

The Tiered Assignments Strategy: A Universal Design for Learning (UDL) Approach for TLE Performance in Grade 9

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Abstract

This research focuses on the impact of the Tiered Assignment Strategy, as a Universal Design for Learning (UDL) Approach, on the academic performance of Grade 9 students in Technology and Livelihood Education (TLE) specializing in Cookery at Western Abra National High School during School Year 2025–2026. Based on differentiated instruction and UDL principles, it focused on the needs of various learners and their levels of ability and readiness through flexible, structured tasks. The study aimed to determine the effectiveness of the Tiered Assignments Strategy as a UDL approach in improving TLE performance. A quasi-experimental one-group pretest–posttest design was used with 27 participants. Data were gathered using a researcher-developed achievement test with a performance-based rubric for knowledge and practical skill. The test had 30 items covering mise en place, dessert preparation, and dessert presentation. Experts validated the instruments, and a pilot test was conducted with Grade 10 students. Reliability testing confirmed strong internal consistency, with a coefficient of 0.848 and an unbiased estimate of 0.860. Data were analyzed using mean, frequency, percentage, and paired samples t-test. The overall pretest mean was 72.44, Did Not Meet Expectation, while the overall posttest mean was 89.11, Very Satisfactory. Students improved in mise en place from 73.74 to 90.81, preparing desserts from 70.33 to 84.26, and presenting/plating desserts from 74.78 to 92.89. The overall t-value was 12.61 with $p < 0.001$ and Hedges' g of 6.97. The study concludes that tiered assignments within the UDL framework strengthen positive engagement, inclusive learning, meaningful learning, confidence, motivation, and TLE performance.

Keywords: *Tiered Assignment Strategy, Universal Design for Learning, TLE Performance, Instrument Validity and Reliability, Differentiated Instruction*

1. Introduction

Background and rationale: Technology and Livelihood Education (TLE) is one of the core learning areas in the Philippine secondary curriculum, aiming to develop learners' knowledge, skills, and values for work and entrepreneurship. In Grade 9, TLE becomes more specialized through fields such as Cookery. The study identified challenges in learner diversity, learning pace, motivation, participation, limited resources, and the need for flexible instruction in TLE Cookery. The Tiered Assignments Strategy, based on Universal Design for Learning, was used to provide differentiated assignments aligned with students' readiness, interests, and learning profiles.

Review of related literature: The study was linked to Tomlinson's Differentiated Instruction Theory and CAST's Universal Design for Learning Framework. It also drew support from Bloom's Taxonomy, Constructivist Theory, and Zone of Proximal Development. Related studies cited in the manuscript discussed tiered assignments, differentiated instruction, UDL, readiness-based differentiation, differentiated outputs, and performance-based assessment as strategies for improving learner engagement and achievement.

Statement of the problem: The study sought to determine the level of pretest and posttest performance of Grade 9 students in TLE before and after exposure to tiered assignment techniques in performing mise en place, preparing a variety of desserts, and presenting/plating a variety of desserts; the level of performance during implementation using tiered tasks based on readiness level, differentiated output activities, and performance-based assessment; and the significant difference between pretest and posttest performance before and after implementation.

Objectives and/or research hypotheses: The hypothesis stated that there is no significant difference in the pre- and posttest performance of Grade 9 students in TLE before and after the implementation of the Universal Design for Learning using tiered assignment techniques.

2. Materials and Methods

Research Design: This study used a quasi-experimental research design, particularly a one-group pretest-posttest design. The pretest established a baseline measure of students' performance, while the posttest evaluated improvement after students were exposed to tiered assignments aligned with UDL principles.

Participants: The study respondents were Grade 9 students taking Technology and Livelihood Education, particularly Cookery, at Western Abra National High School during School Year 2025–2026. The abstract stated that 27 participants were included. Grade 10 students were used in the pilot testing of the research instrument.

Instruments: The researcher designed a TLE Achievement Test comprising a pretest and posttest to measure students' performance in TLE Cookery. The achievement test consisted of twenty multiple-choice questions and ten performance-based questions. Performance rubrics were also designed to assess students' work on tiered assignments and cooking activities. The test had 30 items covering mise en place, dessert preparation, and dessert presentation.

Reliability testing showed strong internal consistency with a coefficient of 0.848 and an unbiased estimate of 0.860.

Procedure: The respondents were identified, and the test instruments and performance-based rubric were developed. The tools underwent expert panel evaluation and pilot testing with Grade 10 students. Permission was obtained from the school principal and coordination was made with the TLE teacher. A pretest was administered, followed by six weeks of implementation of the Tiered Assignment Strategy. After the intervention, the same achievement test and performance-based rubric were used for the posttest. Data were collected, organized, and processed.

Data Analysis: Mean was used to describe the average performance of students in the pretest and posttest. Frequency and percentage were used to show how many students fell into each performance level based on rubric ratings. Paired Samples t-Test was used to compare pretest and posttest scores to determine whether the Tiered Assignment Strategy significantly improved students' performance.

3. Results

Table 1. Level of Pretest and Posttest Performance of Grade 9 Students in TLE Before and After Exposure to Tiered Assignment Techniques

Learning Competencies	Pretest	DR	Posttest	DR
Mise en place	73.74	DNME	90.81	O
Prepare a variety of desserts	70.33	DNME	84.26	S
Present/Plate a variety of desserts	74.78	DNME	92.89	O
Overall	72.44	DNME	89.11	VS

Table 2a. Level of Performance During UDL Implementation Using Tiered Tasks Based on Readiness Level

Learning Competencies / Tier Level	Mean	DR
Mise en place – Basic	85.43	VS
Prepare a variety of desserts – Intermediate	84.60	S
Present/Plate a variety of desserts – Advanced	86.20	VS
Overall	80.41	S

Table 2b. Level of Performance During UDL Implementation Using Differentiated Output Activities

Task in Preparing Dessert	Mean	DR
Recipe creation	82.75	S
Visual representation	98.33	O
Creative plating activity	89.60	VS
Overall	87.48	VS

Table 2c. Level of Performance During UDL Implementation Using Performance-Based Assessment in Presenting/Plating Dessert

Frequency	Frequency Percentage	Scale	DR
4	14.81	90–100	Outstanding
1	3.70	85–89	Very Satisfactory
10	37.04	80–84	Satisfactory
12	44.44	75–79	Fairly Satisfactory
0	0.00	Below 75	Did Not Meet Expectation
Overall: 30	100%	82.41	Satisfactory

Table 3. Pretest and Posttest Performance Before and After the Implementation of UDL Using Tiered Assignment Techniques

Learning Competencies	Pretest	Posttest	Effect Size (Hedges' g)	T-Value	T-Prob Value
Perform mise en place	73.74	90.81	10.90	8.26	<0.001
Prepare a variety of desserts	70.33	84.26	7.37	9.97	<0.001
Present/Plate a variety of desserts	74.78	92.89	10.8	8.84	<0.001
Overall	72.44	89.11	6.97	12.61	<0.001

4. Discussion

The findings showed that Grade 9 students in TLE improved after exposure to tiered assignments aligned with Universal Design for Learning principles. Students moved from Did Not Meet Expectation in the pretest to Very Satisfactory and Outstanding levels in the posttest. The manuscript interpreted this improvement as evidence that tiered assignments meet learners where they are in terms of readiness, interests, and learning profiles. During implementation,

students achieved satisfactory to very satisfactory results when tasks were aligned to readiness levels, and very satisfactory results when differentiated output activities were used. The visual presentation task obtained the highest mean, showing that students performed strongly in creative tasks, while recipe creation showed the need for support in planning and technical writing. Performance-based assessment in dessert presentation showed that all learners met at least the minimum competency level. The significant pretest-posttest results and very large effect sizes indicated that UDL-based tiered assignments improved skill mastery, engagement, and learning outcomes.

5. Conclusion

The use of tiered assignment strategies based on the Universal Design for Learning framework showed a positive impact on students' academic performance in TLE. From initially below-expected performance levels, students progressed to very satisfactory and outstanding levels after the intervention. Tiered assignments demonstrated flexible approaches to different readiness levels and learning preferences. The data demonstrated a statistically significant difference in students' performance before and after the application of UDL-based tiered assignments. The significant increase in scores, together with very large effect sizes, validated the effectiveness of the intervention in developing students' competencies in TLE.

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