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TEACHERS' ADAPTABILITY IN TEACHING TECHNOLOGY AND LIVELIHOOD EDUCATION

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Abstract

Technology and Livelihood Education (TLE) teachers face resource and training limitations. In pursuit of this line of thinking, this study aimed to determine the level of adaptability of teachers in teaching Technology and Livelihood Education (TLE) in a fourth-class city in a medium-sized Division in Northern Negros during the school year 2022-2023 as the basis for an intervention plan. Data for this quantitative, descriptive study were collected from 52 secondary TLE teachers using a researcher-made questionnaire that has been subjected to, and has passed, the validity and reliability testing. Additionally, data collection has been done strictly following research ethics protocol. Results showed a very high level of adaptability of teachers in teaching TLE in the research environment in a fourth-class city in a medium-sized Division of Northern Negros. Moreover, no significant difference was found in the level of adaptability of TLE teachers in different areas of teaching technology and livelihood education when grouped and compared according to the aforementioned variables. The results call for institutional and contextual factors to play a stronger role than personal attributes in shaping their teaching flexibility.

Keywords: teachers' adaptability, teaching strategies, Technology and Livelihood Education (TLE), teacher preparedness, TLE instructional competence

Introduction

Rationale

Philippine Secondary Education emphasizes Technology and Livelihood Education (TLE). Home Economics, Agri-Fishery Arts, Industrial Arts, and ICT are included. In 2010, the Secondary Education Curriculum called it Career Pathways in Technology and Livelihood Education. It gives CP-TLE 240 minutes each week and gives pupils community service experience after school (Espiritu, 2020). Technology is crucial in TLE sessions, but not all teachers can do it. The Department of Education is striving to build facilities and hire teachers, but it's challenging to locate qualified TLE teachers who can teach talented, motivated, and productive pupils (Espiritu, 2020; Yunos, 2020).

Schools and businesses working together can improve workplace learning by teaching students IT skills they need for jobs (Pardjono et al., 2018). The K to 12 Basic Education Program addresses longstanding education issues. TLE specializations assist students get the skills they need to acquire COCs and NCs, which will help them find jobs at home and abroad (Hermida & Habla, 2022). Consider material, instructional methods, and technology to make TLE teachers more versatile. This includes testing instructors' skills, personal and professional attributes, and technology training. Teachers must adapt to classroom demands, use several teaching styles, and use technology to personalize learning and provide extra

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support. This study examines TLE teachers' flexibility and experiences that have prepared them to teach.

Literature Review

TLE is essential to Philippine secondary education. Learn real-world Home Economics, Agri-Fishery Arts, Industrial Arts, and ICT skills. TLE teachers must be adaptable and skilled. The Department of Education has provided schools with resources and educated teachers, but they cannot teach all TLE categories' specific abilities (Espiritu, 2020). International research reveal that academic qualifications, pedagogical topic knowledge, personality traits, decision-making skills, and professional dispositions affect student outcomes (Lederman & Niess, 2021; Johnson, 2018). Modern teachers must interact with students, ask complex questions, and apply teachings. The new technology makes TLE teaching difficult. Teachers' digital skills depend on age, experience, confidence, and training (Sharma & Srivastava, 2019; Vaskov et al., 2021). While technology-enhanced learning can interest students, many teachers struggle with digital tools, connectivity, and meaningful ICT integration. According to studies, technical skills and technology integration are missing (Ataman, 2020; Basilotta-Gómez-Pablos et al., 2022). Local TLE instructors may be proficient in some technical and methodological areas but not all (Tumbali, 2019; Espiritu, 2020). The K–12 revolution requires more flexible teachers. Teachers must master content, innovate teaching methods, and maintain learning to achieve national certification standards in results, skills, and industry needs education (Hermida & Habla, 2022). According to I-ADAPT, past experiences, self-efficacy, and cognitive flexibility affect teachers' responses to instructional obstacles (Ployhart & Bliese, 2006). Sacramento et al. (2021) discovered demographics and school support affect technology adaption. TLE specializations require solid subject comprehension, learner-centered educational methods, and technical competence and professional advancement, according to the literature. These findings suggest assessing instructors' content, method, and technology adaptability to lead targeted interventions to promote secondary school readiness, continuous learning, and TLE instruction.

Methodology

This chapter presents the study's methodology, which includes the research design, locale of the study, respondents of the study, data gathering instrument, data gathering procedure, validity of the research instrument, reliability of the data research instrument, and statistical treatment used.

Research Design

This study utilized a descriptive quantitative research design to assess the adaptability of teachers in delivering Technology and Livelihood Education in a fourth-class city within a medium-sized division in Northern Negros for the academic year 2022–2023, forming the foundation for an intervention plan. Quantitative research facilitates the methodical collecting and analysis of numerical data to discern trends, evaluate correlations, and accurately characterize occurrences (Bhandari, 2020; McCombes, 2022). In line with this approach, the study employed a survey method that collects information directly from respondents and is proficient in acquiring data on characteristics, attitudes, and practices (Juneja, 2015). This method proved suitable for evaluating instructors' adaptability across essential variables and for producing the evidence required to develop an intervention plan.

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Study Respondents

The respondents of the study were 52 public secondary school teachers handling Technology and Livelihood Education in a fourth-class city within a medium-sized division in Northern Negros during the school year 2022–2023. Using purposive sampling, the study selected participants based on their direct involvement in TLE instruction, ensuring information-rich cases relevant to the research. These teachers were assessed on their level of adaptability in teaching Technology and Livelihood Education.

Instrument

The study utilized a researcher-made survey questionnaire consisting of two parts: (1) the respondents' profile, which gathered data on age, sex, highest educational attainment, and number of TLE trainings, with anonymity optional; and (2) a Likert-scale instrument measuring teachers' preparedness in teaching TLE across three areas—content, strategy, and technology. Each area contained ten items rated on a 5-point Likert scale (5–Always to 1–Never), with corresponding verbal interpretations. The instrument underwent a reliability test to ensure consistency and trustworthiness of the data.

Validity

To ensure the instrument measured the intended variables correctly, it was tested for validity, which is the degree to which an instrument represents the construct it intends to evaluate (Price et al., 2015). Three expert validators checked the researcher's tool using Carter Good and Douglas Scates standards. Each item was evaluated for clarity, relevance, consistency, adequacy, and appropriateness. Validators graded the questionnaire from Poor (1.00–1.80) to Excellent (4.21–5.00) on a five-point Likert scale. A Master's degree holder and Research Coordinator, a Mathematics and Testing Coordinator, and a School Head with Social Studies and Educational Management degrees comprised the panel. The instrument's final version includes their suggestions. Overall validity was 4.70, which is excellent.

Reliability

Reliability is the degree to which a research tool consistently measures a notion. To assess the reliability of the questionnaire, it was given to 30 TLE teachers who were not included in the study population. Cronbach's alpha, a measure of internal consistency (Goforth, 2015), was used to look at the answers. The reliability coefficient that came out was 0.956, which means that the instrument is quite reliable.

Data Collection Procedure

To collect data, the researcher must first obtain a permit from the School Division Superintendent of the Department of Education of the City Schools Division of Victorias. A copy of this permit will be sent to the school head, who will then give authorization for the questionnaires to be sent to the people who need to fill them out. Once approved, the questionnaires will be distributed, elucidating the study's goal and securing consent from each participant. Using the Statistical Package for Social Sciences (SPSS), the collected answers will be reviewed for accuracy and put into a database for tabulation and analysis. The results will then be used to make conclusions and suggestions.

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GEO Academic Journal Vol. No. 2 – 2025 series

Data Analysis and Statistical Treatment

This study utilized descriptive and comparative analytical frameworks aligned with the research aims. Objectives 1 to 3 utilized a descriptive scheme to examine teachers' profiles in terms of age, sex, number of TLE trainings attended, and their level of preparedness in teaching Technology and Livelihood Education across content, strategy, and technology. Objective 4 employed a descriptive-comparative scheme to determine significant differences in teachers' preparedness across the same variables. The Mann-Whitney U-test was employed to ascertain the substantial disparities in teachers' preparation for instructing Technology and Livelihood Education when categorized by the specified criteria. These schemes together give a full picture of the study's state, status, patterns, and trends.

Ethical Considerations

The researcher made sure that all of the respondents' information and answers were kept private and only used for this study. People could choose whether or not to take part, and they didn't have to give their names, which kept their identities secret. Before collecting data, respondents were given a letter of consent to show that they were willing to take part. The research only collected personal information like age, sex, greatest level of education, and number of TLE trainings attended. Respondents were given a full explanation of the study's purpose and goals so that they could make an informed decision about whether or not to take part. They were also told that they could leave at any point if they felt uncomfortable. These steps made guaranteed that all participants' privacy, confidentiality, and fair treatment were protected.

Results and Discussions

In this section, the data gathered were further treated, presented, analyzed, and interpreted to focus on the specific objectives of the study.

Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Content, Strategy, and Technology

Table 1

Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Content

Content **Items**	**Mean**	**Interpretation**
As a teacher, I am prepared in…		
1. Preparing appropriate materials for teaching Technology and Livelihood education	4.67	Very High Level
2. Formulating/adopting the objectives of the lesson plan	4.62	Very High Level
3. Relating the new lesson to previous knowledge	4.63	Very High Level

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4. Providing student-centered lessons and activities that are based on concepts of active learning and that are connected to real-world applications	4.42	High Level
5. Introducing with a wide knowledge in the four areas of Technology and Livelihood Education	4.42	High Level
6. Attending seminars and training related to different areas of Technology and Livelihood education	4.19	High Level
7. Understanding what needs to be done for the implementation of TLE classes	4.25	High Level
8. Letting my students perform tasks based on the lesson discussion	4.58	Very High Level
9. Giving knowledge to the area of specialization I handle in TLE	4.67	Very High Level
10. Encouraging learning through group interaction	4.54	Very High Level
Overall Mean	**4.50**	**Very High Level**

Table 1 shows how adaptable TLE teachers are when it comes to content. The overall mean is 4.50, which is very high. Teachers showed that they were well-prepared to make lesson plans, create teaching resources, and teach the course in an effective way. The greatest average ratings (4.67) were for making the right teaching materials and giving specialized information. This shows that the teachers were knowledgeable about their subjects and ready to teach. The lowest average score (4.19) was for attending seminars and training, which suggests that people aren't very interested in professional growth. This shows how important it is for institutions to foster participation in training programs, which will make teachers even more adaptable. These findings align with Ataman (2020), who emphasized that using computer-aided learning materials can improve teaching effectiveness by engaging students.

Table 2

Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Strategy

Strategy		
Items	**Mean**	**Interpretation**
As a teacher, I am prepared in…		
1. Providing appropriate motivation	4.65	Very High Level
2. Utilizing the art of questioning to develop a higher level of thinking	4.50	Very High Level

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3. Using appropriate strategies designed to accommodate the varied talents and skills of students	4.48	High Level
4. Integrating different instructional materials in every lesson	4.31	High Level
5. Adapting a new intervention to enhance the skills of students	4.37	High Level
6. Using a variety of teaching methods to keep students interested	4.44	High Level
7. Modifying to meet the novel and changing demands of the classroom	4.25	High Level
8. Adjusting teaching to the individual needs of each student	4.35	High Level
9. Ensuring a new strategy for successful implementation	4.23	High Level
10. Combining different work for the students who have difficulties in learning, and or those who can advance faster	4.29	High Level
Overall Mean	**4.39**	**High Level**

Table 2 reveals that TLE teachers are quite flexible when it comes to teaching tactics, with an overall mean of 4.39. Teachers are usually good at using different teaching methods, especially when it comes to getting pupils excited about learning and encouraging higher-order thinking. The highest mean score (4.65) was for giving pupils the right motivation, which shows that they were able to get students interested and create a good learning environment. The mean score for implementing new techniques was the lowest (4.23), which suggests that it is hard to absorb and use new ideas. Targeted training and collaborative planning can enhance instructors' strategic adaptability and elevate instructional outcomes. These results are consistent with Johnson (2018), who asserts that teachers' motivational abilities and the delivery of positive feedback facilitate student learning and the advancement of competence.

Table 3

Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Technology

Technology		
Items	**Mean**	**Interpretation**
As a teacher, I am prepared in…		
1. Providing effective professional development on new technologies	4.37	High Level

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2. Incorporating new educational tools	4.35	High Level
3. Adapting teaching when new technology is introduced to the school/class	4.44	High Level
4. Providing students with additional support and resources, such as online tutorials or interactive activities	4.23	High Level
5. Offering students personalized instruction, allowing them to learn at their own pace and in their own way	4.31	High Level
6. Finding methods of incorporating and utilizing new forms of technology in class	4.21	High Level
7. Incorporating new trends in technology while learning	4.40	High Level
8. Giving accurate instructions to students using different online platforms	4.33	High Level
9. Offering students activities that involve the use of technology	4.37	High Level
10 Allowing students to use new technology in learning	4.31	High Level
Overall Mean	**4.33**	**High Level**

A high flexibility score of 4.33 indicates that most Technology and Livelihood Education (TLE) teachers are adept at employing technology in their lessons. Digital tools and resources can improve teaching and engage students. Even if they're good at what they do, they can improve their technology use. Schools should continue to provide new resources, ICT training, and hands-on assistance.

The lowest average score was 4.21 for "Finding ways to use and incorporate new forms of technology in class." This suggests that a lack of exposure, time, or training can make new tools difficult to utilize. Schools can address this by creating guidelines, providing hands-on workshops, and having students share their knowledge. The highest mean score (4.44) was for "Adapting teaching when new technology is introduced," indicating that teachers are eager to adapt. Institutions could use this potential to stimulate innovation by involving instructors in pilot projects and tech integration leadership. These findings support Sacramento et al. (2021), who emphasize the need for great adaptability in distant learning within the learning continuity strategy.

Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Content, Strategy, and Technology When Grouped According to Age, Sex, and Number of Training Attended in TLE

Table 4

Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Content When Grouped According to Age

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GEO Academic Journal Vol. No. 2 – 2025 series

Content	Age			
	Younger		Older	
Items	Mean	Interpretation	Mean	Interpretation
As a teacher, I am prepared in…				
1. Preparing appropriate materials for teaching Technology and Livelihood education	4.67	Very High Level	4.68	Very High Level
2. Formulating/adopting the objectives of the lesson plan	4.50	Very High Level	4.77	Very High Level
3. Relating the new lesson to previous knowledge	4.63	Very High Level	4.64	Very High Level
4. Providing student-centered lessons and activities that are based on concepts of active learning and that are connected to real-world applications	4.37	High Level	4.50	Very High Level
5. Introducing with a wide knowledge in the four areas of Technology and Livelihood Education	4.47	High Level	4.36	High Level
6. Attending seminars and training related to different areas of Technology and Livelihood education	4.17	High Level	4.23	High Level
7. Understanding what needs to be done for the implementation of TLE classes	4.27	High Level	4.23	High Level
8. Letting my students perform tasks based on the lesson discussion	4.53	Very High Level	4.64	Very High Level
9. Giving knowledge to the area of specialization I handle in TLE	4.77	Very High Level	4.55	Very High Level
10. Encouraging learning through group interaction	4.47	High Level	4.64	Very High Level
Overall Mean	**4.48**	**High Level**	**4.52**	**Very High Level**

Subject adaptation scores averaged 4.52 (very high) for instructors 42 and older and 4.48 (high) for teachers under 42. More teaching experience may aid adaption. In "Attending seminars and training," younger teachers scored the lowest (4.17), indicating that they were not engaged in professional development due to time or other responsibilities. To help people adapt to varied learning styles, we need adaptive training choices like online courses or school lectures. However, younger teachers rated the highest (4.77) in presenting specific material, demonstrating their skill. Fostering this strength and encouraging learning can boost

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adaptability. Sacramento et al. (2021) found that age influences various teacher adaptation factors.

Table 5

Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Strategy When Grouped According to Age

Strategy	**Age**			
	Younger		**Older**	
Items	**Mean**	**Interpretation**	**Mean**	**Interpretation**
As a teacher, I am prepared in…				
1. Providing appropriate motivation	4.60	Very High Level	4.73	Very High Level
2. Utilizing the art of questioning to develop a higher level of thinking	4.43	High Level	4.59	Very High Level
3. Using appropriate strategies designed to accommodate the varied talents and skills of students	4.43	High Level	4.55	Very High Level
4. Integrating different instructional materials in every lesson	4.30	High Level	4.32	High Level
5. Adapting a new intervention to enhance the skills of students	4.37	High Level	4.36	High Level
6. Using a variety of teaching methods to keep students interested	4.40	High Level	4.50	Very High Level
7. Modifying to meet the novel and changing demands of the classroom	4.27	High Level	4.23	High Level
8. Adjusting teaching to the individual needs of each student	4.40	High Level	4.27	High Level
9. Ensuring a new strategy for successful implementation	4.20	High Level	4.27	High Level
10. Combining different work for the students who have difficulties in learning, and or those who can advance faster	4.33	High Level	4.23	High Level
Overall Mean	**4.37**	**High Level**	**4.40**	**High Level**

Strategy adaptability averaged 4.40 for teachers over 42 and 4.37 for those under 42. Both numbers indicate teachers' adaptability. Thus, TLE teachers of all ages are adept at various teaching strategies. Older teachers score higher, demonstrating how experience helps. Working with more experienced teachers to plan classes and advise them can help younger

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teachers enhance their strategic skills. Older instructors had the lowest mean score of 4.23 in "Modifying to meet the novel and changing demands of the classroom," demonstrating their difficulty adapting to changing classroom dynamics. Continuous support from professional learning groups and reflective practice can help. The highest mean score, 4.73, was in "Providing appropriate motivation," showing that older teachers can engage students. Using this strength through peer coaching can improve educational practices. Sharma and Srivastava (2019) found that age, experience, and education affect teachers' instruction.

Table 6

Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Technology When Grouped According to Age

Technology	**Age**			
	Younger		**Older**	
Items	**Mean**	**Interpretation**	**Mean**	**Interpretation**
As a teacher, I am prepared in…				
1. Providing effective professional development on new technologies	4.20	High Level	4.59	Very High Level
2. Incorporating new educational tools	4.23	High Level	4.50	Very High Level
3. Adapting teaching when new technology is introduced to the school/class	4.47	High Level	4.41	High Level
4. Providing students with additional support and resources, such as online tutorials or interactive activities	4.27	High Level	4.18	High Level
5. Offering students personalized instruction, allowing them to learn at their own pace and in their own way	4.37	High Level	4.23	High Level
6. Finding methods of incorporating and utilizing new forms of technology in class	4.27	High Level	4.14	High Level
7. Incorporating new trends in technology while learning	4.37	High Level	4.45	High Level
8. Giving accurate instructions to students using different online platforms	4.40	High Level	4.23	High Level
9. Offering students activities that involve the use of technology	4.40	High Level	4.32	High Level

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10 Allowing students to use new technology in learning	4.33	High Level	4.27	High Level
Overall Mean	**4.33**	**High Level**	**4.33**	**High Level**

The average technology adaptability score for younger and older instructors was 4.33. Technological instruction is usually possible for TLE teachers of all ages. The equal results indicate that all age groups have equal institutional support and technology access. Schools should encourage concentrated training and new technology to make students adaptive. Older educators scored 4.14 in "Finding ways to use and incorporate new forms of technology in class." Teachers may struggle with new tools, but hands-on professional development and peer mentoring can assist. The highest mean score was 4.59 in "Providing effective professional development on new technologies." This suggests elderly educators enjoy and excel at structured teaching. Experienced instructors could offer training sessions to promote collaborative learning and new technology in schools. These findings contradict Vaskov et al. (2021), who found senior university professors distrustful of new technologies.

Table 7

Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Content When Grouped According to Sex

Content	**Sex**			
	Male		**Female**	
Items	**Mean**	**Interpretation**	**Mean**	**Interpretation**
As a teacher, I am prepared in…				
1. Preparing appropriate materials for teaching Technology and Livelihood education	4.60	Very High Level	4.70	Very High Level
2. Formulating/adopting the objectives of the lesson plan	4.73	Very High Level	4.57	Very High Level
3. Relating the new lesson to previous knowledge	4.53	Very High Level	4.68	Very High Level
4. Providing student-centered lessons and activities that are based on concepts of active learning and that are connected to real-world applications	4.53	Very High Level	4.38	High Level
5. Introducing with a wide knowledge in the four areas of Technology and Livelihood Education	4.20	High Level	4.51	Very High Level
6. Attending seminars and training related to different areas of Technology and Livelihood education	4.13	High Level	4.22	High Level

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7. Understanding what needs to be done for the implementation of TLE classes	4.20	High Level	4.27	High Level
8. Letting my students perform tasks based on the lesson discussion	4.27	High Level	4.70	Very High Level
9. Giving knowledge to the area of specialization I handle in TLE	4.53	Very High Level	4.73	Very High Level
10. Encouraging learning through group interaction	4.47	High Level	4.57	Very High Level
Overall Mean	**4.42**	**High Level**	**4.53**	**Very High Level**

Content adaptation averaged 4.53 for female teachers (extremely high) and 4.42 for male teachers. This suggests that female TLE teachers adapt content better. This suggests that female educators are more aware of instructional needs and involved in effective teaching methods.

Participate in curriculum and mentoring program development to leverage their strengths. Seminar and training-attending male instructors scored the lowest at 4.13. This suggests that they are less likely to participate in professional development and that open-access training is needed. This could be done with targeted outreach or incentives. Female teachers score highest in "Giving knowledge to the area of specialization I handle," with 4.73, indicating they are excellent at teaching specific subject. This makes female instructors effective resource people or trainers who assist others learn and improve. These findings support Sharma and Srivastava (2019), who found that gender influences instructors' technology use intentions.

Table 8

Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Strategy When Grouped According to Sex

Strategy	**Sex**			
	Male		**Female**	
Items	**Mean**	**Interpretation**	**Mean**	**Interpretation**
As a teacher, I am prepared in…				
1. Providing appropriate motivation	4.53	Very High Level	4.70	Very High Level
2. Utilizing the art of questioning to develop a higher level of thinking	4.40	High Level	4.54	Very High Level
3. Using appropriate strategies designed to accommodate the varied talents and skills of students	4.40	High Level	4.51	Very High Level

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4. Integrating different instructional materials in every lesson	4.07	High Level	4.41	High Level
5. Adapting a new intervention to enhance the skills of students	4.27	High Level	4.41	High Level
6. Using a variety of teaching methods to keep students interested	4.27	High Level	4.51	Very High Level
7. Modifying to meet the novel and changing demands of the classroom	4.13	High Level	4.30	High Level
8. Adjusting teaching to the individual needs of each student	4.27	High Level	4.38	High Level
9. Ensuring a new strategy for successful implementation	4.13	High Level	4.27	High Level
10. Combining different work for the students who have difficulties in learning, and or those who can advance faster	4.13	High Level	4.35	High Level
Overall Mean	**4.26**	**High Level**	**4.44**	**High Level**

Strategy adaptability averaged 4.44 for female teachers and 4.26 for male teachers. Both scores were high, indicating that TLE teachers use various teaching strategies well. Female teachers scored somewhat higher, indicating that they are stronger at teaching strategies and may lead strategy-focused professional development and mentor peers. Male teachers received the lowest mean score of 4.13 in "Modifying to meet novel classroom demands," "Ensuring new strategies for successful implementation," and "Combining work for students with varying abilities".

It shows they need additional support. Targeted training in adaptive approaches and varied instruction could help male teachers satisfy all students' needs. Female teachers scored the highest in "Providing appropriate motivation," 4.70, demonstrating their ability to make learning entertaining and engaging. This strength can be leveraged in school-wide programs to engage kids, improve classroom climate, and lead instruction. These findings contradict Basilotta-Gómez-Pablos et al. (2022), who found teachers didn't think they were adept at technology.

Table 9

Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Technology When Grouped According to Sex

Technology	**Sex**			
	Male		**Female**	
Items	**Mean**	**Interpretation**	**Mean**	**Interpretation**
As a teacher, I am prepared in…				

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GEO Academic Journal Vol. No. 2 – 2025 series

1. Providing effective professional development on new technologies	4.47	High Level	4.32	High Level
2. Incorporating new educational tools	4.33	High Level	4.35	High Level
3. Adapting teaching when new technology is introduced to the school/class	4.27	High Level	4.51	Very High Level
4. Providing students with additional support and resources, such as online tutorials or interactive activities	4.20	High Level	4.24	High Level
5. Offering students personalized instruction, allowing them to learn at their own pace and in their own way	4.40	High Level	4.27	High Level
6. Finding methods of incorporating and utilizing new forms of technology in class	4.00	High Level	4.30	High Level
7. Incorporating new trends in technology while learning	4.33	High Level	4.43	High Level
8. Giving accurate instructions to students using different online platforms	4.27	High Level	4.35	High Level
9. Offering students activities that involve the use of technology	4.27	High Level	4.41	High Level
10 Allowing students to use new technology in learning	4.27	High Level	4.32	High Level
Overall Mean	**4.28**	**High Level**	**4.35**	**High Level**

Technology adaptation averaged 4.35 for female teachers and 4.28 for male teachers. Both scores were high, indicating that TLE teachers can employ technology in their lessons. Female instructors who scored higher on the test are more confident and eager to employ digital tools. This suggests they might lead technology integration projects, support instructors, and provide tech-based training. The lowest male teacher score was 4.00 in "Finding ways to use and incorporate new forms of technology." New technology might be difficult to adopt, but hands-on seminars and peer-led demos can assist. Female instructors scored the best in "Adapting teaching when new technology is introduced," 4.51, demonstrating their ability to adapt to new technologies. To leverage this authority, schools may incorporate female instructors in experimental initiatives, curriculum design, and digital transition. These findings contradict Sharma and Srivastava (2019), who found that gender influences instructors' technology use intentions.

Table 10

Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Content When Grouped According to the Number of Training Attended in TLE

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GEO Academic Journal Vol. No. 2 – 2025 series

Content	Number of Trainings Attended			
	Few		Many	
Items	Mean	Interpretation	Mean	Interpretation
As a teacher, I am prepared in…				
1. Preparing appropriate materials for teaching Technology and Livelihood education	4.63	Very High Level	4.73	Very High Level
2. Formulating/adopting the objectives of the lesson plan	4.53	Very High Level	4.73	Very High Level
3. Relating the new lesson to previous knowledge	4.60	Very High Level	4.68	Very High Level
4. Providing student-centered lessons and activities that are based on concepts of active learning and that are connected to real-world applications	4.43	High Level	4.41	High Level
5. Introducing with a wide knowledge in the four areas of Technology and Livelihood Education	4.40	High Level	4.45	High Level
6. Attending seminars and training related to different areas of Technology and Livelihood education	4.10	High Level	4.32	High Level
7. Understanding what needs to be done for the implementation of TLE classes	4.23	High Level	4.27	High Level
8. Letting my students perform tasks based on the lesson discussion	4.53	Very High Level	4.64	Very High Level
9. Giving knowledge to the area of specialization I handle in TLE	4.70	Very High Level	4.64	Very High Level
10. Encouraging learning through group interaction	4.47	High Level	4.64	Very High Level
Overall Mean	**4.46**	**High Level**	**4.55**	**Very High Level**

Instructors who attended four or more trainings scored 4.55 (very high) for subject adaptability, whereas those who attended less scored 4.46 (high). Regular professional development helps teachers adapt to TLE content. Training helps teachers ensure their lessons meet current standards and practices. This emphasizes professional development. Lower-trained instructors scored 4.10 in "Attending seminars and training." This shows that they weren't interested due to time, employment, or transportation issues. More people can participate in flexible, modular, school-based training. Highly trained teachers scored 4.73 for

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ISSN 2960-3986
GEO Academic Journal Vol. No. 2 – 2025 series

"Preparing appropriate teaching materials" and "Formulating/adopting lesson objectives". This suggests that frequent training helps teachers create effective instructional materials and align lessons with curriculum goals. These results support Mardiana (2020), who stressed the importance of ongoing skills training for teachers.

Table 11

Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Strategy When Grouped According to the Number of Trainings Attended in TLE

Strategy	**Number of Trainings Attended**			
	Few		**Many**	
Items	**Mean**	**Interpretation**	**Mean**	**Interpretation**
As a teacher, I am prepared in…				
1. Providing appropriate motivation	4.67	Very High Level	4.64	Very High Level
2. Utilizing the art of questioning to develop a higher level of thinking	4.43	High Level	4.59	Very High Level
3. Using appropriate strategies designed to accommodate the varied talents and skills of students	4.47	High Level	4.50	Very High Level
4. Integrating different instructional materials in every lesson	4.23	High Level	4.41	High Level
5. Adapting a new intervention to enhance the skills of students	4.43	High Level	4.27	High Level
6. Using a variety of teaching methods to keep students interested	4.37	High Level	4.55	Very High Level
7. Modifying to meet the novel and changing demands of the classroom	4.20	High Level	4.32	High Level
8. Adjusting teaching to the individual needs of each student	4.33	High Level	4.36	High Level
9. Ensuring a new strategy for successful implementation	4.20	High Level	4.27	High Level
10. Combining different work for the students who have difficulties in learning, and or those who can advance faster	4.23	High Level	4.36	High Level
Overall Mean	**4.36**	**High Level**	**4.43**	**High Level**

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ISSN 2960-3986
GEO Academic Journal Vol. No. 2 – 2025 series

Strategy adaptability was 4.43 (high) for teachers who attended four or more trainings and 4.36 for those who attended less. This suggests that both groups are competent but more adaptive with instruction. Regular professional development helps teachers use a range of teaching strategies to satisfy all TLE learners' needs. Teachers with fewer trainings scored 4.20 in "Modifying to meet novel classroom demands" and "Ensuring new strategies for successful implementation." This shows they struggled to adopt new techniques. Adaptive teaching and strategic planning modules help teachers be more responsive and innovative. Teacher training got the greatest average score of 4.59 in "Using the art of questioning to develop higher-order thinking." They were good at getting pupils to think critically and participate. These findings support Pionke (2018, as stated in Mardiana, 2020)'s claim that learning technologies require flexibility and technical skills to succeed.

Table 12

Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Technology When Grouped According to the Number of Trainings Attended in TLE

Technology	**Number of Trainings Attended**			
	Few		**Many**	
Items	**Mean**	**Interpretation**	**Mean**	**Interpretation**
As a teacher, I am prepared in…				
1. Providing effective professional development on new technologies	4.23	High Level	4.55	Very High Level
2. Incorporating new educational tools	4.23	High Level	4.50	Very High Level
3. Adapting teaching when new technology is introduced to the school/class	4.47	High Level	4.41	High Level
4. Providing students with additional support and resources, such as online tutorials or interactive activities	4.13	High Level	4.36	High Level
5. Offering students personalized instruction, allowing them to learn at their own pace and in their own way	4.43	High Level	4.14	High Level
6. Finding methods of incorporating and utilizing new forms of technology in class	4.20	High Level	4.23	High Level
7. Incorporating new trends in technology while learning	4.30	High Level	4.55	Very High Level

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ISSN 2960-3986
GEO Academic Journal Vol. No. 2 – 2025 series

8. Giving accurate instructions to students using different online platforms	4.30	High Level	4.36	High Level
9. Offering students activities that involve the use of technology	4.30	High Level	4.45	High Level
10 Allowing students to use new technology in learning	4.27	High Level	4.36	High Level
Overall Mean	**4.29**	**High Level**	**4.39**	**High Level**

Technological adaptability averaged 4.39 (high) for instructors who attended four or more trainings and 4.29 for those who attended less. This shows that both groups can use technology, but repeated training makes them more flexible. For excellent TLE instruction, teachers need regular professional development to feel confident and adept with educational technologies. Low-trained teachers scored 4.13 in "Providing students with additional support and resources, such as online tutorials or interactive activities." Teachers may have struggled using digital technologies. Hands-on internet resource discovery and use training can address this gap. Highly trained instructors scored 4.55 in "Providing effective professional development on new technologies" and "Incorporating new technological trends." They were good at remaining current and incorporating new concepts in their job. Schools should fund these programs and encourage children to study together. These findings contradict Mardiana (2020), who claimed that some teachers attend training merely to receive a diploma and not learn anything.

Comparative Analysis in Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Content, Strategy, and Technology When Grouped According to Age, Sex, and Number of Training Attended in TLE

Table 13

Differences in the Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Content When Grouped and Compared According to Variables

Variables	**Categories**	**N**	**Mean Rank**	**Mann Whitney U-test**	**Sig. Level**	***p*-value**	**Interpretation**
Age	Younger	30	24.82	279.5		0.343	Not Significant
	Older	22	28.80				
Sex	Male	15	23.23	228.5	0.05	0.316	Not Significant
	Female	37	27.82				
	Few	30	24.45	268.5			

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ISSN 2960-3986
GEO Academic Journal Vol. No. 2 – 2025 series

Number of Trainings Attended	Many	22	29.30		0.249	Not Significant

Table 13 indicates how age, sex, and training number affect TLE teachers' information adaptability. The Mann-Whitney U test found no significant differences, with p-values of 0.343 (age), 0.316 (sex), and 0.249 (trainings) above 0.05. Content adaptation applies to all ages, genders, and jobs. Training and experience may increase certain skills, but they do not change content adaptation. Instead, personal teaching methods, institutional culture, and curriculum support may matter more. Thus, all instructors should have access to professional development programs to better their teaching. According to Sheffield (2011, as cited in Tobias et al., 2021), educators at all levels use technology to facilitate teacher-led knowledge transfer, highlighting content adaptability as a common strength among teachers of all ages, genders, and training backgrounds.

Table 14

Differences in the Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Strategy When Grouped and Compared According to Variables

Variables	**Categories**	**N**	**Mean Rank**	**Mann Whitney U-test**	**Sig. Level**	***p*-value**	**Interpretation**
Age	Younger	30	26.13	319.0		0.837	Not Significant
	Older	22	27.00				
Sex	Male	15	22.93	224.0	0.05	0.275	Not Significant
	Female	37	27.95				
Number of Trainings Attended	Few	30	25.82	309.5		0.701	Not Significant
	Many	22	27.43				

Age, sex, and training number affect TLE teachers' strategy-changing ability (Table 14). The Mann-Whitney U test showed no significant differences, with age, gender, and training p-values above 0.05. Strategic flexibility is universal across races, ages, and occupations. These data imply that institutional procedures, peer collaboration, and individual teaching philosophies impact instructional practices more than age, gender, or training frequency. All educators should get professional development in classroom-based techniques and collaborative learning environments that promote instructional technique sharing, refining, and creation. Spiteri and Chang Rundgren (2018) say working together and giving feedback helps teachers improve their strategic abilities and provide supportive, innovative learning environments for all students.

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ISSN 2960-3986
GEO Academic Journal Vol. No. 2 – 2025 series

Table 15

Differences in the Level of Adaptability of Teachers in Teaching Technology and Livelihood Education in Terms of Technology When Grouped and Compared According to Variables

Variables	Categories	N	Mean Rank	Mann Whitney U-test	Sig. Level	*p*-value	Interpretation
Age	Younger	30	25.78	308.5		0.689	Not Significant
	Older	22	27.48				
Sex	Male	15	25.03	255.5	0.05	0.655	Not Significant
	Female	37	27.09				
Number of Trainings Attended	Few	30	25.23	292.0		0.479	Not Significant
	Many	22	28.23				

Table 15 shows how age, sex, and training number affect TLE teachers' tech adoption. The Mann-Whitney U test showed no significant differences, with age, gender, and training p-values above 0.05. Thus, technology accommodates all ages, genders, and occupations. These data show that resource availability, educational infrastructure, and individual motivation impact technology assimilation and use more than age, gender, or training frequency. To provide fair access to digital resources and skill development, professional development programs should assist all instructors equally. Twining et al. (2013, as quoted in Tobias et al., 2021) revealed that perceived educational system advantages influence teachers' technology use, showing that technological adaptability transcends demographics.

Conclusions

The profile of the 52 responses shows that majority of the teachers are married, under 42 years old, and have not been to many TLE trainings. Teachers were quite flexible when it came to teaching Technology and Livelihood Education, both in terms of content and in terms of approach and technology. There were no major differences in adaptation across different types of teachers. These findings indicate that although younger TLE teachers experience restricted professional development, they exhibit robust readiness in content delivery and proficient integration of pedagogical practices and technology. Overall, teachers' ability to adjust when teaching TLE is the same, no matter what their age, gender, or job history is.

Recommendations

1. Engage TLE teachers into continuing professional development in order to keep updated and to further improve teaching delivery most especially in enhancing teachers' level of adaptability;

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ISSN 2960-3986
GEO Academic Journal Vol. No. 2 – 2025 series

2. Find creative ways to provide additional trainings for TLE teachers most especially when comes to adaptability of teachers towards content, strategies and technology utilization to enhance students' academic performance;

3. TLE teachers should undergo seminars, training and workshops on improving teaching skills particularly on how to adapt pedagogical changes that leads to professional growth and development.

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