

Implementation of the Revised Technology and Livelihood Education (TLE) Curriculum in the Schools Division of Tabaco City

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Abstract

This study examined the implementation of the revised Technology and Livelihood Education (TLE) curriculum in the public secondary schools of the Schools Division of Tabaco City. Anchored on Transformational Leadership Theory, Instructional Leadership Theory, Systems Theory, Distributed Leadership Theory, the Integrated Curriculum Implementation Theory, and the Input–Process–Output–Outcome framework, the study assessed curriculum implementation in terms of teacher expertise, relevant trainings, learning resources, monitoring and evaluation, and feedback. A mixed-methods research design was used. Quantitative data were gathered through a structured researcher-made questionnaire, while qualitative data were obtained through semi-structured interviews. The respondents consisted of 45 TLE teachers and 11 school principals selected through total enumeration. Data were analyzed using frequency counts, percentages, weighted mean, and thematic analysis. Findings showed that teacher expertise was highly implemented, monitoring and evaluation were also highly implemented, feedback mechanisms were implemented, relevant trainings were implemented but with teacher-perceived limitations, and learning resources were fairly implemented. The major strategies identified were collaborative planning, resource prioritization, mentoring, use of monitoring data, and external partnerships. The main challenges included limited budget, insufficient hands-on training, inadequate learning resources, large class sizes, limited instructional time, weak partnerships, and coordination gaps. The study concluded that while the revised TLE curriculum was generally implemented, improvement is needed in training, resources, feedback systems, and stakeholder collaboration. The study supports SDG 4, SDG 8, SDG 9, and SDG 17 by promoting quality education, employability, technical skills development, and partnerships. Its sustainability impact lies in strengthening educational, socio-economic, institutional, and workforce-readiness outcomes through improved TLE curriculum implementation.

Keywords: Collaborative Planning, Curriculum Implementation, Learning Resources, Monitoring and Evaluation, School Leadership, Teacher Expertise, Technical-Vocational Education, Technology and Livelihood Education, Training Development

1. Introduction

The implementation of the revised Technology and Livelihood Education (TLE) curriculum is a significant concern in basic education because it supports the development of practical, technical, entrepreneurial, and employability skills among learners. In the context of global labor market changes, digital transformation, and competency-based education, TLE serves as an important foundation for preparing students for further education, employment, entrepreneurship, and lifelong learning. This study examines the implementation of the revised TLE curriculum in the secondary schools of the Schools Division of Tabaco City, particularly in terms of teacher expertise, relevant trainings, learning resources, monitoring and evaluation, and feedback. It also identifies implementation strategies and challenges as bases for a management-driven action plan.

Education in the 21st century increasingly emphasizes competencies that extend beyond academic knowledge, particularly practical, technological, and employability-oriented skills. As industries change through automation, innovation, and sustainability, technical and vocational education has become essential in preparing adaptable and skilled learners. UNESCO (2021) emphasizes that technical and vocational education and training contributes to the Sustainable Development Goals by promoting decent work, lifelong learning, and inclusive economic growth. Similarly, OECD (2020) reports that strong TVET systems help align education with labor market needs by producing graduates with both cognitive and technical skills. Educational leadership and curriculum management are central to successful curriculum implementation. Hallinger (2020) notes that instructional leadership focused on supervision, teacher development, and curriculum alignment is associated with improved student outcomes and teacher performance. Bush (2021) further explains that effective curriculum management requires visionary leadership, collaboration, accountability, and continuous improvement. In vocational education, school leaders play a crucial role in coordinating teacher training, managing learning

resources, and ensuring that assessment systems measure real-world competencies (Choi et al., 2022). In the Philippines, the Department of Education strengthened technical-vocational education through the K to 12 curricula. Technology and Livelihood Education serves as a preparatory subject for the Technical-Vocational-Livelihood track in senior high school and aims to equip learners with entrepreneurial, technical, and employability skills (DepEd, 2020). The revised TLE curriculum integrates competencies in home economics, industrial arts, agri-fishery, and information and communication technology. However, implementation continues to face concerns related to inadequate facilities, outdated equipment, limited funding, insufficient teacher training, and uneven monitoring systems (Gonzales et al., 2023; Villanueva et al., 2021).

The reviewed literature shows that curriculum implementation is a continuing process in which intended curricular goals are translated into classroom practice. Fullan (2020) explains that curriculum change is shaped by institutional, cultural, and contextual factors rather than being a one-time event. OECD (2020) emphasizes that curriculum reforms should align with 21st-century competencies such as digital literacy, collaboration, and problem-solving, while UNESCO (2021) highlights the importance of teacher preparedness, support systems, and school capacity in implementing competency-based curricula. Estrellado (2023) notes that recent Philippine curriculum reforms aim to decongest content, improve relevance, and strengthen competency-based learning. Teacher expertise is consistently identified as a major determinant of effective curriculum implementation. Darling-Hammond et al. (2020) describe teacher competence as the combination of pedagogical knowledge, content mastery, and the ability to connect theory and practice. OECD (2020), Sahlberg (2021), Jones et al. (2022), Choi et al. (2022), and UNESCO (2021) similarly emphasize that teacher quality, technical competence, and the ability to contextualize instruction influence the effectiveness of vocational education. Philippine studies also confirm that TLE implementation depends heavily on teachers' pedagogical and technical competence, access to industry-based seminars, coaching, and continuous support (Aquino, 2025; Dordas et al., 2025; Mendez, 2023; Fado et al., 2025; Cruz et al., 2022). Relevant trainings are also essential in supporting curriculum reform. Desimone (2020) explains that professional development is most effective when it is continuous, content-specific, and linked to classroom practice. Darling-Hammond et al. (2020) further emphasize coaching, mentoring, lesson study, and job-embedded learning. UNESCO (2021), OECD (2020), and World Bank (2021) stress that training for technical-vocational teachers should strengthen both pedagogy and technical competence, including workplace immersion and industry collaboration. Philippine studies show that TLE teachers need targeted training aligned with specialization areas, follow-up instructional guidance, and equitable access to professional development opportunities (Dordas et al., 2025; Mendez, 2023; Aquino, 2025; Bautista et al., 2021; Hallinger et al., 2022; Estrellado, 2023; Fado et al., 2025).

Learning resources are another decisive factor in TLE implementation because the subject requires tools, equipment, instructional materials, laboratories, workshop spaces, and safe learning environments. UNESCO (2021), OECD (2020), and World Bank (2021) note that practical competencies cannot be effectively taught without adequate resources. DepEd guidelines indicate that while the general maximum class size in secondary schools is 45 learners, smaller groups are recommended for laboratory and technical-vocational activities to ensure safety, supervision, and effective skill development (DepEd, 2016). Resource limitations, outdated equipment, insufficient consumables, large class sizes, and uneven access to tools have been found to limit hands-on learning and performance-based assessment in TLE (Gonzales et al., 2023; Mendez, 2023; Dordas et al., 2025; Fado et al., 2025; Lim et al., 2021; UNESCO, 2021). Monitoring, evaluation, and feedback further influence implementation quality. Llanes and Torralba (2022) explain that monitoring tracks curriculum practices, while evaluation assesses whether intended outcomes are achieved. OECD (2020), UNESCO (2021), SEAMEO (2022), ASEAN TVET Council (2023), and Lim et al. (2021) identify classroom observations, competency portfolios, workplace assessments, digital portfolios, peer review, and standardized tools as useful mechanisms in vocational education. However, studies also show that monitoring systems are sometimes weakened by limited manpower, heavy workloads, weak data use, and lack of standardized indicators (Llanes et al., 2022; Dordas et al., 2025; Gonzales et al., 2023; Uy et al., 2022; Ocampo, 2023). Feedback becomes effective only when it is specific, timely, developmental, and linked to classroom observation and evaluation data (Llanes et al., 2022; Hallinger et al., 2022; UNESCO, 2021; OECD, 2020; Fado et al., 2025).

Globally, countries such as Germany, Australia, and South Korea have strengthened vocational education systems through competency-based curriculum models, industry partnerships, practical training, and lifelong learning opportunities (World Bank, 2021). In ASEAN, regional reforms have focused on harmonizing TVET standards, teacher development frameworks, and quality assurance mechanisms to support competitiveness and mobility (SEAMEO, 2022). Thailand and Malaysia have adopted leadership-driven TVET management approaches involving schools, industries, and local governments (Rahman et al., 2021), while Singapore's SkillsFuture initiative highlights the role of educational leadership in promoting continuous learning and competency-based education (Tan et al., 2020). Despite these initiatives, ASEAN countries continue to face gaps in teacher expertise, training facilities, and industry linkages (ASEAN TVET Council, 2023). Nationally, the revised TLE curriculum is part of the Philippine effort to strengthen technical-vocational education under the K to 12 system. Its implementation requires competent teachers, updated learning resources, effective school leadership, strong monitoring systems, and sustained professional development. Studies in the Philippine setting indicate

that implementation challenges include inadequate facilities, outdated equipment, limited funding, insufficient teacher training, specialization mismatch, weak monitoring systems, and inconsistent supervision (Gonzales et al., 2023; Villanueva et al., 2021; Mendez, 2023; Aquino (2025); Dordas et al. (2025); Ramos et al., 2023). Locally, Tabaco City reflects both national trends and site-specific conditions. As a developing urban center with several public secondary schools, the division experiences differences in resource availability, teacher expertise, and administrative capacity. The revised TLE curriculum is currently implemented among Grade 7 and Grade 8 students, making it necessary to examine how schools manage implementation in terms of teacher expertise, relevant trainings, learning resources, monitoring and evaluation, feedback, strategies, and challenges.

This study is anchored on several leadership and systems-based theories that explain the implementation of the revised TLE curriculum. Transformational Leadership Theory by Burns (1978) and Bass (1990) emphasizes how leaders inspire and motivate teachers to embrace change, commit to organizational goals, and support innovation during curriculum implementation. Instructional Leadership Theory advanced by Hallinger and Murphy (1985) highlights the principal's role in supervising instruction, strengthening teacher competence, providing feedback, and aligning classroom practices with curriculum goals. Systems Theory by Bertalanffy (1968) views schools as open systems composed of interconnected elements such as teachers, resources, policies, and instructional processes. This perspective is relevant because curriculum implementation depends on how these elements interact within the school environment. Distributed Leadership Theory by Spillane (2006) emphasizes shared responsibility among administrators, coordinators, master teachers, and teachers in planning, supporting, and improving curriculum delivery. Building from these theories, the study uses the Integrated Curriculum Implementation Theory (ICIT) as its guiding lens. The model integrates transformational, instructional, systems, and distributed leadership perspectives to explain how leadership practices, teacher expertise, learning resources, monitoring, evaluation, and feedback interact in supporting the implementation of the revised TLE curriculum. The study also adopts the Input–Process–Output–Outcome framework, where inputs include teacher expertise, trainings, resources, monitoring and evaluation, feedback, strategies, and challenges; the process involves instrument validation, data gathering, distribution and retrieval, tabulation, analysis, and interpretation; the output is an action plan; and the expected outcome is improved and sustainable implementation of the revised TLE curriculum.

The literature confirms that the implementation of the revised TLE curriculum is shaped by teacher competence, relevant trainings, learning resources, monitoring and evaluation, feedback systems, leadership practices, and contextual school conditions. Fullan (2020), Estrellado (2023), and Alsubaie (2022) show that curriculum reform requires sustained translation from policy into classroom practice. Aquino (2025), Mendez (2023), Dordas et al. (2025), and Cruz et al. (2022) show that teacher expertise is a major determinant of TLE implementation. Desimone (2020), Darling-Hammond et al. (2020), and Bautista et al. (2021) emphasize the importance of relevant and sustained trainings. Gonzales et al. (2023), UNESCO (2021), and World Bank (2021) highlight the importance of learning resources, while Llanes et al. (2022), Hallinger et al. (2022), and Uy et al. (2022) stress the role of monitoring, evaluation, and feedback. However, few studies have examined these elements together in relation to the revised TLE curriculum within a specific schools division context. There is limited empirical evidence on how the revised TLE curriculum is implemented in the Schools Division of Tabaco City, particularly in terms of teacher expertise, relevant trainings, learning resources, monitoring and evaluation, feedback, strategies, and challenges. This gap provides the rationale for the present study, which aims to generate localized evidence and propose a management-driven action plan suited to the division's educational context.

The study aligns most directly with SDG 4 – Quality Education because it focuses on improving curriculum implementation, teacher competence, instructional quality, and learning experiences in Technology and Livelihood Education. By examining how the revised TLE curriculum is managed and supported, the study contributes to the strengthening of competency-based education and lifelong learning. The study also relates to SDG 8 – Decent Work and Economic Growth because TLE develops technical, entrepreneurial, and employability skills that can prepare learners for future work, livelihood, and entrepreneurship. Its focus on practical competencies, industry relevance, and workforce preparedness supports the broader goal of inclusive economic participation. The study may further support SDG 9 – Industry, Innovation and Infrastructure through its attention to learning resources, technical facilities, equipment, and school-industry linkages. It also connects with SDG 17 – Partnerships for the Goals because effective TLE implementation may involve collaboration among schools, DepEd offices, local government units, industry partners, TESDA, teacher education institutions, and other stakeholders.

This study contributes to educational sustainability by supporting evidence-based improvement in curriculum implementation, teacher development, instructional supervision, and competency-based learning. It provides school administrators, TLE coordinators, master teachers, education supervisors, curriculum developers, and policymakers with localized information that may guide interventions for improving the delivery of the revised TLE curriculum. The study also contributes to socio-economic sustainability by strengthening a curriculum area that prepares learners for livelihood, employment, entrepreneurship, and practical life skills. Since TLE is connected to technical skills, resource management, industry standards, and workforce readiness, improving its implementation can support community development and local

economic participation. In terms of institutional sustainability, the study emphasizes leadership, monitoring, evaluation, feedback, resource allocation, and collaborative support systems. These elements are essential in ensuring that curriculum reform is not limited to policy adoption but is translated into consistent classroom practice. Overall, the study supports a multidisciplinary view of sustainability by linking education, skills development, employment readiness, institutional management, community participation, and long-term curriculum improvement.

2. Material and methods

2.1 Research Design

The study employed a mixed-methods research design to investigate how leadership and curriculum management affected the implementation of the revised TLE curriculum in Tabaco City. Quantitative data were gathered through a structured survey to measure the extent of implementation across five dimensions: teacher expertise, relevant trainings, learning resources, monitoring and evaluation, and feedback. The survey also examined the presence of management strategies and challenges. Qualitative data were obtained through key informant interviews to provide deeper insights into the same areas and to gather suggestions for improvement. This design allowed the study to combine numerical trends with interview-based explanations, resulting in a more comprehensive understanding of curriculum management practices.

2.2 Locale of the Study

The study was conducted in the Schools Division of Tabaco City, Province of Albay, under the Department of Education Region V. The division includes both urban and rural secondary schools, making it suitable for examining the implementation of the revised TLE curriculum across varied school contexts. These differences allowed the study to capture diverse experiences related to curriculum management, resource availability, teacher readiness, and implementation challenges.

2.3 Respondents of the Study

The respondents were TLE teachers and school principals from public secondary schools in the Schools Division of Tabaco City. They were selected because they were directly involved in the implementation and supervision of the revised TLE curriculum. The TLE teachers were responsible for classroom instruction and curriculum delivery, while the principals provided leadership and oversight in ensuring proper implementation. Only teachers officially handling TLE subjects during School Year 2024–2025 were included. Newly hired teachers with less than one year of teaching experience and those not assigned to TLE subjects were excluded. The study involved 45 TLE teachers and 11 school principals, for a total of 56 respondents.

2.4 Sample and Sampling Procedure

The study used total enumeration as its sampling procedure. All qualified TLE teachers and school principals from the participating public secondary schools were included as respondents. This approach ensured that the study covered the entire group of individuals directly involved in the implementation and supervision of the revised TLE curriculum during School Year 2024–2025.

2.5 Research Instrument

The study used two researcher-made instruments: a structured questionnaire for the quantitative phase and a semi-structured interview guide for the qualitative phase. Both instruments underwent content validation by experts in education and curriculum implementation to ensure clarity, accuracy, and alignment with the study objectives. The questionnaire contained four parts. The first part assessed the implementation of the revised TLE curriculum in terms of teacher expertise, relevant trainings, learning resources, monitoring and evaluation, and feedback. The second part identified strategies used in implementing the revised curriculum, including mentoring, peer coaching, collaborative planning, and resource sharing. The third part examined challenges encountered during implementation, such as lack of materials, insufficient training opportunities, and limited administrative support. The fourth part gathered suggestions and recommendations for improving the implementation of the revised TLE curriculum. A four-point Likert scale was used, with adjectival interpretations corresponding to the specific sections of the instrument. The semi-structured interview guide was used to gather detailed perspectives from school leaders and supervisors. The interview questions were aligned with the five implementation dimensions covered in the questionnaire. The guide also included questions on management practices, challenges, areas for improvement, and suggestions for sustaining the revised curriculum.

2.6 Data Gathering Procedure

Before data collection, the research instruments were validated by experts in curriculum management, TLE education, and educational research. Their comments were used to refine the instruments and ensure alignment with the research objectives. Formal approval to conduct the study was obtained from the Schools Division Superintendent of Tabaco City Division, followed by permission from the school heads of the participating secondary schools. After approval was secured, informed consent was obtained from the respondents. The researcher personally administered the questionnaires to ensure

that instructions were clear and properly understood. Respondents were given sufficient time to complete the instrument. Interviews were then conducted with school principals, the Education Program Supervisor, and the Public Schools District Supervisor. The interviews lasted approximately thirty to sixty minutes and were conducted either face-to-face or online, depending on participant availability. With consent, the interviews were audio-recorded, and field notes were taken to supplement the recorded data.

2.7 Data Analysis Techniques

Quantitative data from the questionnaires were analyzed using descriptive statistics, including frequency counts, percentages, and weighted mean scores. These tools were used to summarize the extent of curriculum implementation, the presence of management strategies, and the seriousness of challenges encountered by respondents. The weighted mean values were interpreted based on the four-point scale used in the instrument. Qualitative data from interviews and open-ended responses were analyzed through thematic analysis. Interview responses were transcribed, coded, and examined for recurring patterns and themes. The emerging themes were grouped according to the research objectives, particularly leadership practices, management strategies, implementation challenges, and areas for improvement. The quantitative and qualitative findings were then integrated to develop a comprehensive interpretation of the results and to support the formulation of a management-driven action plan for improving the implementation of the revised TLE curriculum in Tabaco City.

2.8 Ethical Considerations

The study observed ethical procedures throughout the data gathering process. Respondents were informed that their participation was voluntary, their responses would be treated with strict confidentiality, and they could withdraw from the study at any time without consequence. Consent was obtained before the administration of questionnaires and the conduct of interviews. Audio recording was done only with participant permission, and all collected information was handled with confidentiality and used only for the purposes of the study.

3. Results and Discussion

3.1 Implementation of the Revised TLE Curriculum

3.1.1 Teacher Expertise

The results showed that teacher expertise was highly implemented, with a combined average weighted mean of 3.77. Teachers rated this dimension higher with an average weighted mean of 3.93, while principals gave an average weighted mean of 3.60. The highest teacher rating was on the availability of teachers with practical skills required by the revised TLE competencies, while principals rated the translation of competency standards into daily lesson plans and activities as the strongest indicator. The lowest principal rating was on access to instructional guides and teacher reference materials aligned with the revised curriculum, although it was still interpreted as highly implemented. These findings indicate that teachers in the Schools Division of Tabaco City generally possess the competence needed to implement the revised TLE curriculum. Their ability to translate competency standards into lessons, design performance tasks, and apply peer coaching reflects readiness for competency-based instruction. However, the lower ratings from principals suggest that access to updated instructional guides and consistency in technical support still require improvement. This supports Aquino (2025), who found that teachers' pedagogical and technical competencies significantly affect students' mastery of TLE competencies. It also agrees with Dordas et al. (2025), who emphasized the importance of both pedagogical and technical expertise in vocational instruction, and Mendez (2023), who noted that instructional competence must be sustained through adequate materials and continuous professional development.

3.1.2 Relevant Trainings

The results showed that relevant trainings were implemented, with a total weighted mean of 2.59. Teachers rated this area as fairly implemented with an average weighted mean of 1.89, while principals rated it higher with an average weighted mean of 3.30. Teachers gave the highest rating to the inclusion of hands-on or practical components in trainings, while the lowest ratings were given to funding or logistical support and follow-up support after trainings. Principals, however, rated collaborative planning time and logistical support more favorably. These findings show a clear gap between the administrative view of training provision and the teachers' actual experience of professional development. Although some training opportunities are present, teachers perceive limitations in frequency, funding, accessibility, and post-training reinforcement. This implies that professional development for TLE teachers should be more specialized, sustained, practical, and aligned with the revised curriculum. Desimone (2020) emphasized that effective professional development must be sustained, content-focused, and connected to classroom practice. Dordas et. al (2025) also highlighted the need for specialized technical training among TLE teachers, while Mendez (2023) found that training programs not aligned with teachers' specialization areas have limited instructional impact.

3.1.3 Learning Resources

The results revealed that learning resources were fairly implemented, with an overall weighted mean of 2.16. Teachers gave an average weighted mean of 1.99, while principals gave 2.33. The strongest indicator was the maintenance and safety management of practical work areas, which was highly implemented. However, the regular supply of consumables and materials for student practical tasks received the lowest rating and was interpreted as least implemented. Other indicators, including updated tools and equipment, printed and digital learning resources, and industry or community linkages, were only fairly implemented. These findings indicate that while schools maintain safe and functional spaces for TLE instruction, they still lack sufficient tools, equipment, consumables, learning materials, and external resource support. This limits the full delivery of hands-on and competency-based learning. UNESCO (2021) explained that competency-based instruction requires appropriate facilities and equipment because practical skills cannot be developed effectively through theoretical discussion alone. The World Bank (2021) also emphasized that tools, laboratories, and consumables influence the quality of vocational training. Similar concerns were reported by Gonzales et. al (2023), Mendez (2023), and Dordas et. al (2025), who found that shortages in equipment and materials limit practical instruction, lead to improvisation, and affect competency assessment.

3.1.4 Monitoring and Evaluation

The results showed that monitoring and evaluation were highly implemented, with a total weighted mean of 3.89. Teachers gave an average weighted mean of 3.97, while principals gave 3.82. The highest-rated indicators were the systematic review of student outputs as evidence of competency attainment and regular curriculum implementation review meetings to analyze outcomes and plan improvements. The use of monitoring and assessment results to inform teacher development and resource allocation was also highly rated. The relatively lowest indicator was the use of standardized rubrics and competency checklists, although it remained highly implemented. These results suggest that schools have established strong monitoring and evaluation practices for the revised TLE curriculum. Teachers and principals regularly review student outputs, conduct curriculum review meetings, and use assessment results to guide instructional improvement. However, the relatively lower rating on standardized rubrics and competency checklists suggests the need to improve consistency in performance assessment. Llanes and Torralba (2022) explained that monitoring becomes effective when it tracks both instructional practices and learner outcomes. OECD (2020) emphasized that competency-based education requires continuous observation of teaching and learner performance, while UNESCO (2021) stressed that evaluation systems in technical-vocational education should be aligned with competency frameworks and practical standards. SEAMEO (2022) also recommended classroom observation, peer collaboration, and institutional review mechanisms to maintain program quality.

3.1.5 Feedback

The results showed that feedback mechanisms were implemented, with a total weighted mean of 3.27. Teachers rated this area at 3.11, while principals rated it higher at 3.43. The highest-rated indicator was the timely provision of constructive feedback based on observations and outputs, followed by the recognition and sharing of effective TLE teaching practices and innovations. However, the routine solicitation and consideration of student and parent feedback received the lowest rating and was interpreted as fairly implemented. The inclusion of teachers' input in decisions about instructional needs and resources was also only implemented. These findings indicate that feedback systems are present but still need to become more participatory and multi-sourced. Teachers receive constructive feedback from administrators and colleagues, but student, parent, and broader stakeholder feedback are not yet consistently gathered and used. This limits the ability of schools to evaluate the TLE program from the perspective of learners and families. Llanes et al. (2022) noted that feedback becomes meaningful when it is linked to observation data and instructional evaluation. Hallinger et al. (2022) emphasized that feedback should be developmental and focused on improving teaching quality. OECD (2020) also highlighted the importance of open communication and collaborative reflection, while UNESCO (2021) stressed that feedback in technical and vocational education should involve multiple stakeholders, including teachers, students, and industry partners.

3.2 Strategies in the Implementation of the Revised TLE Curriculum

The qualitative findings revealed several strategies used by teachers and school leaders to support implementation. These included collaborative planning and consultation, resource management and prioritization, mentoring and professional support, use of monitoring results and student performance data, and partnerships with external stakeholders. Collaborative planning and consultation emerged as the dominant strategy, as teachers regularly discussed revised competencies, adjusted activities based on available resources, and shared suggestions for making lessons more practical and feasible. These findings indicate that the implementation of the revised TLE curriculum depends strongly on cooperation among teachers and administrators. Collaborative planning allows teachers to contextualize competencies based on school realities and student needs. This supports Fullan (2020), who explained that curriculum reform is a continuing process shaped by school culture, leadership, and context. It also aligns with Guo et al. (2021), who emphasized that curriculum reforms become more sustainable when teachers actively participate in implementation, and Alsubaie (2022), who argued that effective curriculum implementation requires alignment among curriculum design, school leadership, and teacher participation.

Resource management and prioritization also emerged as important strategies. Teachers and school leaders prioritized essential tools, used alternative materials, allowed students to share equipment, and modified activities to ensure that practical learning could continue despite limited resources. Mentoring and professional support were also practiced through senior teacher guidance, Learning Action Cell sessions, and sharing of teaching strategies. These strategies show that teachers attempt to sustain competency-based instruction even when resources and training opportunities are limited. These findings imply that adaptive management and teacher collaboration help schools continue practical instruction despite financial and logistical constraints. The results support Gonzales et al. (2023), who found that resource prioritization and equipment management are essential in sustaining vocational programs. UNESCO (2021) similarly emphasized that technical-vocational instruction requires adequate tools and facilities, but effective resource management can reduce the negative impact of shortages. The importance of mentoring and collaboration is also consistent with Darling-Hammond et al. (2020), who emphasized job-embedded professional development, and SEAMEO (2022), which highlighted collaborative professional development frameworks for technical-vocational teachers.

The use of monitoring results and student performance data was another strategy. Teachers reviewed outputs, identified learning gaps, adjusted activities, and provided additional practice before final assessment. External partnerships with local government units, TESDA, private schools, and community stakeholders were also identified as useful, although some were only project-based and not sustained. These findings suggest that monitoring becomes more valuable when its results are used for instructional improvement rather than mere compliance. Llanes et al. (2022) explained that monitoring systems become meaningful only when results are analyzed and used to improve teaching practices. Partnerships also provide additional resources, training, and exposure, supporting SEAMEO (2022) and Rahman et al. (2021), who emphasized the importance of school-industry collaboration in strengthening vocational education. Overall, the strategies show that curriculum implementation in Tabaco City relies heavily on teacher initiative, shared planning, and institutional cooperation.

3.3 Challenges in the Implementation of the Revised TLE Curriculum

The qualitative findings revealed several challenges affecting implementation. These included limited financial resources, insufficient hands-on teacher training, large class sizes, limited instructional time, weak external partnerships, student motivation concerns, communication and coordination gaps, and limited stakeholder support. Limited budget allocation emerged as the dominant challenge because it affected the procurement of tools, consumables, instructional materials, equipment repair, and the continuity of practical learning activities. These findings indicate that financial constraints create a systemic barrier to competency-based TLE instruction. Since TLE is resource-intensive, inadequate funding affects not only materials and equipment but also the quality of hands-on learning experiences. Gonzales et al. (2023) similarly found that inadequate facilities and outdated equipment limit practical TLE instruction. The World Bank (2021) also emphasized that financial limitations often undermine vocational education because equipment, consumables, and maintenance are more costly than in purely academic subjects.

Insufficient teacher training was also identified as a major challenge. Teachers reported that many training activities were lecture-based and lacked hands-on components, especially in the use of equipment, technical competencies, and safety procedures. Large class sizes and limited equipment further reduced students' opportunities to practice skills individually, as some students only observed while others performed tasks. Instructional time constraints also affected the completion of practical activities because regular schedules were sometimes too short for preparation, demonstration, practice, and assessment. These findings show that teacher readiness, class size, equipment availability, and instructional time are interconnected concerns. Insufficient hands-on training may reduce teacher confidence in implementing new competencies and may also create safety concerns during practical activities. This supports Darling-Hammond et al. (2020), who emphasized that professional development should be practice-oriented and connected to classroom instruction. Dordas and Accad (2025) likewise found that TLE teachers require specialized technical training. The issue of large class sizes supports UNESCO (2021), which emphasized manageable class sizes in skills-based education, and Mendez (2023), who reported that overcrowded TLE classes reduce the effectiveness of performance-based learning. The concern on instructional time also supports Hallinger et al. (2022), who emphasized the need for flexible scheduling in skills-based education.

Weak external partnerships were also reported as a challenge. Teachers noted that there were limited nearby industries and that some partnerships were only project-based. Student motivation was also affected when learners had limited opportunities for actual hands-on participation. Communication and coordination gaps were also identified, particularly when meetings were difficult to schedule or information reached teachers late. These findings imply that TLE implementation requires stronger institutional and external support systems. Weak partnerships reduce students' exposure to real-world applications and limit resource augmentation, which aligns with Rahman et al. (2021) and SEAMEO (2022), who emphasized sustained school-industry collaboration in vocational education. Limited hands-on opportunities may also affect student engagement, supporting Bush (2021), who noted that active learning experiences enhance student motivation in vocational education. Communication gaps further weaken collective planning and instructional alignment, supporting

Hallinger et al. (2022), who emphasized structured communication and collaborative decision-making in instructional leadership.

Overall, the challenges are interconnected and systemic. Financial constraints affect tools, materials, training, maintenance, and practice opportunities. Training gaps affect teacher confidence and safety. Large classes, limited time, weak partnerships, and communication issues further limit the effective delivery of competency-based instruction. These findings suggest that improving the revised TLE curriculum requires coordinated support across multiple levels of the education system. Financial resources, teacher training, facilities, scheduling structures, and stakeholder collaboration must be aligned to support meaningful practical learning. This supports Gonzales et al. (2023) and the World Bank (2021), which emphasized financial limitations as persistent barriers in vocational education. It also aligns with systems-oriented perspectives that curriculum reform requires the integration of policy support, leadership practices, and instructional capacity (UNESCO, 2021; Dordas et al., 2025).

3.4 Proposed Action Plan for Improving the Implementation of the Revised TLE Curriculum

The findings served as the basis for a proposed action plan to improve the implementation of the revised TLE curriculum in the secondary schools of Tabaco City Division. The plan addresses teacher training and professional development, learning resources and equipment improvement, monitoring and feedback systems, collaborative leadership and teacher support, and external partnerships and stakeholder engagement. The proposed implementation period is June 2026 to May 2027, with an estimated total budget of ₱750,000.00. The action plan directly responds to the identified gaps in training, resources, monitoring, feedback, leadership collaboration, and partnerships. Its intended outcomes include improved teacher competence, increased availability of instructional resources, better hands-on learning opportunities, enhanced instructional practices, stronger teacher collaboration, and improved industry and community linkages. The plan also includes monitoring through progress reports, classroom observations, coordination meetings, teacher feedback surveys, student performance records, training participation reports, and administrative evaluations. The proposed plan also includes sustainability measures such as continuous professional development, regular equipment maintenance, sustained industry partnerships, and periodic curriculum review. These measures aim to institutionalize improvements in TLE implementation beyond short-term interventions.

Overall, the action plan emphasizes that sustainable implementation of the revised TLE curriculum requires coordinated leadership, continuing teacher development, adequate resources, systematic monitoring, and active stakeholder participation. By strengthening these areas, the Schools Division of Tabaco City can improve the quality of TLE instruction and better prepare learners for practical skills development, employability, entrepreneurship, and lifelong learning.

4. Conclusion & Recommendations

The study concluded that the revised Technology and Livelihood Education (TLE) curriculum in the public secondary schools of the Schools Division of Tabaco City was generally implemented, particularly in terms of teacher expertise and monitoring and evaluation practices. Teachers demonstrated adequate competence in delivering TLE instruction, and schools maintained mechanisms for monitoring instructional practices. However, gaps remained in relevant trainings, learning resources, and systematic feedback mechanisms. The implementation was supported by collaborative planning, mentoring, professional support, use of monitoring data, and community partnerships, but it was also constrained by limited budget, insufficient hands-on training, large class sizes, limited instructional time, and weak industry and community linkages. These findings indicate the need for a structured action plan focused on teacher capacity building, resource allocation, strengthened monitoring and feedback, and enhanced stakeholder collaboration.

It is recommended that school administrators strengthen support for the revised TLE curriculum through continuous instructional guidance, collaborative planning, and effective use of monitoring and evaluation results. The Schools Division of Tabaco City should provide regular, specialization-based, and hands-on professional development programs with follow-up coaching, mentoring, and technical support. Schools, in collaboration with the Division Office, Local Government Units, industries, TESDA, and community stakeholders, should prioritize the acquisition and maintenance of updated tools, equipment, and consumable materials for practical instruction and should strengthen partnerships that support experiential learning. The proposed action plan should be implemented to improve teacher competence, learning resources, monitoring and feedback mechanisms, collaborative leadership, and stakeholder engagement for more sustainable TLE curriculum implementation.

The study was limited to public secondary schools in the Schools Division of Tabaco City that were implementing the revised TLE curriculum. Private schools and institutions outside the division were not included. The respondents were limited to TLE teachers and school principals with at least one year of experience handling or supervising TLE subjects. The study focused only on the implementation of the revised TLE curriculum in terms of teacher expertise, relevant

trainings, learning resources, monitoring and evaluation, feedback, strategies, and challenges, and it did not assess student academic performance. The findings were limited to the conditions and practices within the division during the period of data collection and may not be generalized to other school divisions with different contexts.

Compliance with ethical standards

The study was conducted in accordance with institutional ethical standards, with formal approval secured from the concerned authorities before data collection. Participation was voluntary, and informed consent was obtained from all respondents, who were assured of confidentiality, anonymity, and the right to withdraw from the study at any time without consequence. All gathered data were used solely for research purposes, and the authors declare no conflict of interest. Proper acknowledgement is given to all individuals and institutions that contributed to the completion of the study, while copyright ownership and authorship responsibility remain with the researchers.

REFERENCES

- Alonzo, C., & Magday, L. (2023). Leadership bottlenecks in curriculum implementation among secondary schools. *International Journal of Educational Leadership and Management*, 14(2), 88–104.
- Alsubaie, M. A. (2022). Curriculum development: Teacher involvement in curriculum implementation. *International Journal of Education and Practice*, 10(4), 123–133. <https://doi.org/10.18488/61.v10i4.3124>
- Aquino, M. A. (2025). Teachers' competence and the performance of Grade 9 Technology and Livelihood Education students in achieving Most Essential Learning Competencies (MELCs). *Journal of Interdisciplinary Perspectives*, 3(2), 316–324. <https://doi.org/10.69569/jip.2024.0618>
- Aroca, J. A. S., Gonzales, M. C., & Rojas, C. A. (2022). Teachers' professional development and intelligent ways of improving education. *Frontiers in Education*, 7, Article 819384. <https://doi.org/10.3389/feduc.2022.819384>
- ASEAN TVET Council. (2023). *ASEAN TVET development and cooperation report 2023*. SEAMEO Secretariat.
- Bass, B. M. (1990). From transactional to transformational leadership: Learning to share the vision. *Organizational Dynamics*, 18(3), 19–31. [https://doi.org/10.1016/0090-2616\(90\)90061-S](https://doi.org/10.1016/0090-2616(90)90061-S)
- Bautista, E., & Magsino, A. (2021). Industry partnerships and school leadership in technical-vocational education. *Philippine Journal of Technical Education*, 12(3), 57–73.
- Bautista, J. P., Santos, E., & Villafior, M. (2021). TLE instruction in the new normal: Challenges and innovations. *Philippine Journal of Educational Studies*, 10(2), 88–101.
- Beltran, G. (2021). Professional development barriers among TLE teachers. *Asian Journal of Teacher Education*, 11(1), 21–35.
- Bernales, R., & Fabro, C. (2021). Managerial practices and curriculum fidelity in public secondary schools. *Educational Research Forum*, 9(2), 33–48.
- Bertalanffy, L. von. (1968). *General system theory: Foundations, development, applications*. George Braziller.
- Burns, J. M. (1978). *Leadership*. Harper & Row.
- Bush, T. (2021). Leadership and management in education: The importance of vision and direction. *Educational Management Administration & Leadership*, 49(3), 381–394. <https://doi.org/10.1177/1741143220981100>
- Calderon, A. C. (2022). Adaptive leadership and school resilience during the COVID-19 pandemic in the Philippines. *Asia Pacific Journal of Education*, 42(4), 621–636. <https://doi.org/10.1080/02188791.2022.2054223>
- Carreon, J. (2022). Managing external partnerships in technical education. *Southeast Asian Journal of School Management*, 10(4), 60–75.
- Castillo, M. (2022). Leadership and teacher assignment mismatches in secondary schools. *Philippine Journal of Educational Administration*, 7(1), 19–34.
- Choi, Y., & Kim, S. (2022). Global trends in technical and vocational education: Lessons for curriculum leadership. *International Journal of Educational Development*, 90, Article 102548. <https://doi.org/10.1016/j.ijedudev.2022.102548>
- Cortez, D. (2022). Complexities of curriculum leadership in Philippine public schools. *Journal of Educational Change and Development*, 8(2), 41–59.
- Cruz, L. A., & Ramirez, P. B. (2022). Teacher development and management practices in technical-vocational education. *International Journal of Educational Research and Innovation*, 15(1), 133–147.
- Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, 24(2), 97–140. <https://doi.org/10.1080/10888691.2018.1537791>
- David, P., & Ramos, J. (2022). Financial management and procurement issues in school-based budgeting. *Educational Management Review*, 6(2), 49–63.
- De la Cruz, F., & Marquez, K. (2023). Leadership resilience in managing curriculum transitions. *Asia Pacific Journal of Educational Research*, 19(1), 99–115.

- Dela Rosa, E. P., & Garcia, R. F. (2023). Leadership styles and teacher motivation in public secondary schools. *Asian Journal of Leadership and Education*, 9(1), 50–67.
- Department of Education. (2020). *K to 12 curriculum guide: Technology and Livelihood Education (TLE)*. Bureau of Curriculum Development.
- Department of Education. (2023). *MATATAG curriculum: Bansang Makabata, Batang Makabansa framework*. Curriculum and Teaching Strand. <https://www.deped.gov.ph/matatag-curriculum>
- Department of Education. (2023). *MATATAG curriculum: Implementation guidelines* [Policy brief]. Department of Education.
- Department of Education. (2024). *MATATAG curriculum guide for Technology and Livelihood Education*. Bureau of Curriculum Development.
- Department of Education. (2024). *Revised K to 12 curriculum overview and implementation guidelines*. Bureau of Curriculum Development. <https://www.deped.gov.ph/k-to-12-curriculum-revision>
- Dordas, R. H., & Accad, A. S. (2025). Pedagogical and technical competence level, problems and competency needs of Technology and Livelihood Education (TLE) teachers: Basis for professional development program. *Psychology and Education: A Multidisciplinary Journal*, 41(1), 1–40. <https://doi.org/10.70838/pemj.410101>
- Dumlao, A., & Perez, H. (2023). Instructional supervision constraints in public high schools. *Philippine Educational Leadership Review*, 18(3), 77–92.
- Esguerra, J., & Lagmay, P. (2024). Administrative communication and policy dissemination challenges. *Journal of Educational Administration Studies*, 11(1), 45–58.
- Estrellado, C. J. P. (2023). MATATAG curriculum: Why curriculum [must] change? *Journal of Interdisciplinary Perspectives*, 2(1), 6–10. <https://doi.org/10.5281/zenodo.10336930>
- Estrellado, M. A. (2023). Curriculum revision and innovation in Philippine education: Challenges and responses. *Philippine Educational Research Journal*, 5(1), 21–35.
- Fado, R. R., & Campado, A. V. (2025). A phenomenological inquiry on the MATATAG curriculum: Experiences of secondary school teachers in Maasim 3 District. *Psychology and Education: A Multidisciplinary Journal*, 42(7), 949–959. <https://doi.org/10.70838/pemj.420704>
- Fullan, M. (2020). *The new meaning of educational change* (5th ed.). Teachers College Press.
- Gonzales, R. M., Bautista, L. E., & Mallari, F. G. (2023). Barriers to effective implementation of TLE curriculum in Philippine public schools. *Journal of Technical Education and Skills*, 4(2), 92–108.
- Guo, X., & Lu, J. (2021). Educational leadership and curriculum implementation in Asian schools: Policy to practice. *Asia Pacific Education Review*, 22(3), 451–466. <https://doi.org/10.1007/s12564-021-09697-0>
- Hallinger, P. (2020). Instructional leadership and the improvement of teaching and learning. *Educational Management Administration & Leadership*, 48(2), 271–282. <https://doi.org/10.1177/1741143219836688>
- Hallinger, P. (2021). Mapping instructional leadership in educational research: A review and analysis. *Educational Management Administration & Leadership*, 49(4), 601–620. <https://doi.org/10.1177/1741143220981449>
- Jones, A., & Palmer, R. (2022). Teacher expertise and curriculum fidelity in Australian schools. *Australian Educational Researcher*, 49(3), 455–472. <https://doi.org/10.1007/s13384-021-00493-5>
- Lagrada, B. (2021). Role overload and instructional leadership effectiveness among school heads. *Asian Education Studies Journal*, 5(4), 72–88.
- Lim, C., & Bautista, A. (2021). Digital transformation and leadership in ASEAN education systems. *Asia-Pacific Education Researcher*, 30(5), 449–463. <https://doi.org/10.1007/s40299-021-00579-6>
- Llanes, J. R., & Torralba, P. N. (2022). Monitoring and evaluation practices in curriculum implementation: Basis for policy enhancement. *Philippine Journal of Educational Research*, 7(1), 35–49.
- Mendez, R. D. (2023). Instructional competencies of Technology and Livelihood Education teachers in Sta. Cruz District, Sta. Cruz, Zambales. *Psychology and Education: A Multidisciplinary Journal*, 11, 480–489. <https://doi.org/10.5281/zenodo.8196312>
- Mercado, R. (2023). Budget limitations in livelihood education programs. *Journal of Educational Policy and Management*, 9(2), 38–52.
- Merriam-Webster. (2019). *Merriam-Webster's collegiate dictionary* (11th ed.). Merriam-Webster, Incorporated.
- Morales, T., & Yumul, D. (2023). Communication gaps and curriculum misalignment in public schools. *International Journal of Pedagogical Studies*, 13(2), 55–70.
- Northouse, P. G. (2022). *Leadership: Theory and practice* (9th ed.). Sage Publications.
- Ocampo, V. (2023). Monitoring practices in competency-based curriculum implementation. *Journal of Curriculum Evaluation*, 15(1), 24–39.
- OECD. (2020). *Vocational education and training for the future of work*. OECD Publishing.
- Organisation for Economic Co-operation and Development. (2020). *Teachers as designers of learning environments: The importance of innovative professional development*. OECD Publishing. <https://doi.org/10.1787/919ea220-en>
- Organisation for Economic Co-operation and Development. (2020). *Teaching in focus: Effective teachers for a changing world*. OECD Publishing.

- Organisation for Economic Co-operation and Development. (2021). *Professional learning communities and teacher collaboration: Evidence from TALIS 2018*. OECD Publishing. <https://doi.org/10.1787/059ce9d5-en>
- Ortega, J., & Real, S. (2023). Resource allocation and infrastructure management in TLE laboratories. *Bicol Education Research Journal*, 14(3), 19–33.
- Pascual, R., & Mendoza, G. (2024). Distributed leadership and collaborative management in secondary schools. *Philippine Journal of Educational Innovation*, 13(1), 11–27.
- Phumee, K. (2023). Teacher competence and technology integration in Thai vocational schools. *ASEAN Journal of Education and Development*, 9(1), 75–91.
- Rahman, A., & Ismail, M. (2021). Leadership and management in Malaysian TVET institutions: Emerging perspectives. *ASEAN Journal of Technical and Vocational Education*, 3(1), 23–41.
- Robbins, S. P., & Coulter, M. (2021). *Management* (15th ed.). Pearson Education.
- Robbins, S. P., & Judge, T. A. (2019). *Organizational behavior* (18th ed.). Pearson Education.
- Robles, A. (2022). Leadership distribution and teacher participation in decision-making. *Journal of Educational Leadership and Policy Research*, 10(2), 81–95.
- Sahlberg, P. (2021). *Finnish lessons 3.0: What can the world learn from educational change in Finland?* Teachers College Press.
- Southeast Asian Ministers of Education Organization. (2022). *Strengthening ASEAN TVET through collaboration and innovation*. SEAMEO Secretariat.
- Spillane, J. P. (2006). *Distributed leadership*. Jossey-Bass.
- Tan, C., & Gopinathan, S. (2020). SkillsFuture and the reform of lifelong learning in Singapore: Leadership implications. *Educational Review*, 72(4), 438–454. <https://doi.org/10.1080/00131911.2019.1566219>
- Technical Education and Skills Development Authority. (2022). *TESDA partnership and linkage guidelines*. TESDA Publications.
- Torres, M. (2024). Equity issues and leadership adaptability in curriculum implementation. *Asian Journal of Education and Development*, 17(2), 63–79.
- UNESCO. (2021). *Building skills for the future: Transforming technical and vocational education and training*. UNESCO Publishing.
- UNESCO. (2022). *Global education monitoring report 2022: Education for sustainable development*. UNESCO Publishing. <https://unesdoc.unesco.org/>
- UNESCO International Institute for Educational Planning. (2022). *Monitoring and evaluation framework for curriculum implementation*. UNESCO-IIEP Publications.
- Uy, P., & Sarmiento, C. (2022). Evaluation systems and data-driven decision-making in public education. *Journal of School Management and Evaluation*, 9(1), 15–29.
- Villafuerte, E., & de Jesus, A. (2024). Teacher specialization gaps and leadership responses in TLE. *Philippine Vocational Education Journal*, 16(1), 100–117.
- Villanueva, R. T., & Reyes, J. M. (2021). Implementation issues of TLE in secondary schools: An assessment. *International Journal of Educational Policy and Practice*, 6(2), 110–124.
- Villarin, C., & Santos, N. (2023). Shared leadership and innovation in curriculum management. *Educational Practice and Research Journal*, 20(4), 45–59.
- Wiggins, G. (1998). *Educative assessment: Designing assessments to inform and improve student performance*. Jossey-Bass.
- Wisniewski, B., Zierer, K., & Hattie, J. (2020). The power of feedback revisited: A meta-analysis of educational feedback research. *Frontiers in Psychology*, 10, Article 3087. <https://doi.org/10.3389/fpsyg.2019.03087>
- World Bank. (2021). *Global trends in technical and vocational education and training*. World Bank Publications.
- Yukl, G. (2020). *Leadership in organizations* (9th ed.). Pearson Education.