intensive topic.

Heat maps contribute to increased transparency in curriculum design and evaluation. By visually representing the curriculum structure, educators, administrators, and students gain a better understanding of the overall organization and alignment of the syllabus. This transparency enhances communication and collaboration among stakeholders, ultimately leading to improved curriculum implementation (Burgan, 2020).

According to *Quality Assurance in Higher Education: A Literature Review* by Yip et al., (nd), Curriculum quality assurance refers to the process of assuring that an educational institution's curriculum satisfies certain quality standards. This procedure entails a variety of activities, such as curriculum design, development, implementation, and evaluation. Curriculum quality assurance seeks to ensure that students receive a high-quality education that prepares them for future professional success. In connection to this, European Association for Quality Assurance in Higher Education (ENQA) (nd) stated that one important aspect of curriculum quality assurance is the use of standards. Standards provide a framework for curriculum development and ensure that the curriculum is aligned with the institution's objectives and the student's needs. Assurance of the integrity of the curriculum also involves ongoing evaluation and enhancement. This means that the curriculum is reviewed and updated frequently to ensure that it remains effective and pertinent. Input from instructors, students, and other constituents, as well as data analysis and research, may be part of this process. Consequently, curriculum quality assurance is a crucial process for ensuring that students receive a quality education. Educational institutions can ensure that their curriculum meets the requirements of their students and prepares them for future career success by utilizing standards, assessment, and ongoing evaluation and improvement.

According to the literature stated above, heat mapping, according to Smith (2016), can be a useful tool for both instructors and students. Instructors can use heat mapping to ensure that the workload is distributed equitably throughout the course and to determine areas where students may require additional assistance. Heat mapping is a straightforward yet effective method for enhancing the organization and legibility of a syllabus. By utilizing visual aids to illustrate the distribution of topics and workload, instructors can ensure that students have a clear understanding of what is expected of them in each course of a given program.

The article-newsletter of Gaudino-Goering (2021) focused on discussing the use of heat maps in identifying the issues that were most challenging in a department, specifically by the Nassau Community College (NCC). The article discussed the use of a hit map by the NCC in preparing and making annual departmental reports for the purpose of the college's accreditation, by which the annual departmental report dealt with academic department efforts to assess student learning outcomes which will lead to finding and creating plans for continuous improvement of the departments. The article used a rating system on the standards and assessed the department's needs for academic assessments such as curriculum maps, program outcomes, and learning outcomes evaluation. The rating system, which consists of the numerals 1, 2, 3, 4, and 5, was converted to color coding in MS Excel to facilitate heat mapping. (0 = Lack of substantiation for the standard; 1 = Evidence submitted, but insufficient to address the standard; 2 = Evidence demonstrates an effort to address the standard, but adjustments are necessary; 3 = Evidence submitted satisfies the standard; 4 = Evidence submitted exceeds the standard) which became red, yellow, orange, green, and blue for heat mapping. In the article, NCC was assessed and accredited by the six faculty members who were leaders in the Academic Senate Assessment Committee. In addition, they imparted knowledge on how to write student learning outcomes, devise appropriate measures, and plan for multi-year assessment. They helped departments analyze their assessment findings and create plans for continuous improvement. The conclusion of the article is that Heat Map has been a highly effective instrument for identifying strengths and weaknesses in academic assessment at NCC,

as well as a potent tool for documenting the institution's strengths and the required improvements it has made over the past several years. This article is useful in the present study as a reference on the use of heat mapping.

Education 2030 Curriculum Content Mapping: An Analysis of the Netherlands Curriculum Proposal (2019) also used heat mapping in curriculum content mapping and planning specifically in curriculum mapping as part of the curriculum renewal as assessed by the Organization for Economic Cooperation and Development (OECD), unique forum in which the governments of 37 market-based democracies collaborate to develop policy standards to promote sustainable economic growth. The article made use of the heat map in mapping grid form to strengthen the coherence and alignment in the curriculum to the needs of the students and programs. As the program focused on curriculum mapping, the alignment of the course subjects' learning areas to the different competencies/dimensions considered essential for life and work were considered in heat mapping. The curriculum content mapping procedure consisted of five steps: (1) The technique of curriculum content mapping was taught to subject matter experts. These specialists were instrumental in the creation of "heat maps" for each of the learning areas (Arts, Humanities, Mathematics, National Language(s), Physical Education/Health, Science, Technologies/Home Economics) in the curriculum content mapping; (2) production of seven "heat maps" by the learning area experts (with the use of criteria for determining heat map levels); (3) following the submission of the "heat maps" and process reports, the OECD's appointed experts conducted an independent analysis of the data to provide initial feedback regarding any apparent data anomalies or potential validity issues, if applicable, and to provide initial feedback on the preliminary data. The heat maps were then refined and adjusted as necessary, and the data was resubmitted to the OECD for further analysis.; (4) Then, a symposium was held to discuss initial findings from the curriculum content mapping process and to solicit additional information and feedback regarding the content mapping process exercise; (5) the final step in the process is the production of the report. This article will be useful in the present study as a reference on the process to do in heat mapping the OBE-syllabi's alignment to CMO 78 s 2017 and certain TESDA Certification competencies.

In an article published by UNSW Sydney (2023), it is clearly stated that there must be an alignment of learning outcomes to the course and program, which must be done through curriculum mapping. After doing so, a thorough review must be conducted to revise course and program outlines, specifically in the syllabus. As stated by Pawilen (2019), OBE as curriculum design must ensure the coherent, logical, and systematic alignment between and among different levels of outcomes.

Related Studies

The study of Clark et al. (2021) aimed to gain a better understanding of what pathology is, the topics being taught, and when those topics should be taught, in order to construct a picture of the types and depth of pathology topics covered throughout the program stages, particularly in a spiral curriculum. The study utilized heat mapping to effectively display complex data and visualize where and when topics are taught in a more understandable format. The study emphasized, that though heat mapping is not commonly used in curriculum mapping, a previous study conducted by Burke et al (2016) used heat mapping as well to map whole courses to UK-specific outcomes, thus the use of heat mapping as a way to plan and assess program course is used and done in accordance to ensuring the quality of courses starting in curriculum mapping. The study by Clark et al (2021) used MS Excel Spreadsheet in heat mapping to easily gauge and assess the present data. According to the findings of the study, there are areas of the curriculum and teaching that require refinement. In addition, the study concluded that heat mapping can assist integrated, spiral curriculum programs in determining where essential topics are taught throughout a given course. The heat maps display the necessary data effectively and are simple to interpret. The process of mapping and the final heat map can yield valuable information, such as trends in the curriculum, potential development areas, and a clearer comprehension of the profundity of each topic in the curriculum (as seen in the course syllabi). The study showed the use of heat mapping in reviewing and describing curriculum content, objectives, and the like, which is helpful to the present study as it aims to use

heat mapping in describing the alignment of the TAU-CED BTLED Program OBE syllabus and the CMO 78 s 2017 and certain TESDA certificate competencies.

In line with this, Mariano and Baptista (2024) examined the policies, resources, and gaps in the competencies prescribed by TESDA and the K to 12 Basic Education Curriculum for the BTLED program. The research identified significant gaps, including inadequate teaching facilities, unqualified faculty, insufficient funding, and misaligned competencies with TESDA and K to 12 standards in areas like Computer Hardware Servicing and Electrical Technology. To address these issues, a revised BTLED curriculum was developed and validated as highly acceptable for implementation.

In accordance with the aim of this study to map the alignment of the present outcomes-based syllabus of the BTLED Program of TAU-CED to the Policies, Guidelines, and Standards for the BTLED Program, it is important to understand the Outcomes-Based Education syllabus. Outcomes-based education (OBE) syllabi are being prepared by course instructors to make sure that the desired outcomes of a certain course or program are followed and implemented, in adherence to Article VII Section 21 of CMO 78 s 2017. OBE mandates using various evaluation techniques to accurately measure students' learning in a blended classroom environment (Fu & Shang, 2021 as cited by Callaman, 2022). With this, it is thought essential to consider the syllabi's quality. It is anticipated that teacher educators will modify their practices by designing outcomes-based activities that engage students in lessons that integrate learner-centered methodologies (MESVTEE, 2013). With regard to the above-stated paragraph, Rong (2021) holds the opinion that establishing teaching objectives that emphasize student outcomes, constructing a robust teaching system, engaging in enriching teaching activities, and establishing a diverse and dynamic developmental evaluation system are essential for universities.

With regards to the studies on Outcomes-based Education Syllabus mentioned above, Callaman (2022) developed and validated an evaluation tool to be used in evaluating the OBE syllabus and its compliance with flexible learning in accordance to Memorandum Order number 4 series of 2020 (which provides the guidelines for flexible learning implementations that call for innovative learning modalities that facilitate the transition from traditional to flexible learning). In this regard, this present study which aims to heat map the alignment of the present outcomes-based syllabus of the BTLED Program of TAU-CED to the Policies, Guidelines, and Standards for the BTLED Program, heat mapping, instead of an evaluation tool will be used to hit the alignment of OBE syllabi to the CMO of the BTLED Program.

In addition to the cited studies, Curriculum Quality Audit (CQA) is regarded as one of the finest practices in curriculum development and implementation. It can be utilized to develop new programs or review existing pre-service teacher programs to ensure alignment with nationally adopted standards (Philippine Normal University- Research Center for Teacher Quality, 2017 as cited in Alugar and Itaas, 2021). It is an essential form of curriculum design in this age of standards-based reform and accountability. From a global perspective, it is anticipated that universities worldwide will develop graduate competencies regarded as university degrees.

With regard to curriculum quality audit, in Alugar and Itaas' study in 2021, the landscape and perspective of offering curricular programs in the Philippines have changed dramatically over the past few decades. In order for students to satisfy the demands of globalization, internationalization, regional integration, and the Fourth Industrial Revolution, they had to acquire new skills. The Commission on Higher Education (CHED), through pertinent issuances such as the CMOs 78 s 2017, indicated a "shift to learning competency-based standards/outcomes-based education. The main objective of the study of Alugar and Itaas (2021) was to explore the implementation of CQA specifically to describe the practices of implementing CQA as well as the challenges encountered by the instructors. In evaluating the curriculum quality audit, heat maps were used to determine the extent of alignments between curriculum content and standards of curriculum mapping. The compilation yielded a summarized map indicating the frequency with which an indicator was covered. In a portion of the result, re-auditing courses with the inclusion of certain elements serves as an essential process, as

it will be used to revise the course syllabi, as using heat mapping, the author intends to provide the university with an instrument to influence collective thinking about the college's curricula and to document the realities of its actual conduct.

In addition, Guiquing (2024) assessed the competencies of Technology and Livelihood Education (TLE) teachers in the Philippines. The study found that TLE teachers exhibited high competency levels in areas such as Home Economics and Information and Communication Technology, correlating with outstanding teaching performance. This suggests that the integration of TESDA NC competencies into teacher education contributes positively to teaching efficacy.

Also, a study by Caingcoy (2022) highlighted the professional development needs of TLE teachers in Region X – Northern Mindanao. The research indicated that a significant percentage of TLE teachers lacked TESDA certifications and Trainers Methodology qualifications, which are essential for effective teaching. The study emphasized the importance of instructional support and professional development to enhance teacher competencies and, consequently, student outcomes.

Furthermore, the study by Bacalso (2017) examined the competencies and performance of TLE teachers in Gapan City. The research identified strengths and weaknesses in teacher competencies, which informed the design of continuous training and development programs. This underscores the necessity for aligning TESDA NC competencies with teacher education to ensure effective teaching and learning in TLE subjects.

The studies reviewed are salient to the present study as it allowed the researcher to view the need to describe and assess the OBE syllabi of the BTLED Program of TAU-CED on its alignment to CMO 78 s 2017 and TESDA National Certification competencies.

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One process in CQA is the Heat mapping. Heat maps as a tool in research related to assessing or describing outcomes-based education syllabi in alignment with the policies, standards, and guidelines of a certain program are not found. With the very limited research and literature using heat mapping as a tool, most of them are using heat mapping specifically for the curriculum mapping process, to map certain learning outcomes to program outcomes. In light with this, the study sought to describe the alignment of the CMO 78 s 2017 and the OBE-syllabi being designed, crafted, and implemented by TAU-CED with the use of CQA and heat mapping technique, to further see the curriculum quality assurance of the institution in the implementation of the program and usage of OBE syllabi. This study described the alignment of the OBE syllabi of certain subjects to TESDA National Certificate program competencies. This study may become a basis for a review of curriculum quality on OBE-syllabi. This study will pave the way for the development of inputs for program enhancement based on the data gathered in this study.

III. THEORETICAL FRAMEWORK

This study is grounded in Constructive Alignment Theory by John Biggs (1996), which emphasizes the deliberate alignment of learning outcomes, teaching methods, and assessment tasks to enhance student learning. According to Biggs, effective curriculum design involves aligning these components to ensure that students achieve the intended learning outcomes. This alignment ensures that students' learning experiences are coherent and focused on achieving specific educational goals.

In the context of this research, Constructive Alignment Theory provides a framework for evaluating the alignment of the Bachelor of Technology and Livelihood Education (BTLED) program at Tarlac Agricultural University with the program outcomes prescribed by CHED Memorandum Order No. 78, s. 2017, and the competencies outlined in TESDA National Certificate programs. By applying this theory, the study examines how well the BTLED curriculum aligns with these standards and identifies areas for improvement to enhance the program's effectiveness.

This study is also grounded in the Curriculum Quality Audit (CQA) framework, which serves as a guiding model for evaluating the alignment of the Bachelor of Technology and Livelihood Education (BTLED) program at Tarlac Agricultural University with national standards, particularly those set forth by the Commission on Higher Education (CHED) and the Technical Education and Skills Development Authority (TESDA). CQA is a structured and systematic process that enables academic institutions to assess the quality, coherence, and relevance of their curriculum by mapping course content, learning outcomes, instructional strategies, and assessment tools against defined academic and industry benchmarks. It functions not only as a diagnostic mechanism but also as a strategic approach to continuous curricular improvement and quality assurance. (Alugar, R. B., & Itaas, E. C., 2021)

In the context of this study, the CQA framework is applied to determine the extent to which the BTLED program aligns with the Program Outcomes outlined in CHED Memorandum Order No. 78, series of 2017, and with TESDA's Basic, Common, and Core Competency requirements for National Certificate (NC) qualifications. Through curriculum mapping and alignment analysis, the study identifies both areas of strength and gaps within the current curriculum. This evidence-based approach provides the foundation for crafting a comprehensive action plan aimed at enhancing curriculum quality, ensuring relevance to industry standards, and increasing graduates' certification readiness. Moreover, the CQA framework supports a continuous improvement cycle by encouraging regular review, stakeholder feedback, and responsive curriculum revision. Its use ensures that programs like BTLED remain current, outcome-based, and competency-driven. Ultimately, the CQA provides both a practical and theoretical foundation for assessing curricular alignment and formulating strategic actions that improve teaching, learning, and graduate employability (Alugar, R. B., & Itaas, E. C., 2021).

Furthermore, this study followed the Input-Process-Output framework to describe the alignment of TAU-CEd Program Outcomes to the Program Outcomes of CMO 78 s 2017. This study also be described the alignment of the present curriculum on certain subjects to TESDA Certificate program competencies. After describing the alignment, an action plan was developed as an output of the study.

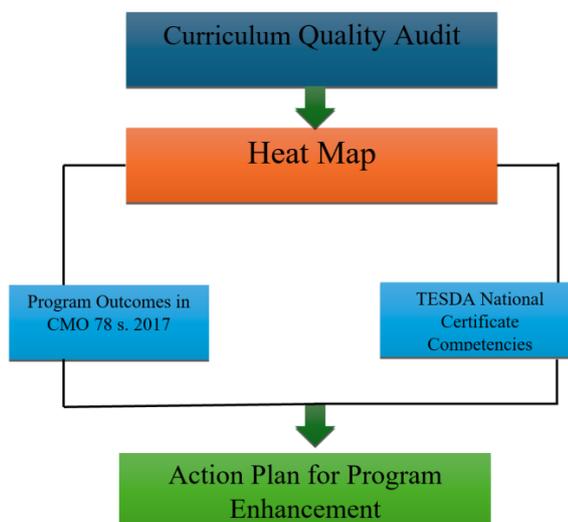


Fig. 1 Paradigm of the Study

Statement of the Problem

1. How may the alignment between Program Outcomes of the Present Curriculum and Program Outcomes outlined in CMO 78 s 2017 be described?
2. How may the alignment between Program Outcomes and major courses of the Present Curriculum be described?
3. How may the alignment of the major courses of the Present Curriculum to TESDA National Certificate competencies on certain programs be described.
4. How may the findings of the study serve as a basis for the development of an action plan for the Present Curriculum?

IV.METHODOLOGY

The quantitative-descriptive research design was used in this study. The descriptive method is a research method that tries to describe a phenomenon, occurrence, or event, that happens in the present. Creswell (1994) said the descriptive method of research is to gather information about present existing conditions. This study used CQA with heat mapping to provide a clear visualization of the alignment of CMO 78 s 2017 and the present curriculum, and the alignment of the present curriculum of certain courses to TESDA Certificate program competencies, thus this study used descriptive research design.

In order to gather significant information, the CMO 78 s 2017, TESDA Certificate Competencies based on the Training Regulations, OBE syllabi, and an adapted description of curriculum quality assurance – heat mapping will be used in the study. The CQA form, and colors and descriptors to be used in heat mapping will be lifted from Curriculum Quality Assurance (nd).

The data which was gathered based on the CQA and heat mapping will be described. Furthermore, the researcher presented the data in the form of heat map representation and discussion to reduce confusion due to the data's extensive content.

The Colors to be used in heat mapping were be as follows:

Color	Description
Green	Total Alignment
Light Green	Partial Alignment

White

No Alignment

The frequency counts and percentage were used to describe the map as seen in the description above.

Below is the percentage range and the descriptions used to describe the percentages computed in the study.

Percentage Range	Description
0% to 20%	Very Low Alignment
21% to 40%	Low Alignment
41% to 60%	Moderate Alignment
61% to 80%	Strong Alignment
81% to 100%	Comprehensive Alignment

Very Low Alignment. This refers to the description which indicates that the curriculum has minimal or no alignment with the TESDA National Certificate competencies, where key competencies are either completely missing or inadequately covered.

Low Alignment. This refers to the description which indicates that the curriculum shows some alignment but still falls short of fully addressing the TESDA National Certificate competencies, where certain competencies are partially covered but major areas where the curriculum does not meet the TESDA national certificate competencies/standards.

Moderate Alignment. This refers to the description which indicates that the curriculum has moderate alignment with the TESDA National Certificate competencies, where it covers several key areas but other salient competencies are either underrepresented or inadequately addressed.

Strong Alignment. This refers to the description which indicates that the curriculum is well aligned with the TESDA National Certificate competencies, where most of the essential competencies are covered, providing solid foundation for the students to achieve certification from TESDA.

Comprehensive Alignment. This refers to description which indicates that the curriculum is almost fully or entirely aligned with the TESDA National Certificate competencies, which addresses all required competencies providing effective preparation for students for certification from TESDA.

The findings of the study was the basis for crafting the action plan.

V.RESULTS

Bachelor of Technology and Livelihood Education Program Outcomes alignment to CHED Memorandum Order No. 78, s. 2017

It is a key element in ensuring that a program meets national educational standards when there is an alignment between the program and the national standards. Based on the Table 1, which describes the alignment between the BTLED program of the College of Education Program Outcomes and the Program Outcomes (POs) prescribed in the CHED Memorandum Order No. 78, Series of 2017, it can be seen that the alignment between the BTLED program outcomes and the CHED Memorandum Order is evident that there is a Total Alignment

across the of the outcomes. The careful design and integration of these program outcomes into the BTLED curriculum reflect a strong adherence to the guidelines set forth by CHED, ensuring that the program produces graduates who are competent, ethical, and responsive to the educational needs of the country. According to the Philippine Qualifications Framework (PQF), aligning education programs with national qualification standards ensures that graduates meet the skills and competencies required by the industry. This is further emphasized by UNESCO (2014), which advocates for the inclusion of community engagement and service in educational programs to promote societal development.

Fig. 2 TAU-CED BTLED Program Outcomes alignment to CMO 78, s. 2017

CMO No. 78 s. 2017 Program Outcomes	TAU-CEDBTLED Program Outcomes	Full Hit
<i>Common to all programs in all types of schools</i>		
PO 1 articulate and discuss the latest developments in the specific field of practice (PQF level 6 descriptor)	PO 1 articulate and discuss the latest developments in the field of teaching and learning in the elementary and secondary levels;	✓
PO 2 effectively communicate orally and in writing using both English and Filipino;	PO 2 effectively communicate orally and in writing using both English and Filipino;	✓
<i>Common to the discipline (Teacher Education)</i>		
PO 3 work effectively and independently in multi-disciplinary and multicultural teams (PQF level 6 descriptor);	PO 3 work effectively and independently in multi-disciplinary and multicultural teams;	✓
PO 4 act in recognition of professional, social and ethical responsibility;	PO 4 act in recognition of professional, social and ethical responsibility;	✓
PO 5 preserve and promote "Filipino historical and cultural heritage (based on RA 7722);"	PO 5 preserve and promote "Filipino historical and cultural heritage;"	✓
PO 6 articulate the rootedness of education in philosophical, sociocultural, historical, psychological, and political contexts;	PO 6 articulate the rootedness of education in philosophical, sociocultural, historical, psychological, and political contexts;	✓
PO 7 demonstrate mastery of subject matter/discipline	PO 7 demonstrate mastery of subject matter/discipline in Technology & Livelihood Education;	✓

PO 8 facilitate learning using a wide range of teaching methodologies and delivery modes of appropriate to specific learners and their environments;	PO 8 facilitate learning using a wide range of teaching methodologies and delivery modes of appropriate to specific learners and their environments;	✓
PO 9 develop innovative curricula, instructional plans, teaching approaches, and resource for diverse learners;	PO 9 develop innovative curricula, instructional plans, teaching approaches, and resource for diverse learners;	✓
PO 10 apply skills in the development and utilization of ICT to promote quality, relevant, and sustainable educational practices;	PO 10 apply skills in the development and utilization of ICT to promote quality, relevant, and sustainable educational practices;	✓
PO 11 demonstrate a variety of thinking skills in planning, monitoring, assessing, and reporting learning processes and outcomes;	PO 11 demonstrate a variety of thinking skills in planning, monitoring, assessing, and reporting learning processes and outcomes;	✓
PO 12 practice professional and ethical teaching standards sensitive to the local, national and global realities;	PO 12 practice professional and ethical teaching standards sensitive to the local, national and global realities;	✓
PO 13 pursue lifelong learning for personal and professional growth through varied experiential and field-based opportunities;	PO 13 pursue lifelong learning for personal and professional growth through varied experiential and field-based opportunities;	✓
<i>Specific to a sub-discipline and a major (Technology and Livelihood Education)</i>		
PO 14 demonstrate the competencies required of the Philippine TVET Trainers Assessors Qualifications Framework (PTTQF);	PO 14 demonstrate the competencies required of the Philippine TVET Trainers Assessors Qualifications Framework (PTTQF);	✓
PO 15 demonstrate broad and coherent, meaningful knowledge and skills in Technology and Livelihood Education;	PO 15 demonstrate broad and coherent, meaningful knowledge and skills in Technology and Livelihood Education;	✓
PO 16 apply with minimal supervision specialized knowledge and skills in Technology and Livelihood Education;	PO 16 apply with minimal supervision specialized knowledge and skills in Technology and Livelihood Education;	✓

PO 17 demonstrate higher level literacy, communication, numeracy, critical thinking, and learning skills needed for higher learning;	PO 17 demonstrate higher level literacy, communication, numeracy, critical thinking, and learning skills needed for higher learning;	✓
PO 18 manifest a deep and principled understanding of the learning processes and the role of the teacher in facilitating these processes in their students;	PO 18 manifest a deep and principled understanding of the learning processes and the role of the teacher in facilitating these processes in their students;	✓
PO 19 show a deep and principled understanding of how educational processes relate to larger historical, social, cultural and political processes;	PO 19 show a deep and principled understanding of how educational processes relate to larger historical, social, cultural and political processes;	✓
PO 20 apply a wide range of teaching process skills (including curriculum development, lesson planning, materials development, educational assessment, and teaching approaches);	PO 20 apply a wide range of teaching process skills (including curriculum development, lesson planning, materials development, educational assessment, and teaching approaches);	✓
PO 21 reflect on the relationships among the teaching process skills, the learning processing in the students, the nature of the content/subject matter, and other factors affecting educational processes in order to constantly improve their teaching knowledge, skills and practices;	PO 21 reflect on the relationships among the teaching process skills, the learning processing in the students, the nature of the content/subject matter, and other factors affecting educational processes in order to constantly improve their teaching knowledge, skills and practices;	✓
<i>Common to horizontal type as defined in CMO 46, s. 2012</i>		
PO 22 BTLED graduates of professional institutions demonstrate a service orientation in one's profession;	PO 22 demonstrate a service orientation in one's profession;	✓
PO 23 BTLE graduates of colleges participate in various types of employment, development activities, and public discourses, particularly in response to the needs of the communities one serves;	PO 23 participate in various types of employment, development activities, and public discourses, particularly in response to the needs of the communities one serves;	✓
PO 24 BTLE graduates of universities participate in the generation of new knowledge or in research and development projects in technical education.	PO 24 participate in the generation of new knowledge or in research and development projects in technical education.	✓

In addition to the program outcome alignments, it is but necessary that the courses within the program also have alignment with the prescribed program outcomes of the CHED.

Fig. 3 Basic Audit of BTLED AFA Courses to BTLED Program Outcomes

Course/ POs	P O 1	P O 2	P O 3	P O 4	P O 5	P O 6	P O 7	P O 8	P O 9	P O 10	P O 11	P O 12	P O 13	P O 14	P O 15	P O 16	P O 17	P O 18	P O 19	P O 20	P O 21	P O 22	P O 23	P O 24	TOTAL	
AMAJ 01							X								X	X										3
AMAJ 02		X					X							X	X	X	X									6
AMAJ 03							X								X	X										3
AMAJ 04				X		X	X			X	X	X		X		X				X	X	X	X			13
AMAJ 05							X							X	X	X							X	X		6
AMAJ 06							X						X	X	X											4
AMAJ 07				X			X							X	X										X	5
AMAJ 08				X			X			X	X	X		X		X						X	X	X		10
AMAJ 09							X							X	X											3
AMAJ 10							X							X	X											3
AMAJ 11		X		X			X	X	X	X		X	X	X		X						X	X	X		13
AMAJ 12		X		X			X	X	X	X		X	X	X		X						X	X	X		13
TOTAL	0	3	0	5	0	2	1	2	2	2	2	4	4	2	12	8	6	0	0	0	1	4	5	6		

Legend:

AMAJ01: Agricultural Crop Production 1: Field Crop and Cereal production

AMAJ02: Agricultural Crop Production 2: Horticulture and Crop Production

AMAJ 03: Animal Production 1: Poultry Production

AMAJ04: Aquaculture

AMAJ05: Agricultural Crop Production 3: Farming System

AMAJ06: Crop Protection (Pest Management)

AMAJ 07: Animal Production 2: Swine Production

AMAJ08: Fish Capture

AMAJ09: Organic Agriculture

AMAJ10: Animal production 3: Ruminant Production

AMAJ11: Fishing Gear Repair and Maintenance

AMAJ12: Fish Products Packaging

It can be seen from the figure 3, the frequency for Agri-Fishery Arts specialization hitting the Program Outcomes of BTLED to which ones are most addressed based on the approved OBE syllabus of the instructors. It can be determined that PO 7 (demonstrate mastery of subject matter/discipline in Technology & Livelihood Education) and PO 15 (demonstrate broad and coherent, meaningful knowledge and skills in Technology and Livelihood Education) are the most hit, showing that AFA major courses are focusing on the mastery of the content/subject to better understand and apply skills in courses in teaching Technology and Livelihood Education. Though some POs were not hit or has few hits, those program outcomes can be hit or aligned with the other program subjects or courses such as PO 5 (preserve and promote "Filipino historical and cultural heritage) where it can be learned from general subjects focusing on Filipino historical and heritage in relation to the program.

Fig. 4 Basic Audit of BTLED HE Courses to BTLED Program Outcomes

Course/ POs	P O 1	P O 2	P O 3	P O 4	P O 5	P O 6	P O 7	P O 8	P O 9	P O 10	P O 11	P O 12	P O 13	P O 14	P O 15	P O 16	P O 17	P O 18	P O 19	P O 20	P O 21	P O 22	P O 23	P O 24	TOTAL		
HMAJ 01		X	X	X	X	X	X				X					X										8	
HMAJ 02	X		X	X	X	X	X				X		X		X	X		X								11	
HMAJ 03	X						X		X																	3	
HMAJ 04	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	24
HMAJ 05		X	X				X	X	X	X	X		X		X	X	X	X	X	X		X				13	
HMAJ 06	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	24
HMAJ 07	X	X		X	X		X				X		X		X	X	X		X	X		X	X		X	14	
HMAJ 08	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	24
HMAJ 09	X	X	X	X	X	X										X	X									8	
HMAJ 10		X	X				X	X	X	X	X		X		X	X	X	X	X		X					13	
HMAJ 11	X		X	X	X	X	X						X	X	X	X	X	X		X		X	X	X	X	15	
HMAJ 12		X					X						X	X	X	X										6	
TOTAL	8	9	9	8	8	7	11	5	6	4	7	4	8	5	9	8	9	9	9	4	6	5	5	4	5		

Legend:

HMAJ01: Household Resource Management

HMAJ07: Consumer Education

HMAJ02: Food Nutrition

HMAJ08: Crafts Design (Handicraft)

HMAJ03: Child and Adolescent Development

HMAJ09: Marriage and Family Relationship

HMAJ04: Arts in Daily Living

HMAJ10: Clothing Construction

HMAJ05: Clothing Selection, Purchase and Care

HMAJ11: Fundamentals of Food Technology

HMAJ06: Principles of Food Preparation

HMAJ12: School Food Service Management

The same with the previous table, it can be seen from the figure 4, the frequency for Home Economics specialization hitting the Program Outcomes of BTLED to which ones are most addressed based on the approved OBE syllabus of the instructors. It can be determined that PO 7 (demonstrate mastery of subject matter/discipline in Technology & Livelihood Education) is the most hit, showing that HE major courses are focusing on the mastery of the content/subject in preparation for teaching Technology and Livelihood Education. It can be seen also that all the POs were hit by the major courses of the HE specialization, indicating alignment with the program outcomes.

It can be seen from the figure 5, the frequency for Information and Communication Technology specialization hitting the Program Outcomes of BTLED to which ones are most addressed based on the approved OBE syllabus of the instructors. It can be determined that PO 10 (apply skills in the development and utilization of ICT to promote quality, relevant, and sustainable educational practices) and PO 15 (demonstrate broad and coherent, meaningful knowledge and skills in Technology and Livelihood Education) are the most hit, showing that ICT major courses are focusing on the mastery of the content/subject, specifically the integration of ICT, to

better understand and apply skills in courses in teaching Technology and Livelihood Education. Though some POs were not hit or has few hits, those program outcomes can be hit or aligned with the other program subjects or courses such as PO 8 (facilitate learning using a wide range of teaching methodologies and delivery modes of appropriate to specific learners and their environments) where it can be learned from professional development subjects focusing on pedagogy and teaching methodologies in relation to the program.

Fig. 5 Basic Audit of BTLED ICT Courses to BTLED Program Outcomes

Course/ POs	P O	TOTAL																								
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4		
IMAJ01	X			X		X	X			X					X	X	X									8
IMAJ 02	X			X	X	X	X			X					X	X										8
IMAJ 03							X			X					X							X	X			5
IMAJ 04	X		X			X	X			X		X			X	X										8
IMAJ 05	X	X	X	X	X		X			X			X		X	X	X						X			12
IMAJ 06				X			X			X			X		X											5
IMAJ 07	X			X						X	X	X			X	X	X							X		9
IMAJ 08	X									X		X			X	X								X		6
IMAJ 09			X				X			X	X	X			X	X								X		8
IMAJ 10							X			X				X	X	X										5
IMAJ 11			X				X			X	X				X	X										6
IMAJ 12			X				X			X					X	X							X			6
TOTAL	6	1	5	5	2	3	1	0	0	1	3	4	2	2	1	1	1	0	0	0	0	1	6	0	0	

For the combined hit of the three specialization, the Figure 6 shows the summary.

Fig. 6 Frequency of Program Outcomes Hit

Program Outcome	Frequency hit
PO 1 articulate and discuss the latest developments in the field of teaching and learning in the elementary and secondary levels;	14
PO 2 effectively communicate orally and in writing using both English and Filipino;	13
PO 3 work effectively and independently in multi-disciplinary and multicultural teams;	14
PO 4 act in recognition of professional, social and ethical responsibility;	18

PO 5 preserve and promote "Filipino historical and cultural heritage;"	10
PO 6 articulate the rootedness of education in philosophical, sociocultural, historical, psychological, and political contexts;	11
PO 7 demonstrate mastery of subject matter/discipline in Technology & Livelihood Education;	21
PO 8 facilitate learning using a wide range of teaching methodologies and delivery modes of appropriate to specific learners and their environments;	7
PO 9 develop innovative curricula, instructional plans, teaching approaches, and resource for diverse learners.	8
PO 10 apply skills in the development and utilization of ICT to promote quality, relevant, and sustainable educational practices;	18
PO 11 demonstrate a variety of thinking skills in planning, monitoring, assessing, and reporting learning processes and outcomes;	12
PO 12 practice professional and ethical teaching standards sensitive to the local, national and global realities.	12
PO 13 pursue lifelong learning for personal and professional growth through varied experiential and field-based opportunities;	14
PO 14 demonstrate the competencies required of the Philippine TVET Trainers Assessors Qualifications Framework (PTTQF);	10
PO 15 demonstrate broad and coherent, meaningful knowledge and skills in Technology and Livelihood Education;	21
PO 16 apply with minimal supervision specialized knowledge and skills in Technology and Livelihood Education;	14
PO 17 demonstrate higher level literacy, communication, numeracy, critical thinking, and learning skills	17

needed for higher learning;	
PO 18 manifest a deep and principled understanding of the learning processes and the role of the teacher in facilitating these processes in their students;	9
PO 19 show a deep and principled understanding of how educational processes relate to larger historical, social, cultural and political processes;	4
PO 20 apply a wide range of teaching process skills (including curriculum development, lesson planning, materials development, educational assessment, and teaching approaches);	6
PO 21 reflect on the relationships among the teaching process skills, the learning processing in the students, the nature of the content/subject matter, and other factors affecting educational processes in order to constantly improve their teaching knowledge, skills and practices;	7
PO 22 demonstrate a service orientation in one's profession;	15
PO 23 participate in various types of employment, development activities, and public discourses, particularly in response to the needs of the communities one serves;	9
PO 24 participate in the generation of new knowledge or in research and development projects in technical education.	11

Based from the figure 6, PO 7 (demonstrate mastery of subject matter/discipline in Technology & Livelihood Education) and PO 15 (demonstrate broad and coherent, meaningful knowledge and skills in Technology and Livelihood Education) are the most frequently addressed, with 21 instances across all major courses which indicates that the major courses in BTLED are emphasizing the need for students to demonstrate expertise in Technology and Livelihood Education. Furthermore, PO 4 (act in recognition of professional, social and ethical responsibility) and PO 10 (apply skills in the development and utilization of ICT to promote quality, relevant, and sustainable educational practices) are also addressed quite frequently which shows that the major courses also emphasize on preparing students to act professionally and use technology effectively.

On the other hand, PO 19 (show a deep and principled understanding of how educational processes relate to larger historical, social, cultural and political processes) and PO 20 (apply a wide range of teaching process skills (including curriculum development, lesson planning, materials development, educational assessment, and teaching approaches)) have the fewest hit, this indicates that these aspects might not be as emphasized in the

courses compared to others. Furthermore, PO 5 (preserve and promote "Filipino historical and cultural heritage) also appears less often. Though with very few hit in the BTLED major courses, those program outcomes might be hit in other program subjects such as professional development subjects focusing on pedagogy and teaching methodologies in relation to the program, and subjects teaching Filipino heritage and culture. This suggests that while the major courses of the BTLED Program focuses on skill and content mastery on the program outcomes, other POs which were not hit or few hits can be learned or hit on other program subjects if viewed holistically.

Alignment of the major courses of the Present Curriculum to TESDA National Certificate competencies

Agri-Fishery Arts

The figure shows the alignment of the major courses/subjects under Agri-Fishery Arts specialization to the National Certificate (NC) Competencies. While it can be gleaned that some competencies were not hit or aligned on each major course to their corresponding NC, some competencies especially in basic and common competencies might be hit in other subjects under the AFA specialization subjects: General Education, Professional, and Exploratory subjects. Below is the discussion analysis of each NC alignment to the AFA major courses.

Alignment by National Certificate (NC)

1. Agricultural Crop Production NC I

With a Moderate Alignment at 44%, this NC shows reasonably strong integration of core (58.82%) and common (76.92%) competencies, particularly from AMAJ 01 and 02. However, basic competencies are just at the range of Low Alignment (21.43%), indicating foundational skills are low percentage in the major courses. AMAJ 05 has contributed significantly through partial alignment but lacks total hits.

Although some competencies in major courses did not align with their respective NC standards, certain basic and common competencies may have been addressed in other AFA specialization subjects: General Education, Professional, and Exploratory subjects.

2. Agricultural Crop Production NC II

This NC is described with Low Alignment (36.07%), with basic competencies at 17.86%, falling under Very Low Alignment. Common (53.84%) and core (50%) show Moderate Alignment, largely through partial hit. AMAJ 01 and 02 provide some alignment, but AMAJ 05 lacks core competency coverage, indicating a gap in skill/technical content.

While some competencies in the major courses failed to align with their respective NC standards, others—particularly basic and common ones—may have been covered in General Education, Professional, or Exploratory subjects within the AFA specialization.

3. Poultry Production NC II

Aligning only 29.85%, this NC is within Low Alignment. No Basic competencies are aligned (0%), Common (35.71%) and core (62.5%) competencies demonstrate partial to strong technical relevance through AMAJ 03. This suggests a need to strengthen foundational and procedural content (Basic and Core).

Though certain major course competencies did not match the NC standards, some basic and common ones might have been integrated into other AFA subjects like General Education, Professional, and Exploratory areas.

4. Aquaculture NC II

With only 18.18% total alignment, this is rated as Very Low Alignment. With the Basic (0%) and common (6.67%) competencies are practically non-existent, though core competencies show a Moderate Alignment (52.38%). AMAJ 04 appears too focused on technical aspects without building foundational or general employability skills.

Not all major course competencies aligned with the NC benchmarks, but some basic and common competencies could have been addressed in AFA subjects such as General Education, Professional, and Exploratory subjects.

5. Pest Management NC II

At 32.81%, this NC falls under Low Alignment. While basic (3.33%) and common (40%) are weak, core competencies show Strong Alignment (66.67%). AMAJ 06 (Crop Protection) is competent in its technical depth but lacks foundational skills.

Despite the low of some competencies in major course with NC standards, basic and common competencies may be found in other subjects within the AFA specialization, including General Education, Professional, and Exploratory topics.

6. Swine Production NC II

This NC achieves Moderate Alignment (43.66%), driven by strong core competency coverage (70.37%) from AMAJ 07. However, basic (16.67%) and common (50%) competencies need improvement. The course prepares students for technical tasks but falls short on foundational readiness.

Some major course competencies did not fully meet NC standards in terms of competencies, yet many basic and common competencies may be included in General Education, Professional, or Exploratory AFA subjects.

7. Fish Capture NC II

With 45.23% alignment, this is another Moderate Hit. Basic (20%) and common (41.94%) are barely at moderate thresholds. Core competencies are Comprehensively Aligned (86.96%), indicating AMAJ 08 delivers deep technical training. This, however, must be balanced with general competencies.

Although there were gaps between major course competencies and its corresponding NC standards, other AFA components like General Education, Professional, and Exploratory subjects might address those basic and common competencies.

8. Organic Agriculture NC II

Rated as Low Alignment (28.87%), this course lacks alignment in basic and common competencies (0%), despite showing Comprehensive Alignment (81.82%) in core competency. AMAJ 09 is heavily focused on skill content, suggesting the need for a more alignment in other competencies set for certification.

While the competencies in this major course did not align completely with the NC, General Education, Professional, and Exploratory subjects under the AFA specialization may have addressed several basic and common ones.

9. Ruminant Production NC II

Achieving Moderate Alignment (42.65%), the course hits strongly on core competencies (70.83%) in AMAJ 10. Yet, basic (16.67%) and common (50%) again reflect common trends of foundational gaps.

Some competencies in the major course missed alignment with the NC, though they may be covered in other parts of the AFA curriculum, such as General Education, Professional, or Exploratory subjects.

10. Fish Gear Maintenance NC II

This NC has Very Low Alignment (13.46%). All domains—basic (3.03%), common (10%), and core (55.56%)—are inadequately addressed. AMAJ 11 needs significant revision to meet NC standards for certification.

Although alignment with NC standards was lacking in this major course, basic and common competencies may be addressed through General Education, Professional, and Exploratory offerings within the AFA specialization.

11. Fish Product Packaging NC II

With 42.86% total alignment, this is a Moderate Hit. Basic alignment is low (10%), but common (62.5%) and core (100%) are Strong to Comprehensive. AMAJ 12 successfully imparts technical knowledge but lacks in fundamental and soft skill areas.

Fig. 7 Alignment of AFA Courses to TESDA NC Competencies

N o.	NC	Course(s)	Basic Competency Hit		% Basic	Common Competency Hit		% Common	Core Competency Hit		% Core	TOTAL%	Description
			Total	Partial		Total	Partial		Total	Partial			
1	Agricultural Crop Production NC I	AMAJ 01	0	2	21.43 (6/28)	5	1	76.92% (10/13)	5	1	58.82 (10/17)	44	Moderate Hit
		AMAJ 02	0	1		3	2		3	4			
		AMAJ 05	0	4		0	4		0	7			
2	Agricultural Crop Production NC II	AMAJ 01	0	3	17.86 (5/28)	2	3	53.84% (7/13)	3	5	50 (10/20)	36.07	Low Hit
		AMAJ 02	0	1		3	4		3	3			
		AMAJ 05	0	5		0	4		0	3			

					28))					
3	Poultry Product ion NC II	AMA J 03	0	0	0 (0/29)	0	5	35.7 1 (5/14)	0	15	62.5 (15/24)	29.8 5	Low Hit
4	Aquaculture NC II	AMA J 04	0	0	0 (0/30)	1	0	6.67 (1/15)	0	11	52.3 8 (11/21)	18.1 8	Very Low Hit
5	Pest Management NC II	AMA J 06	0	1	3.3 3 (1/30)	2	2	40 (4/10)	0	16	66.6 7 (16/24)	32.8 1	Low Hit
6	Swine Product ion NC II	AMA J 07	0	5	16.67 (5/30)	0	7	50 (7/14)	0	19	70.3 7 (19/27)	43.6 6	Moderate Hit
7	Fish Capture NC II	AMA J 08	1	5	20 (6/30)	8	4	41.9 4 (12/31)	8	12	86.9 6 (20/23)	45.2 3	Moderate Hit
8	Organic Agriculture NC II	AMA J 09	0	0	0 (0/30)	0	0	0 (0/15)	2	16	81.8 2 (18/22)	28.8 7	Low Hit
9	Ruminant Product ion NC II	AMA J 10	0	5	16.67 (5/30)	0	7	50 (7/14)	1	16	70.8 3 (17/24)	42.6 5	Moderate Hit
	Fish Gear	AMA J 11	0	1	3.0 3	0	1	10 (1/10)	0	5	55.5 6	13.4 6	Very Low

10	Maintenance NC II				(1/33))			(5/9)		Hit
11	Fish Product Packaging NC II	AMAJ 12	0	3	10 (3/30)	6	9	62.5 (15/24)	0	9	100 (9/9)	42.86	Moderate Hit

The alignment between major course competencies and NC standards was not always evident; however, basic and common competencies might be present in AFA subjects like General Education, Professional, and Exploratory.

Legend:

AMAJ01: Agricultural Crop Production 1: Field Crop and Cereal production

AMAJ02: Agricultural Crop Production 2: Horticulture and Crop Production

AMAJ 03: Animal Production 1: Poultry Production

AMAJ04: Aquaculture

AMAJ05: Agricultural Crop Production 3: Farming System

AMAJ06: Crop Protection (Pest Management)

AMAJ 07: Animal Production 2: Swine Production

AMAJ08: Fish Capture

AMAJ09: Organic Agriculture

AMAJ10: Animal production 3: Ruminant Production

AMAJ11: Fishing Gear Repair and Maintenance

AMAJ12: Fish Products Packaging

On the Competencies

1. Basic Competencies

Across all National Certificates, basic competencies consistently exhibit very low to low alignment. The highest percentage (21.43%) is just at the Low Alignment threshold, with most courses showing 0–20%, particularly in Aquaculture, Poultry, and Organic Agriculture NCs. This trend indicates a critical need to embed soft skills, communication, personal effectiveness, and workplace readiness in AMAJ course content. These are discrepancies in aligning some major course competencies with NC basic competencies, but these may have been compensated for through other AFA subjects, particularly in General Education, Professional, and Exploratory areas.

2. Common Competencies

Common competencies show mixed results, ranging from 6.67% (Very Low) to 76.92% (Strong Alignment). Courses such as Fish Product Packaging and Agricultural Crop Production NC I show stronger alignment, while Aquaculture and Pest Management courses lag. These competencies, which involve workplace procedures, safety, and equipment use, are moderately present but lack consistency. Some common competencies were not clearly addressed in the major courses, but other AFA subjects such as General Education, Professional, and Exploratory might include them.

3. Core Competencies

Core competencies are the well-integrated, often falling into Moderate to Comprehensive Alignment. Courses like Fish Capture NC II (86.96%), Organic Agriculture (81.82%), and Fish Product Packaging (100%) demonstrate that technical training is well addressed in AMAJ programs. However, even strong technical coverage must be complemented by basic and common competencies for a truly job-ready graduate, which can be addressed in other program subjects.

Totality of Alignment

When viewed holistically, the total alignment across all AMAJ courses and TESDA NCs ranges from 13.46% (Very Low) to 45.23% (Moderate). None of the courses reach Strong or Comprehensive Total Alignment, even when core competencies are well-covered. This underlines a low alignment between current AMAJ curricular design and TESDA's holistic competency framework. Though some gaps existed in how major courses aligned with NC competencies, yet these might have been filled through subjects like General Education, Professional, and Exploratory within the AFA specialization.

Home Economics

1. Cookery NC II

With the total alignment of 45.05%, this reflects a moderate hit in the overall alignment with TESDA competencies. The alignment of basic competencies for Cookery NC II courses is low. The percentage hit for Food Nutrition is only 17.65%, and Principles of Food Preparation has no alignment (0%). The common competency alignment for this course shows a moderate hit, with Food Nutrition achieving 10%, and Principles of Food Preparation scoring 22%. Core competencies show a moderate hit with 36% for Food Nutrition and 35% for Principles of Food Preparation. The data suggests that strengthening the coverage of basic and common competencies in the course content could improve overall alignment.

While some competencies in major courses were not fully aligned with their corresponding NC standards, certain basic and common competencies might be covered in other HE specialization areas such as General Education, Professional, and Exploratory subjects.

2. Dressmaking NC II

The basic competency alignment is extremely low. Clothing Selection, Purchase, and Care has 9.09%, and Clothing Construction has no alignment (0%). The common competencies show a moderate hit with 50% for Clothing Selection, Purchase, and Care and 6% for Clothing Construction. Core competencies are strongly aligned, with 94.12% for Clothing Selection, Purchase, and Care and 14% for Clothing Construction. The total alignment for Dressmaking NC II courses is 56.82%, which reflects a moderate hit in the overall alignment. It can be seen that improving the integration of basic and common competencies would enhance the overall alignment of this NC.

Although these major courses didn't fully meet the NC standards in some areas, basic and common competencies might be addressed through other HE specialization subjects like General Education, Professional, and Exploratory.

3. Caregiving NC II

The basic competency alignment for Caregiving courses is 0%. The common competency alignment is also 0%. Core competencies show a low hit with 42.86%, representing a slight alignment in this area. The total alignment for Caregiving NC II is 18.37%, which is classified as a very low hit. It indicates that the curriculum needs to incorporate more basic and common caregiving skills to achieve better alignment with TESDA standards.

Some of the competencies in this major course may not align perfectly with its respective NC standards, but related competencies—especially basic and common ones—might be included in other HE specialization subjects.

4. Handloom NC II

Basic competencies show a low alignment with 10%. Common competencies have a moderate alignment of 37.14%. Core competencies are strongly aligned with 63.64%. The total alignment for Handloom NC II is 29.41%, which is classified as a low hit. The data suggests that adding more foundational skills and common weaving techniques to the course could improve alignment with TESDA national certificate standards.

While alignment with NC standards was lacking in parts of this major course, basic and common competencies may still be found in other HE courses, including General Education, Professional, and Exploratory subjects.

5. Food Processing NC II

The basic competency alignment for Food Processing NC II is 0%. The common competency alignment is 11.54%. Core competencies have a moderate alignment at 38.10%. The total alignment for Food Processing NC II is 18.03%, classified as a very low hit. It can be seen that the curriculum should be revised to include essential basic and common competencies to improve overall alignment.

Though a few competencies in this major course did not correspond to NC standards, other HE subjects such as General Education, Professional, and Exploratory may address the basic and common ones

6. Food Production NC II

The basic competency alignment for Food Production NC II is 3.13%, showing minimal alignment. Common competencies have 8.70% alignment. Core competencies show 16.28% alignment. The total alignment for Food Production NC II is 10.20%, classified as a very low hit. It indicates that improving the inclusion of basic, common, and job-specific competencies (core) in the curriculum would help increase alignment with TESDA standards.

Even though some competencies in this major course fell short of NC alignment, they might have been addressed through other HE subjects like General Education, Professional, and Exploratory.

Fig. 8 Alignment of HE Courses to TESDA NC Competencies

No.	NC	Course(s)	Basic Competency Hit		% Basic	Common Competency Hit		% Common	Core Competency Hit		% Core	TOTAL %	Description
			Total	Partial		Total	Partial		Total	Partial			
1	Cookery NC II	HMAJ 02	0	0	17.65 (3/17)	0	0	10 (2/20)	0	22	66.67 (36/54)	45.05	Moderate Hit
		HMAJ 06	0	3		0	2		1	35			
2	Dressmaking NC II	HMAJ 05	0	0	9.09 (1/11)	0	7	50 (8/16)	1	10	94.12 (16/17)	56.82	Moderate Hit
		HMAJ 10	0	1		0	6		1	14			
3	Caregiving (from Grade School to Adolescent)	HMAJ 03	0	0	0 (0/15)	0	0	0 (0/13)	2	7	42.86 (9/21)	18.37	Very Low Hit
4	Handloom NC II	HMAJ 08	0	3	10 (3/30)	6	4	37.14 (10/27)	6	1	63.64 (7/11)	29.41	Low Hit
5	Food Processing NC II	HMAJ 11	0	0	0 (0/14)	1	2	11.54 (3/26)	4	4	38.10 (8/21)	18.03	Very Low Hit
6	Food Product ion NC II	HMAJ 12	0	1	3.13 (1/32)	0	2	8.70 (2/23)	1	6	16.28 (7/43)	10.20	Very Low Hit

Legend

HMAJ02: Food Nutrition	HMAJ08: Crafts Design (Handicraft)
HMAJ03: Child and Adolescent Development	HMAJ10: Clothing Construction
HMAJ05: Clothing Selection, Purchase and Care	HMAJ11: Fundamentals of Food Technology
HMAJ06: Principles of Food Preparation	HMAJ12: School Food Service Management

On the Competencies

1. Basic Competency Alignment

The basic competencies are significantly low in most of the major courses, with Caregiving NC II having 0% alignment in both basic and common competencies. Courses like Cookery NC II and Food Processing NC II show very minimal basic competency alignment (below 20%). This suggests a need for a strong focus on integrating personal development, communication, and other basic soft skills into these courses. Although certain NC standards were not met by the major courses, basic competencies might be achieved through related HE subjects under General Education, Professional, or Exploratory tracks.

2. Common Competency Alignment

Common competencies show moderate alignment across some courses. Cookery NC II has a relatively stronger alignment in common competencies (10%–22%). However, Handloom NC II and Food Processing NC II show very low alignment, indicating that the coverage of essential operational skills, safety procedures, and workplace practices should be enhanced. While the major courses may not align fully with NC requirements, some of the common competencies could be found in other HE subjects like General Education, Professional, and Exploratory

3. Core Competency Alignment

Core competencies are generally more aligned across the courses, particularly in Dressmaking NC II (94.12% for Clothing Selection, Purchase, and Care) and Handloom NC II (63.64% for Craft Design). However, courses like Caregiving NC II and Food Production NC II show very weak alignment in core competencies (around 16%). This highlights a need for improvement in aligning these courses with the specific practical skills and technical knowledge required by TESDA standards.

Totality of Alignment

The overall total alignment of the major courses to TESDA competencies is moderate to low, with courses like Dressmaking NC II and Cookery NC II having moderate alignment (45.05%–56.82%), while courses like Caregiving NC II, Food Processing NC II, and Food Production NC II exhibit very low alignment (around 10%–18%). The general picture indicates that while some programs show promise in aligning core competencies, basic and common competencies need significant improvement. The gaps existed in how major courses aligned with NC competencies, yet these might have been filled through subjects like General Education, Professional, and Exploratory within the HE specialization.

Information and Communication Technology

1. Animation NC II

Animation NC II had an overall alignment of 11.63%, indicating a very low hit. Basic Competency alignment was very low at 3.33%, and there was no alignment with Common Competencies (0%). In contrast, Core

Competencies registered a comprehensive alignment of 100%. While IMAJ's courses (particularly IMAJ 08 – 2D Digital Animation) cover the technical competencies well, they lack coverage in foundational and work-related common skills.

While some competencies in this major courses did not match their corresponding NC standards, other ICT specialization subjects—such as General Education, Professional, and Exploratory—may have covered certain basic and common competencies.

2. Illustration NC II

With a total alignment of 58.97%, Illustration NC II falls under moderate alignment. The standout areas are the Common Competency (85.71%) and Core Competency (91.67%), both falling under comprehensive hit. However, no alignment was observed in the Basic Competency category, highlighting the need for foundational skill integration. IMAJ courses such as Drawing Concepts and Key Drawings significantly contribute to meeting core illustration skills.

Although there were alignment issues between this major courses and the NC standards, basic and common competencies might still be addressed in other ICT subjects like General Education, Professional, and Exploratory

3. Computer System Servicing NC II

This NC had a total alignment of 22.41%, falling under a low hit. While there was no alignment in Basic Competencies, Common Competencies scored 10.71%, and Core Competencies hit a moderate 58.82%. The moderate coverage in technical skills (e.g., troubleshooting) suggests potential, but the absence of essential and common skills is concerning.

Not all competencies in these major courses corresponded with NC requirements, but some may have been integrated into other ICT-related subjects, particularly General Education, Professional, and Exploratory

4. Web Development NC II

The Web Development NC II had a low alignment at 26.79%. Basic Competency alignment was 10.34%, and Common Competency alignment was 0%. However, the Core Competency area showed a moderate alignment of 52.63%, with IMAJ courses like Website Creation and Internet Marketing partially covering relevant skills.

Some competencies in the major ICT courses fell short of NC alignment; however, foundational and commonly expected competencies may have been met in other related subjects

5. 2D Digital Animation NC III

This NC reflected a moderate alignment of 45.45%. Basic Competencies were aligned at 25%, Common Competencies at 50%, and Core Competencies at 61.54%, a strong hit. IMAJ courses such as 2D Digital Animation and Drawing Tools effectively support job-specific training/skills but still fall short of comprehensive skill development.

Though alignment with NC competencies was lacking in parts of the major courses, other ICT specialization subjects may include the basic and common competencies

6. Film and Video Post-Production NC II

The total alignment for this NC was 10.61%, classifying it under a low hit. No hits were recorded for Basic Competencies, while Common and Core Competencies were at 4.35% and 40% respectively. This result shows that while some aspects of production are addressed in IMAJ courses, there's a wide gap in both foundational and job-specific skills.

While this major course may not completely reflect the NC competency standards, General Education, Professional, and Exploratory ICT subjects could still address the essential basic and common skills

7. Photography NC II

With only 8.51% total alignment, Photography NC II had a very low hit. Basic and Common Competencies showed no alignment, while Core Competency was at 18.18%, indicating limited inclusion of photography-relevant technical content in the curriculum.

Although this major course shows gaps in NC alignment, the basic and common competencies might have been addressed through other components of the ICT curriculum

8. Audio Production Services NC II

This NC had the lowest total alignment at 3.57%. Basic and Core Competencies registered 0%, while Common Competencies hit just 9.09%. The course on Audio Production provided minimal overlap, suggesting a significant misalignment with TESDA standards (The course focuses on sound/audio production while the NC focuses on audio/sound equipment preparations and the like).

While certain NC competencies were missed in this major course, basic and common ones may be integrated into ICT subjects like General Education, Professional, or Exploratory

9. Video Graphic Design NC II

Total alignment stood at 8.48%, under very low hit. While Basic and Common Competencies registered minimal percentages (3.45% and 25%, respectively), Core Competencies showed only 9.09% alignment. The current curriculum is insufficient for meeting the required skill sets of this NC.

Despite the fact that this major course doesn't fully meet NC standards, some basic and common competencies may still be addressed through other subjects under the ICT specialization

On the Competencies

1. Basic Competencies

Across all NCs, Basic Competency alignment was consistently low, with most at 0% and a few (e.g., Web Development NC II) barely crossing into the 10% range. This indicates a systemic gap in the integration of foundational work habits, communication, and safety practices in the IMAJ curriculum. These competencies are essential for workplace readiness and need immediate reinforcement. While there's a lack of full alignment between this major course and the NC standards, basic competencies may be offered in other parts of the ICT specialization.

2. Common Competencies

Common Competencies fared slightly better but remained low to moderate in most NCs. The highest alignment was in Illustration NC II (85.71%) and 2D Digital Animation NC III (50%), which shows that shared ICT-related skills are somewhat represented. However, other specializations like Animation NC II, Photography NC II, and Audio Production Services NC II showed negligible alignment, indicating inconsistency in incorporating common technical standards across programs. Although not all competencies in this major ICT course align with NC expectations, other subjects in the specialization likely address the common skills/competencies

3. Core Competencies

Core Competencies had the strongest overall alignment, with multiple NCs reaching moderate to comprehensive levels. Notably, Illustration NC II (91.67%), Animation NC II (100%), and 2D Digital Animation NC III (61.54%) displayed high alignment. This suggests that IMAJ programs are more oriented toward technical, job-specific skills compared to foundational and shared competencies.

Totality of Alignment

ICT courses show strong alignment with TESDA Core Competencies, with Animation NC II (100%) and Illustration NC II (91.67%) performing well. However, Basic Competencies are mostly unaligned, with many

NCs at 0%, and Common Competencies vary widely—from 85.71% in Illustration NC II to below 10% in several others. Overall, only two NCs reached moderate total alignment: Illustration NC II (58.97%) and 2D Digital Animation NC III (45.45%). This indicates that while technical skills are well-covered, foundational and shared skills need major improvement for full TESDA compliance. The gaps existed in how major courses aligned with NC competencies, yet these might have been filled through subjects like General Education, Professional, and Exploratory within the ICT specialization.

Fig. 9 Alignment of ICT Courses to TESDA NC Competencies

No.	NC	Course(s)	Basic Competency Hit		% Basic	Common Competency Hit		% Common	Core Competency Hit		% Core	TOTAL %	Description
			Total	Partial		Total	Partial		Total	Partial			
1	Animation NC II	IMAJ 01	0	1	3.33 (1/30)	0	0	0 (0/9)	3	1	100 (4/4)	11.63	Very Low Hit
		IMAJ 08	0	0		0	0		4	0			
2	Illustration NC II	IMAJ 02	0	0	0 (0/13)	0	3	85.71 (12/14)	2	5	91.67 (11/12)	58.97	Moderate Hit
		IMAJ 07	0	0		4	3		12	0			
		IMAJ 08	0	0		5	1		0	2			
3	Computer System Servicing	IMAJ 03	0	0	0 (0/13)	0	3	10.71 (3/28)	4	6	58.82 (10/17)	22.41	Low Hit
4	Web Development NC II	IMAJ 04	2	0	10.34 (3/29)	0	0	0 (0/8)	1	3	52.63 (12/19)	26.79	Low Hit
		IMAJ 05	0	1		0	0		0	5			
		IMAJ 06	0	0		0	0		1	0			
5	2D Digital Animation NC III	IMAJ 08	0	1	25 (3/12)	4	0	50 (4/8)	1	1	61.54 (8/13)	45.45	Moderate Hit
		IMAJ 01	0	2		0	1		1	6			

6	Film and Video Post-Production	IMAJ 10	0	0	0 (0/28)	0	1	4.35 (1/23)	1	5	40 (6/15)	10.61	Low Hit
7	Photography NC II		0	0	0 (0/13)	0	0	0 (0/12)	0	4	18.18 (4/22)	8.51	Low Hit
8	Audio Production Services	IMAJ 11	0	0	0 (0/27)	0	2	9.09 (2/22)	0	0	0 (0/7)	3.57	Low Hit
9	Video Graphic Design NC II	IMAJ 12	0	1	3.45 (1/29)	0	2	25 (2/8)	0	2	9.09 (2/22)	8.48	Low Hit

Legend:

IMAJ01: Drawing Tools and Animation

IMAJ02: Drawing Concepts and Strategies

IMAJ03: Troubleshooting Techniques

IMAJ04: Website Creation

IMAJ05: Internet Marketing

IMAJ06: Author Wares

IMAJ07: Key Drawings

IMAJ08: 2D Digital Animation

IMAJ10: Video Production

IMAJ11: Audio Production

IMAJ12: Print Production

General Analysis

The data reveals that while there is partial success in aligning the competencies, the overall alignment is quite low, especially in Basic competencies across all programs. This may indicate that the foundational training on Basic Competencies needs significant improvements. Furthermore, there is a clear need to strengthen the alignment of TESDA competencies, particularly in Basic and Common competencies. While the Core competencies are better aligned, a more comprehensive approach involving curriculum adjustments, and stronger industry and institutional (TESDA) collaboration will help improve the overall alignment. While gaps exist in how these major course aligns with NC standards, other program courses may include the necessary basic and common competencies such as in General Education, Professional Education, and Exploratory subjects.

These findings is evident in the Second Congressional Commission on Education (2025) Fixing the Foundations: A matter of national survival, EDCOM II year two report, that among Technical Vocational Institutions (TVI), only 16% of TVI programs were aligned with training regulations that award National Certificates (NC), vital credentials for skills recognition and employability. Although the BTLED program is not strictly categorized under Tech-Voc education, the acquisition of National Certificates is increasingly relevant, as these credentials enhance the employability of future BTLED graduates. As emphasized by EDCOM II (2025), addressing competency misalignments is essential not only for improving educational

outcomes but also for ensuring that graduates are equipped with industry-relevant skills that meet labor market demands. This underscores the urgency of systemic reforms in teacher education and skills development to support national workforce goals (EDCOM II, 2025; TESDA, 2024).

VI. CONCLUSION

The study revealed that the BTLED Program demonstrate a strong alignment with the Program Outcomes prescribed in the CMO 78, s. 2017, room for improvement in integrating cultural, social, and educational process-related outcomes across the curriculum is seen but can be offered in other program's subjects such as in General Education subjects.

On the other hand, as per the findings of the research based on the data gathered, most of the BTLED major courses showed significant gaps in meeting the TESDA National Certificate Competencies, similarly in Basic, Common, and Core Competencies. With these findings, it is indeed in need of an action plan for program enhancement to improve the alignment of the BTLED Program courses to TESDA National Certificate competencies, ensuring a better quality in preparing students not only for their teaching career, but preparing graduates as well for certifications from TESDA and meet industry standards.

The data also revealed that while there is partial success in aligning the competencies, the overall alignment is quite low, especially in Basic competencies across all programs. This may indicate that the foundational training on Basic Competencies needs significant improvements in major courses though it can be emphasized as well that while gaps exist in how the major courses aligns with NC standards, other BTLED program courses/subjects in General Education, Professional Education, and Exploratory subjects may include the other competencies which were not hit.

Furthermore, there is a clear need to strengthen the alignment of TESDA competencies, particularly in Basic and Common competencies. While the Core competencies are better aligned, a more comprehensive approach involving curriculum adjustments, and stronger industry and institutional (TESDA) collaboration will help improve the overall alignment.

Based on the results, the following conclusions were drawn:

1. The alignment between the BTLED program outcomes and the CHED Memorandum Order Program Outcomes is evident that there is a Total alignment across the of the outcomes, thus the careful design and integration of these program outcomes into the BTLED curriculum reflect a strong adherence to the guidelines set forth by CHED, ensuring that the program produces graduates who are competent, ethical, and responsive to the educational needs of the country.

2. For the course's alignment in BTLED Program Outcomes, the Agri-Fishery Arts specialization courses deliver solid technical training but they fall short in equipping learners with the full range of competencies defined by TESDA—particularly in the basic and common domains. This partial alignment may impede graduates from fully qualifying for National Certification but while gaps exist in how these major course aligns with NC standards, other program courses may include the necessary basic and common competencies such as in General Education, Professional Education, and Exploratory subjects

3. For the course's alignment in BTLED Program Outcomes, the Home Economics courses alignment TESDA National Certificate competencies is inconsistent, with several courses showing very low alignment, especially in the Basic and Common Competencies. While core competencies are somewhat better aligned, there is still a need for a more comprehensive approach in addressing all the competencies (basic, common, and core) across all courses but while gaps exist in how these major course aligns with NC standards, other program

courses may include the necessary basic and common competencies such as in General Education, Professional Education, and Exploratory subjects

4. For the course's alignment in BTLED Program Outcomes, the Information and Communication Technology courses reveal that while IMAJ courses adequately address core technical skills in certain specializations but they fall significantly short in Basic and Common Competencies. This incomplete alignment undermines the overall goal of preparing students not just for technical roles, but for success in the workplace where communication, problem-solving, and industry-wide standards are essential but while gaps exist in how these major course aligns with NC standards, other program courses may include the necessary basic and common competencies such as in General Education, Professional Education, and Exploratory subjects

5. With the findings, it is indeed in need of an action plan for program enhancement to improve the alignment of the BTLED Program courses to TESDA National Certificate competencies, ensuring a better quality in preparing students not only for their teaching career, but preparing graduates as well for certifications from TESDA and meet industry standards.

Based on the findings and conclusion, the following recommendations are given:

1. While the alignment of Program Outcomes of the present curriculum to CHED prescribed program outcomes is evident, most of the major courses are emphasizing the need to demonstrate expertise in Technology and Livelihood Education and on preparing students to act professionally and use technology effectively, thus it is recommended to enhance focus on other program outcomes stipulated in the present curriculum such as in cultural, social, and educational process-related outcomes across curriculum though other program courses may include them reviewed holistically.

2. The study recommends a Competency-based training to the faculty members.

4. It is recommended to strengthen industry collaboration and partner institution collaboration.

5. It is also recommended to adapt the action plan presented in this study.

6. Similar and/or follow up study may be conducted on curriculum quality audit covering the whole program (including all subjects) which may generate findings that could contribute to the enhancement of the BTLED Program.

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