

## **IMPLEMENTATION OF DIFFERENTIATED INSTRUCTIONAL APPROACH TO TEACHING IN THE TERTIARY LEVEL: THE PARTIDO STATE UNIVERSITY EXPERIENCE**

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### **Abstract**

Today's classes in the tertiary level are jam-packed with diverse learners who differ primarily in their cognitive abilities, background knowledge and learning preferences. This study aims to investigate the perceptions of teachers on the principles of differentiated instruction (DI), extent of use and effectiveness of selected DI strategies and techniques, and challenges experienced during the implementation of DI in the tertiary level. The Likert scale assessment for quantitative phase and open-ended questions for qualitative phase were utilized to obtain data for analysis. Findings of the study revealed that teacher-respondents agreed positively on the principles of DI which facilitate the work of teachers and success of the learners. It showed that teacher-respondents frequently used the pre-determined DI strategies and techniques which are familiar and beneficial to everyone in the classroom. Likewise, the frequently used DI strategies and techniques were disclosed effective when these were corroborated through interviews and focus group discussions. Moreover, large class size, lack of professional development trainings and time consuming were identified as the most obvious challenges on the implementation of differentiated instruction. In conclusion, the research findings show positive results for full implementation of differentiated instruction in mixed-ability classrooms. The positive perceptions held by teacher-respondents regarding DI is expected to improve the implementation of such teaching practices in curriculum delivery.

**Keywords:** Differentiated instruction, Diversity, Teaching approaches, Challenges, Curriculum

### **1. Introduction**

Education continues to be a highly significant vehicle towards attaining the country's development goals. Likewise, it serves as the most important avenue in developing every individual learner through programs of education which are systematically formulated in accordance with the mandate of the law and more importantly in consideration with the needs and abilities of the learners as well as the aspirations of the country and the world (CMO No. 2, s. 2011).

General Education is the portion of the curriculum common to all undergraduate students regardless of their major. It exposes them to various domains of knowledge and ways of comprehending social and natural realities, developing in the process. For this reason, general education is distinct from specialized learning. The former introduces students to different ways of knowing; the latter focuses on a particular discipline. General education is oriented toward broad or wide-ranging undertakings, while specialized learning is directed at more theoretical and technical knowledge. As such general education undergirds the entire undergraduate education curriculum and cannot be expected by itself, to deliver all the objectives of higher education (CMO No. 20, s. 2013).

The revised General Education Curriculum started its implementation in Academic Year 2018-2019. Prior its implementation, the CHED conducted GE faculty trainings through CHED-designated delivering higher education institutions (DHEIs) to: 1.) orient toward the philosophy of liberal education which is away from the disciplinal and remedial thrust of current GE courses; 2.) enable the GE teachers to teach the core courses using new material; and 3.) recognize best practices in general education.

It is imperative that higher education institutions like the Partido State University (ParSU) to consider and prepare the requirements for the implementation of the revised General Education Curriculum. This is a holistic reform that aims at improving the quality of education for every college learner. In this program, teachers are challenged to address the diversity of students and to accommodate these differences as they encourage the students to learn at their best.

In response to the diverse learning needs among college students, differentiated instruction is one of the approaches which can be utilized in teaching and learning general education curriculum subjects in the tertiary level. Differentiated instruction (DI) contrasts with the “one-size-fits-all” traditional lecture-discussion method as it requires teachers to proactively plan and design a variety of instructional techniques and materials to best facilitate systematic and effective learning experiences appropriate to the diverse group of learners in a classroom (Tomlinson & Strickland, 2005). In this context, students who learn in different ways, have different interests, and learn in different phases and rates, and are recognized and guided systematically to maximize learning. Since each student is a unique individual, it is the teacher’s responsibility to understand and respond to the needs, interests and capacities of each student to ensure his or her educational growth and development (Anderson, 2007).

A differentiated curriculum entails focusing on each learner and considering him/her as an individual member of different groups, rather than an undifferentiated constituent of a collection. It necessitates a learning environment in which practices and exercises are tailor-made to meet the range of needs of the learners in the particular class. This involves planning techniques that involve differentiation and three-fold intervention programs aimed at the entire class, groups and individual students.

Teachers ought to acknowledge diversity and facilitate learning. Within a differentiated classroom, teachers should be competent in: 1.) Identifying the needs and learning strengths of individual learners. They should build a formative profile of each learner and of the class as a whole. 2.) Planning instructional and learning experience which cater for the learning needs are identified. 3.) Supporting learners in their learning and 4.) Assessing learners’ learning processes and their output.

Teachers are responsible for creating classrooms in which: 1.) Lessons are focused on clear and attainable learning objectives. Tasks are hence considered as means through which a pre-set learning objective can be achieved. 2.) Once the learners’ learning objectives are attained, assessment tasks are identified. 3.) Collaborative and co-operative work prevails. 4.) Different modes through which a task can be carried out are encouraged and 5.) Learners are encouraged to take control of their own learning.

Teachers should be encouraged to use classroom management strategies that support the differentiated needs of learners. Such strategies include: 1.) The use of multiple texts and supplementary materials 2.) Use of ICT and interactive computer programs 3.) Interest centers 4.) Learning contracts 5.) Use of tasks and educational products designed with a multiple intelligences orientation and respectful of the various learning profiles 6.) Group investigation 7.) Small group instruction and 8.) Varied work products as a means of assessment.

In line with its second year of implementation of the revised General Education Curriculum (GEC) in the tertiary level and with confidence that teachers who have attended the GEC trainings are now applying what they have learned during the trainings. This motivates the present researcher to initiate and conduct this university-wide research study. The findings that this study generated would prove to be beneficial not just to the teachers who started implementing the DI but to the CHED officials as these will serve as bases for policy making as regards to the teaching of the revised GEC subjects.

## **2. Objectives of the Study**

The study generally aimed to explore the perceptions and challenges of college teacher-respondents regarding the implementation of differentiated instructional approach to teaching the revised general education curriculum subjects in the tertiary level. This was conducted in the seven campuses of Partido State University during the first semester of academic year 2019-2020.

Specifically, this research study sought to:

- 2.1 determine the selected demographic profile of teacher-respondents;
- 2.2 assess the teacher’s perceptions regarding the principles of differentiated instruction;

- 2.3 assess the teacher's perceptions on the extent of use of selected differentiated instructional strategies and techniques;
- 2.4 evaluate the effectiveness of selected differentiated instructional strategies and techniques; and
- 2.5 identify the challenges experienced by college teacher-respondents during the implementation of differentiated instruction.

### 3. Methodology

#### 3.1. Research Design

A quantitative-qualitative method of inquiry was utilized to attain the objectives of this study. A survey was conducted for the descriptive quantitative method and was used to elicit the demographic profile of college teacher-respondents, their perceptions regarding the principles of differentiated instruction, the extent of use of selected differentiated instructional strategies and techniques, and the effectiveness of selected differentiated instructional strategies and techniques. The qualitative method consisted of teacher-participants' interview confirming the effectiveness of DI strategies and techniques and focus group discussions concerning the challenges experienced by the teacher-participants during the implementation of DI.

#### 3.2. Respondents of the Study

The respondents of this study comprised of eighty-two (82) college teachers from the seven (7) campuses of Partido State University who are teaching the new revised General Education Curriculum subjects offered during the first semester of academic year 2019-2020.

#### 3.3. Instrumentation

A customize survey questionnaire was developed for this research study. The questionnaire is composed of three parts to attain the objectives of the study. Part I is designed for the background demographic profile of the college teacher-respondents. Part II is designed for college teacher-respondents' perceptions regarding the principles of differentiated instruction. This part consists of 20 statements and uses a five-point Likert response scale: 1-Strongly Disagree (SD), 2-Disagree (DA), 3-Uncertain (UC), 4-Agree (A), 5-Strongly Agree (SA). Part III is designed for teacher-respondents' perceptions on the extent of use and effectiveness of selected differentiated instructional strategies and techniques. Both the Extent of Use and the Effectiveness of selected DI strategies and techniques consist of 25 indicators. A five-point Likert response scale and descriptors are the following: For the *extent of Use*: 1-Not Used (NU), 2-Rarely Used (RU), 3-Sometimes Used (SU), 4-Frequently Used (FU), 5-Heavily Used (HU).

For the Effectiveness, the following Likert scale and descriptors were used: 1-Not Effective (NE), 2-Of Little Effectiveness (OLE), 3-Somewhat Effective (SE), 4-Effective (E), 5-Very Effective (VE).

To interpret the result, the following Scale, Mean Range, and Descriptive Ratings were used:

	<b>Scale</b>	<b>Mean Range</b>	<b>Descriptive Rating</b>
A. Principles of DI	5	4.50 – 5.00	Strongly Agree (SA)
	4	3.50 – 4.49	Agree (A)
	3	2.50 – 3.49	Uncertain (UC)
	2	1.50 – 2.49	Disagree (DA)
	1	1.00 – 1.49	Strongly Disagree (SD)
B. Extent of Use of DI Strategies & Techniques	5	4.50 – 5.00	Heavily Used (HU)
	4	3.50 – 4.49	Frequently Used (FU)
	3	2.50 – 3.49	Sometimes Used (SU)
	2	1.50 – 2.49	Rarely Used (RU)
	1	1.00 – 1.49	Not Used (NU)
C. Effectiveness of DI Strategies & Techniques	5	4.50 – 5.00	Very Effective (VE)
	4	3.50 – 4.49	Effective (E)
	3	2.50 – 3.49	Somewhat Effective (SE)
	2	1.50 – 2.49	Of Little Effectiveness (OLE)
	1	1.00 – 1.49	Not Effective (NE)

### 3.4. Validity and Reliability

The face validity of the questionnaire was checked by university colleagues whose academic ranks range from assistant to associate professors. Besides, the questionnaire was pilot tested by the non-sample thirty participants and its reliability was checked using Cronbach's alpha at 0.79. Some items that seem vague for the respondents were rejected and some were improved.

### 3.5. Interviews and Focus Group Discussions

Semi-structured interviews and focus group discussions were conducted with the teacher-participants regarding their knowledge and understanding about the effectiveness of the selected DI strategies and techniques and the challenges experienced during the implementation of DI so as to obtain additional data pertinent to the study. Interviews with ten teachers and three groups for focus group discussions with 4 to 6 teacher-participants for each group were formed to triangulate the data obtained from the questionnaire.

### 3.6. Data Analysis

Both quantitative and qualitative data analysis techniques were employed in this study. Quantitatively, the percentage technique was used in determining the demographic profile of the teacher-respondents. The weighted mean was used in processing the 5-point Likert scale responses on the teachers' perceptions regarding the principles of DI and the extent of use of selected DI strategies and techniques. In evaluating the effectiveness of selected DI strategies and techniques, both the weighted mean and interview responses were the bases of the analysis. On the other hand, the data collected through focus group discussions were analyzed qualitatively. This involves exploring detailed verbatim transcript to determine the central themes found within teacher-participants' responses to the FGD questions.

## 4. Results and Discussions

To facilitate the presentation and discussions, the data in this study were grouped as follows: (4.1) Demographic profile of teacher-respondents (4.2) Teacher-respondents' perceptions regarding the principles of DI (4.3) Teacher-respondents' perceptions on the extent of use of selected DI strategies and techniques (4.4) Teacher-respondents' perceptions on the effectiveness of selected DI strategies and techniques and (4.5) Challenges experienced by teacher-participants during the implementation of differentiated instruction.

#### 4.1. Demographic Profile of Teacher-respondents

Table 1 shows the profile of the teacher-respondents. The result showed that the majority of the respondents are female (69.5%). As to the age of the respondents, it revealed that the majority or 31.7% were between 36 – 40 years old, while 17.1% were 41 – 45 years old, 14.6% were 46 – 50 years old, 11% were 26 – 30 years old, 9.7% were 31 – 35 years old, 7.3% were 51 – 55 years old, 4.9% were 21 to 25 years old and 3.7% were 56 years old and above. Findings imply that the study is dominated by the teacher-respondents who are at their middle-ages (36 – 40).

In terms of their highest educational level, the majority of the respondents have finished their master's degree programs (35.4) followed by with units in master's degree (26.8%). Moreover, 15.9% of the respondents were bachelor's degree holders, 14.6% with units in doctoral degree programs and 7.3% were graduates in the doctoral degree programs. Findings imply that their educational level is diverse.

Table 1. Demographic Profile of Teacher-respondents (N = 82)

Respondents' Profile	Frequency	Percentage
<b>Sex</b>		
Female	57	69.5%
Male	25	30.5%
<b>Age Bracket</b>		
21 – 25	4	4.9%
26 – 30	9	11.0%
31 – 35	8	9.7%
36 – 40	26	31.7%
41 – 45	14	17.1%
46 – 50	12	14.6%
51 – 55	6	7.3%
> 56	3	3.7%
<b>Highest Educational Level</b>		
Bachelor's Degree	13	15.9%
Master's Degree	29	35.4%
W/ Master's Degree Units	22	26.8%
Doctoral Degree	6	7.3%
W/ Doctoral Units	12	14.6%
<b>Years in Teaching</b>		
Less than 1 year	8	9.7%
1 – 5	14	17.1%
6 – 10	17	20.7%
11 – 15	18	22.0%
16 – 20	10	12.2%
21 – 25	8	9.8%
> 26	7	8.5%
<b>DI Trainings Attended</b>		
W/ DI Trainings attended	21	25.6%
W/O DI Trainings attended	61	74.4%

With regards to the number of years in teaching, it can be gleaned from the table that the majority (22.0%) of the respondents have 11 – 15 years in teaching, 20.7% have 6 – 10 years of teaching experience, 17.1% had 1 – 5 years in teaching, 12.2% have 16 – 20 years in teaching, 9.7% with less than a year in teaching, and 8.5% have 26 years and above experience in teaching. The data infer that the respondents of the study are dominated by teachers who are young in the teaching profession.

However, in terms of DI trainings attended, it was revealed that 74.4% of the respondents had no trainings attended relative to differentiated instruction while only 25.6% had DI trainings.

#### 4.2. Teacher-respondents' Perceptions Regarding the Principles of DI

Understanding and adhering to the principles of differentiated instruction facilitate the work of teachers and the success of the learners in a responsive classroom. These principles constitute the foundation for all phases of the instructional process, the organization and structure of subject matter, motivation of students, appropriate use of reward and reinforcement, and to the selection of teaching techniques. Among the fundamental principles that support differentiation and included in the survey are presented in Table 2. Respondents were asked to rate how much they agree or disagree with each principle of differentiated instruction based from their own experience of teaching.

As presented in Table 2, the principle of DI which states that, "Assessment and instruction are inseparable" posted the highest computed weighted mean of 4.74 which likewise exhibited a verbal interpretation of *Strongly Agree*. This implies that the respondents reach an agreement or strong acceptance on the close connection between instruction and assessment as a defining characteristic of an effective differentiated instruction.

Table 2. Teacher-respondents' Perceptions Regarding the Principles of DI

<b>Principles of Differentiated Instruction</b>	<b>Weighted Mean</b>	<b>Verbal Interpretation</b>
1. Teachers should articulate what is essential for students to learn.	4.11	Agree
2. Teachers should attend to student differences.	3.68	Agree
3. Students must participate in meaningful work.	4.44	Agree
4. Teachers and students must collaborate in learning.	4.28	Agree
5. Teachers should be flexible in their use of groups and whole class discussion.	4.20	Agree
6. Differentiated instruction is proactive rather than reactive.	3.15	Uncertain
7. Space, time and materials should be used flexibly to suit the needs of various learners.	3.59	Agree
8. Differentiated instruction is not synonymous with individualized instruction.	4.22	Agree
9. To differentiate effectively, teachers should identify students' readiness levels, modify the instructional content, process and product.	4.01	Agree
10. Teachers should understand student learning strengths and weaknesses.	3.55	Agree
11. Teachers need to identify student readiness for a particular concept, skill or task.	3.66	Agree
12. The goals of differentiated instruction are maximum growth and individual success.	4.18	Agree
13. Differentiation of instruction stems from effective and on-going assessment of learner needs.	4.40	Agree
14. The teacher is clear about what matters in subject matter.	4.18	Agree
15. Assessment and instruction are inseparable.	4.74	Strongly Agree
16. All students consistently work with respectful activities and learning arrangement.	3.43	Uncertain
17. Differentiation is more than a strategy or series of strategies.	2.85	Uncertain
18. Movement toward differentiation in teaching is movement toward expertise.	4.35	Agree
19. No instructional strategy can compensate for a teacher who lacks proficiency in the content area.	3.57	Agree
20. Differentiated instruction changes the roles of students as well as teachers.	4.21	Agree
<b>Composite Weighted Mean</b>	<b>3.94</b>	<b>Agree</b>

Out of twenty (20) principles of DI, there were sixteen (16) principles which were rated and their computed weighted means ranged from 3.55 to 4.44 and all disclosed a verbal interpretation of *Agree*. The five (5) principles of DI with the highest computed weighted means are as follows: “Students must participate in meaningful work” (4.44), “Differentiation of instruction stems from effective and on-going assessment of learner needs” (4.40), “Movement toward differentiation in teaching is movement toward expertise” (4.35), “Teachers and students must collaborate in learning” (4.28), and “Differentiated instruction is not synonymous with individualized instruction” (4.22).

Findings imply that the sixteen (16) principles of DI are generally adhered and supported by the teacher-respondents in their classroom practices as evidenced by their agreed result of evaluation. These further conclude that adherence to these principles facilitate the work of the teachers and the success of the learners in differentiated instruction.

However, three (3) of the principles of DI obtained the computed weighted means ranging from 2.85 to 3.43 which posted a verbal interpretation of *Uncertain*. These comprised of: “All students consistently work with respectful activities and learning arrangement” (3.43), Differentiated instruction is proactive rather than reactive (3.15), and Differentiation is more than a strategy or series of strategies (2.85).

Results imply that these three principles are the least implemented or practiced by the teacher-respondents in DI. Research shows that the amount of time someone spends in deliberate implementation or practice is what predicts continued learning in a given field, rather than time spent in more than generic implementation or practice (Ericson, Romer, 2003).

As a whole, the composite computed weighted mean of teacher-respondent’s perceptions regarding the principles of DI was 3.94 with a verbal interpretation of *Agree*. This implies that teachers who differentiate simply try to find the best possible fit between the instruction and learners who differ in significant ways from one another.

#### 4.3 Teacher-respondents’ Perceptions on the Extent of Use of Selected DI Strategies and Techniques

Among the twenty-five pre-determined DI strategies and techniques included in the survey are presented in Table 3. Respondents were asked to rate the extent of their use of the pre-determined strategies and techniques in the implementation of DI.

As illustrated in Table 3, there were thirteen (13) out of twenty-five (25) DI strategies and techniques which obtained the computed weighted means ranging from 3.50 to 4.17, revealing a verbal interpretation of *Frequently Used*. From among the frequently used DI strategies and techniques, the first three with higher computed weighted means were: “Tailor assignments based on students’ learning goals” (4.17), “Interview students” and “Assign open-ended projects” with the computed weighted means of 4.04 and 3.94, respectively.

Findings imply that the teacher-respondents frequently used the thirteen DI strategies and techniques in their respective classrooms which are deemed useful and necessary to meet the diverse needs of their students. Findings further infer that the strategies and techniques are familiar to the teacher-respondents as well as beneficial to both the teachers and the students.

There were eight (8) DI strategies and techniques which obtained the computed weighted means ranging from 2.65 to 3.43 revealing a verbal interpretation of *Sometimes Used*. Among the eight (8) DI strategies and techniques, the three (3) which emerged with higher computed weighted means were as follows: “Lecture-discussion” (3.43), “Graphic Organizers” (3.41), and “Tiering activities” (3.35).

Results infer that the teacher-respondents sometimes used the eight (8) DI strategies and techniques in the delivery of their lessons in their respective classrooms based on the interest and readiness level of the students.

In like manner, three (3) of the DI strategies and techniques obtained the computed weighted means ranging from 1.91 to 2.38 which were verbally interpreted as *Rarely Used*. These were “Sharing of strengths and weaknesses” (2.38), “Debate” (2.37), and “Mock trial” (1.91).

Findings imply that the teacher-respondents rarely used the three (3) strategies and techniques in the implementation of DI in their respective classrooms by considering the students’ learning profile or background knowledge.

However, “creating learning stations” in the classrooms as a DI strategy obtained the lowest computed mean of 1.48 and was verbally interpreted as *Not Used*. This implies that this strategy is of little effectiveness as evidenced by their evaluation and inappropriate to the college learning environment.

As a whole, the composite computed weighted mean of teachers’ perceptions on the extent of use of selected DI strategies and techniques was 3.28 with a verbal interpretation of *Sometimes Used*.

According to Tomlinson (2010) the students’ ability or readiness levels are important for teachers to know when matching the needs of the learners to the strategies to be utilized. When teachers differentiate strategies, they take into account the educational theories that support teaching and learning, to help students succeed academically. Teachers should include a variety of instructional strategies that meet their students’ learning profiles, interest and readiness levels.

Table 3. Teacher-respondents’ Perceptions on the Extent of Use of Selected DI Strategies and Techniques

<b>Differentiated Instructional Strategies and Techniques</b>	<b>Weighted Mean</b>	<b>Verbal Interpretation</b>
1. Create learning stations	1.48	Not Used
2. Use task cards	2.65	Sometimes Used
3. Interview students	4.04	Frequently Used
4. Sharing of strengths and weaknesses	2.38	Rarely Used
5. Use of think-pair-share strategy	3.67	Frequently Used
6. Implement reflection and goal setting exercises	3.57	Frequently Used
7. Tailor assignments based on students’ learning goals	4.17	Frequently Used
8. Group students with similar learning styles	3.61	Frequently Used
9. Assign open-ended projects	3.94	Frequently Used
10. Game-based learning	3.05	Sometimes Used
11. Problem-based learning	3.06	Sometimes Used
12. Graphic Organizers	3.41	Sometimes Used
13. Debate	2.37	Rarely Used
14. Tiering activities	3.35	Sometimes Used
15. Group study	3.72	Frequently Used
16. Team-based learning	3.76	Frequently Used
17. Peer mentoring	3.83	Frequently Used
18. Individualized instruction	3.01	Sometimes Used
19. Mastery learning	3.74	Frequently Used
20. Reciprocal teaching	2.74	Sometimes Used
21. Mock trial	1.91	Rarely Used
22. Lecture-discussion	3.43	Sometimes Used
23. Oral presentation/Reporting	3.87	Frequently Used
24. Self-study	3.79	Frequently Used
25. Computer- assisted instruction	3.50	Frequently Used
<b>Composite Weighted Mean</b>	<b>3.28</b>	<b>Sometimes Used</b>

#### 4.4. Teacher-respondents’ Perceptions on the Effectiveness of Selected DI Strategies and Techniques

Among the twenty-five selected DI strategies and techniques included in the survey are presented in Table 4. Teacher-respondents were asked to rate the effectiveness of the selected strategies and techniques in the implementation of DI.

Data in Table 4 reveal the computed weighted means and the teacher-respondents’ perceptions on the effectiveness of the selected DI strategies and techniques in teaching the new general education curriculum subjects. It can be observed from the table that among the twenty-five selected DI strategies and techniques, it revealed that eleven (11) DI strategies and techniques obtained the computed weighted means ranging from 3.52 to 4.15 which exhibited a verbal interpretation of *Effective* DI strategies and techniques. Among the eleven (11) DI strategies and techniques, the three (3) which obtained higher computed weighted



means were as follows: “Tailor assignments based on students’ learning goals” (4.15), “interview students (3.99), and “assign open-ended projects” (3.95).

Findings imply that the teacher-respondents perceive the eleven (11) DI strategies and techniques as effective. These further infer that the effective strategies which the teacher-respondents claimed are aligned to the varying skills, abilities, interests and learning styles of college students. Teaching strategies are carefully chosen and used to improve learning and make the subject matter interesting and learnable.

According to several studies, these strategies have been found to be significantly related to students’ learning achievement.

Likewise, ten (10) DI strategies and techniques obtained the computed weighted means ranging from 2.51 to 3.41 which correspondingly disclosed a verbal interpretation of *Somewhat Effective*. The four (4) DI strategies and techniques with higher computed weighted means include the following: “Graphic organizers” and “computer-assisted instruction” (3.41), “lecture-discussion” (3.40), and “group students with similar learning styles” (3.39).

Table 4. Teachers’ Perceptions on the Effectiveness of Selected DI Strategies and Techniques

Differentiated Instructional Strategies and Techniques	Weighted Mean	Verbal Interpretation
1. Create learning stations	1.57	Of Little Effectiveness
2. Use of task cards	2.51	Somewhat effective
3. Interview students	3.99	Effective
4. Sharing of strengths and weaknesses	2.40	Of Little Effectiveness
5. Use of think-pair-share strategy	3.65	Effective
6. Implement reflection and goal setting exercises	3.52	Effective
7. Tailor assignments based on students’ learning goals	4.15	Effective
8. Group students with similar learning styles	3.39	Somewhat Effective
9. Assign open-ended projects	3.95	Effective
10. Game-based learning	3.04	Somewhat Effective
11. Problem-based learning	3.07	Somewhat Effective
12. Graphic Organizers	3.41	Somewhat Effective
13. Debate	2.34	Of Little Effectiveness
14. Tiering activities	3.34	Somewhat Effective
15. Group study	3.73	Effective
16. Team-based learning	3.77	Effective
17. Peer mentoring	3.63	Effective
18. Individualized instruction	2.93	Somewhat Effective
19. Mastery learning	3.72	Effective
20. Reciprocal teaching	2.70	Somewhat Effective
21. Mock trial	1.89	Of Little Effectiveness
22. Lecture-discussion	3.40	Somewhat Effective
23. Oral presentation/Reporting	3.87	Effective
24. Self-study	3.77	Effective
25. Computer- assisted instruction	3.41	Somewhat Effective
<b>Composite Weighted Mean</b>	<b>3.25</b>	<b>Somewhat Effective</b>

Results infer that the teacher-respondents perceive the ten (10) DI strategies and techniques as *somewhat effective* in the delivery of their lessons in their respective classrooms. This suggests that teaching techniques as teacher's activities in the class should greatly involve students in the subject matter discussion and encourage students to participate in hands-on learning activities, share equally with other learners, and motivate other students to participate/react to the learning experience.

The teacher also needs to work with students as a friend, make the learning place more comfortable, organize lessons well and influence students by using different teaching methods.

However, four (4) DI strategies and techniques got the computed weighted means ranging from 1.57 to 2.40 which likewise interpreted as *Of Little Effectiveness*. These comprise the following: “Sharing of strengths and weaknesses” (2.40), “debate” (2.34), “mock trial” (1.89), and “create learning stations” (1.57).

As a whole, the composite computed weighted mean of teachers’ perceptions on the effectiveness of selected DI strategies and techniques was 3.25 with a verbal interpretation of *Somewhat Effective*.

In support to the findings above, a paper presented at the Holmes Partnership Annual Conference, and printed in the Phi Delta Kappan, Linda Darling Hammond, Arthur Wise, and Paul Klein stated:

*“If all children [students at every level] are to be effectively taught, educators must be prepared to address the substantial diversity in experiences children bring with them to school -- the wide range of languages, cultures, exceptionalities, learning styles, talents, and intelligences that in turn requires an equally wide and varied repertoire of teaching strategies. (p. 26, 2003).*

#### 4.4.1. Validation of Teacher-participants’ Perceptions on the Effectiveness of DI Strategies and Techniques

In order to validate the quantitative results (Table 4) on strategies and techniques with verbal interpretation of *Effective*, qualitative evidences were solicited through interviews from ten (10) teacher-participants who have claimed a particular strategy and technique as effective in their respective classes. The DI strategies and techniques were presented to each teacher-participant during the interview and each teacher-participant was asked to identify the DI strategy and technique to give his/her views on its effectiveness. The detailed verbatim transcripts of their answers are presented in an italic font.

The first teacher-participant who was interviewed regarding the DI strategies and techniques which were claimed as effective, teacher-participant A (female) replied:

*“Grounded from my years of experience in teaching, ‘tailor assignments based on student’s learning goals’ is an effective strategy or technique in teaching a new subject which is Understanding the Self, since students can select an avenue to present their understanding of the lesson based on how they learn the context of the material. Like a visual learner can make a poster to show his understanding of the lesson while a reader may want to write a paper.”*

The idea presented is supported with Tomlinson’s (2001) statement that at its most basic level, differentiating instruction means “shaking up” what goes on in the classroom so that students have multiple options for taking in information, making sense of ideas, and expressing what they learn. In other words, a differentiated classroom provides different avenues to acquiring content, to processing or making sense of ideas, and to developing products so that each student can learn effectively.

When teacher-participant D (male) was interviewed, he said:

*“Since I am using team-based learning in my subject, Readings in Philippine History, I am confident that team-based learning is proven an effective DI strategy since it encourages collaboration among my students rather than competition among the team members.”* He also added, *“team-based learning motivates learners to work together.”*

In support to the claim of teacher-participant D, Haberyan, (2007) reported that team-based learning has been recently utilized in science, education, business, and medical education disciplines with positive results. Specific benefits include improved student communication and group interaction skills, better comprehension of complex course concepts, higher level of educational outcomes for both high and low achieving students, improved retention of course information, enhanced higher order reasoning and social support within the classroom and improved critical thinking skills.

Additionally, when teacher-participant B (female) was asked the same question, she answered:

*“I consider interviewing students as one of the effective DI strategies. Asking questions about student’s preferred learning style and interest can help me adjust the content, process and product that will meet the student’s needs in teaching Science, Technology and Society.”*

To support the claim above, Astin (2020) expresses that extensive research confirms the value of student-teacher interactions. In *“What Matters in College,”* reports that interaction between student and faculty has “significant positive correlations with every academic attainment outcome: college GPA, degree

attainment, graduating with honors, and enrollment in graduate or professional school.” “In our experience we have found student interviews are a highly effective alternative or supplemental assessment method and teaching tool which students find valuable. We asked almost 400 college students enrolled in general education courses what benefits they receive from faculty interviews, and they reported that interviews enable them to receive immediate feedback, provide a unique setting to explain their work, and help them feel more responsible and accountable regarding the coursework. That is a laudable set of benefits.”

Teacher-participant J (male) presented his views regarding the strategy that he deemed effective and he explained:

*“The main advantage of group learning or group study is variability. A student might have troubled understanding a concept the way the teacher explains it, but might grasp it easily as explained by another student. By allowing students to learn in small groups can help struggling students gain a different perspective. I use group study in my subject which is, The Contemporary World where students can freely communicate with the members of the group. The subject is quite boring that is why one of the strategies that I adopt is group learning or group study.”*

The claims above are strengthened with Slavin’s (2010) research result. He found that students feel more successful when working in groups and working with other types of students. Those students who gain the most out of cooperative groups are those students who are willing to give and receive.

For teacher-participant I (male), he replied:

*“Assign open-ended projects is an effective DI strategy. Hence, this approach encourages learners to work and learn at their own pace, engages actively with content they must understand, and demonstrate student’s knowledge as effectively as possible. This strategy is useful in one of my Ethics class.”*

The claim of teacher-participant I is reinforced with Scott’s (2016) research findings that: 1.) Open-ended project design yields the best results and fosters the highest level of thinking, 2.) It allows students to develop and create all aspects of the project based on the students existing knowledge, interests, and hobbies. 3.) Finally, equally important in the open-ended project is its application in the real world.

Furthermore, teacher-participant E (female) provided her answer and she said:

*“Working with other students is a great way to get new perspectives on difficult material. That is why I can say that group study is an effective strategy where learners can teach each other concepts in ways that solidify their understanding and improve their comprehension of the topic.”* However, she added: *“Working with others requires a discipline that is not always necessary for lone studying. I use this strategy in teaching Art Appreciation.”*

The study of Gokce (2011) on the “Influence of group study techniques upon teaching and learning process in elementary education,” shows that most of the teachers benefit from group study techniques effectively and students are satisfied with the group studies. It is suggested that rules should be predetermined, preliminary study should be made by teachers, responsibilities should be given to students equally and students never should be enforced to participate in group studies in the application of group studies techniques. Moreover, it is offered that seating arrangement should be laid out for group studies and students’ opinions should be taken into consideration.

When asked about how mastery learning strategy worked in her classes, teacher-participant F (female) answered:

*“To achieve mastery learning particularly in my subject in Understanding the Self and in my other subjects, I usually simplify the topic or the lesson into a series of skills or instructional units. I teach a topic and then I conduct an evaluation to record each student's understanding of the topic or unit.”*

The same question was asked on how mastery learning strategy worked in his class. Teacher-participant C (male) answered:

*“Mastery learning or high level of understanding is achieved in a given domain of learning if students are given ample time to perform the given task.”* He further said: *“I do this by simplifying complex learning task into smaller and simpler ones to suit the learning*

*abilities of my students and makes the objective of the lesson attainable. I use this strategy in teaching Readings in Philippine History.”*

According to Cundiff (2020), Mastery learning approaches were designed to improve student learning and elevate the level of understanding across a broader swath of students. Mastery learning ensures students obtain grasp in a given topic before moving on to the next unit. It assumes any student can reach high levels of achievement given sufficient instruction, time and perseverance. Bloom’s Learning for Mastery (1968) and Keller’s Personalized System of Instruction (1968) both emphasized that while learning is linked to factors like student aptitude and quality of instruction, students can achieve mastery if they are allowed to learn the material at their own pace. Over 50 years of research proves that mastery-based learning is linked with higher student achievement rates and positive student attitudes towards particular subjects when started at a young age. Teaching for mastery encourages lifelong learning. When students are given time to learn and succeed, they are more likely to value perseverance, have confidence in their skills and understand their own learning needs.

The final question asked during the interview was about how peer mentoring worked in her class. Teacher-participant H (female) replied:

*“Peer mentoring is helpful especially if I cannot make it personally to my students who need my help. So, what I do is I assigned knowledgeable students to help those less so come to terms with university life, in what is known as peer mentoring.”* She further added and said: *“Peer mentoring is effective specially when someone is absent, the chosen student-mentor can provide or support mentorship to the mentee on the lesson the mentee has missed. I use this strategy in teaching Art Appreciation.”*

The same question was asked on how peer mentoring strategy worked in her class. Teacher-participant G (female) responded:

*“In my case, peer mentoring or I call it ‘peer-assisted learning’ works in my subject, Understanding the Self, by delegating advanced learners as support to student who cannot catch up or having difficulty learning a particular topic. This is a common strategy that I am using in my classroom because of a big class size.”*

Bruce and Bridgeland (2014) state that peer mentoring, when it involves a meaningful, long-term relationship, benefits both the mentee and the mentor. For the mentee, the most valuable thing about peer mentoring is feeling that someone cares about them and that they are not alone in navigating the challenges of their day-to-day life. For the mentor, the most valuable thing is feeling good about having made a difference in someone else’s life.

The responses and revelations of the teacher-participants in the interview attested and confirmed their perceptions and ratings on the effectiveness of DI strategies and techniques which exhibited an *effective* verbal interpretation. The responses further indicate great impact on how the teacher-participants implement differentiation strategies in their classrooms. This further implies that the voices of the teacher-participants are toward the support to the move on differentiated instruction as a response to addressing learner variance.

#### 4.5. Challenges Experienced by the College Teacher-participants during the Implementation of DI

Focus group discussions (FGDs) were undertaken to consult the teacher-participants on the challenges they experienced during the implementation of DI. Data analysis for this objective involved exploring detailed verbatim transcript to determine central themes found within teacher-participants’ responses to the FGD questions.

During the first FGD, the teacher-participants were asked on the challenges they experienced during the DI implementation.

FGD P1 (male) said:

*“To me it is class size. I had difficulty implementing DI because of large class size.”*

FGD P3 (male) confirmed the statement of FGD P1 and he added:

*“Yes, I agree with you. Large class size is one of the challenges. In my 5 classes, the least number of students per class is 36. With these 36 students in my class, I could hardly*

*manage them. How much more for classes with 40 or 50 and above number of students? Large classes can pose a serious challenge to creating a positive learning experience.”*

FGD P1 (male) again said:

*“Based on my experience, students in smaller classes spend more time on task than students in larger classrooms. Students are seen to be more involved in classrooms with fewer students. Another thing is that, classrooms with fewer number of students have better relationships with their teachers and peers.”*

FGD P2 (female) shared her concern and said:

*“Larger class size means more diverse students and learning needs. Therefore, to address the diverse learning needs effectively, entails more time in the preparation and adjustment of the course content as well as an engaging process.”*

FGD P4 (female) mentioned:

*“Implementing the differentiated instruction with large classes in PSU is challenging. Moreover, instructors teaching large classes need a better understanding and background of differentiated instruction so that both the teachers and students will not struggle. Teachers should be supported in terms of professional development trainings.”*

The challenge or theme presented and discussed during the first FGD was about “Large class size.” The statements and views of the participants imply that large class size can result to accumulate diverse learners with varying learning needs which can upsurge teachers’ challenges and responsibilities in teaching and in improving learning outcomes.

Hattie (2005) examined the research literature on class size reduction and the implications for improving student learning. The findings showed that class size reduction can result in meaningful increases in a more individual instruction, higher quality instruction, room for innovation, and increases teacher moral.

During the second FGD, the teacher-participants were asked the same question about the challenges they experienced during the implementation of DI. Aside from class size what other challenges did you experience while implementing differentiated instruction in your respective classrooms?

FGD P5 (male) said:

*“I notice that implementing differentiated instruction requires a lot of work and many teachers struggle to find extra time in their schedule. Therefore, it is time consuming. Teachers need a very careful planning, selection and organization of content and the resource materials. More significantly, assessing instruction/learning through multiple methods and techniques is a must in differentiated instruction which otherwise may not bring the desired result.”*

FGD P7 (female) added her concern and said:

*“My idea is related to what Mr. P5 has said. DI is a comprehensive process which includes planning, preparation of varied materials, utilizing varied teaching resources and assessments designed to address individual student’s learning needs. In short, DI is a long process and time consuming.”*

FGD P6 (male) cited his experience and he said:

*“Planning and preparing for my 3 to 4 different lessons a day is so hard and time consuming too. One of these subjects is new which I have not taught yet in the previous semesters. I have to vary each lesson for my 36 to 45 students per class to suit the varying levels of needs of my students.”*

FGD P8 (male) expressed his views and he said:

*“Time consuming because we are not used to differentiate instruction. We are used with the conventional way of teaching our students. In conventional teaching we only prepare one type of lesson intended for all students unlike in differentiated instruction that we prepare more depending on the varying learning needs of our students. This can also mean teaching the same material to all students using a variety of instructional strategies, or it may require the teacher to deliver lessons at varying levels of difficulty based on the ability of each student.”*

During the second FGD, the teacher-participants discussed the theme or challenge, “DI requires a lot of work and time consuming.” All the teacher-participants in the FGD were able to explore their views on the theme squarely. Their views were connected to Tomlinson (2003) when she cited that meeting the needs of a wide range of students is one of the greatest challenges because of a perceived lack of knowledge and skills in adapting curriculum materials and adjusting learning content and strategies in an efficient and effective ways during the flow of teaching and learning. Implementing DI can be discouraging for teachers because it requires more time and a new way of thinking about curriculum and instruction.

On the third FGD, before it started, one of the teacher-participants was telling his co- teacher-participant about a professional development training in DI. When the FGD starts, the researcher asks the question to the group. Aside from large class size, time consuming and more work on differentiated instruction, what other challenges or difficulties did you experience while implementing DI?

FGD P10 (female) said:

*“Lack of professional development training on DI is a challenge for me and I will be honest in telling you that I have no specific training on differentiated instruction that is why I struggle in implementing DI. “*

FGD P9 (female) suggested an idea aligned to P10 and she said:

*“Maybe it is high time for us to come up with a university-wide training program and its role is to identify the instructional needs of the faculty and conduct trainings in order to meet the educational initiatives of the faculty and eventually lead to addressing students learning needs. In this way, the university can save instead of sending teachers to attend seminars outside the university.”*

FGD P12 (male) added his views and he said:

*“Maybe we can have also peer to peer professional development by tapping into the pool of knowledge and skills from among the teaching staff. For example, a teacher who is an expert in data analysis of student’s scores using Excel spreadsheets can share his or her expertise with other teachers.”*

FGD P11 (female) also added and she said:

*“Reading from the internet on a particular topic to teach, the strategies that you want to know and use for a particular group of learners can help us uncover and explore.”*

FGD P13 (male) presented his views and he said:

*“Inadequately trained teachers are likely to experience poor teaching performance and increased level of work-related stress.”* He added: *“The only way to improve outcomes is to improve instruction. This can be done through training in specific subject.”*

The views cited by the teacher-participants during the third FGD draws a theme on “Lack of professional development trainings,” which suggests that teacher professional development should therefore be looked at as a continuous process. This is true because learning is a lifelong process too. If teachers do not keep up with the global changes, especially those that come with technology, then they will not fit in this era. It is on this basis that continuing professional development (CPD) is prioritized. Effective professional development doesn’t end with the passing on of the new skill or strategy. Teachers need support while they make attempts to implement the strategy to help them get through any challenges they may have from changing their instructional practices. In order to serve our students, we too must change and grow.

## 5. Conclusion and Recommendations

Based on the findings of the study, the following conclusions were drawn: The majority of the respondents were at their middle-ages, have finished their master’s degree programs and have taught in Partido State University for almost fifteen years. Most of the respondents have not attended specific or related trainings to differentiated instruction, however, all the teacher-respondents have attended the General Education Curriculum trainings.

Generally, the principles of differentiated instruction included in this study were strongly adhered and supported by the respondents. Teacher-respondents agreed positively on the most important principle underlying differentiated instruction which is the recognition that teachers are not simply content area

specialists or evaluators of student work, but rather, designers of educational experiences which also facilitate the work and success of the learners.

Most of the DI strategies and techniques included in this study were frequently used in teaching general education curriculum classes and a large majority of DI strategies and techniques were rated effective by the teacher-respondents. Whereas, the revelations of the teacher-participants in the interview attested and confirmed their perceptions and ratings on the effectiveness of DI strategies and techniques which exhibited an effective verbal interpretation. The positive perceptions held by teacher-respondents regarding DI is expected to improve the implementation of such teaching practices in curriculum delivery.

Large class size which results to accumulate diverse learners with varying learning needs can upsurge teachers' challenges and responsibilities in teaching and in improving learning outcomes, implementing differentiated instruction which requires a lot of work and therefore it is time consuming, and lack professional development trainings particularly in differentiated instruction are among the challenges experienced by the teacher-respondents during the implementation of DI.

Implementing DI addresses differences in student preparation, interests, and strengths by offering a variety of learning pathways within the same classroom that differ in terms of content, focus, activities, or outcome. Differentiated instruction is not the same as tracking, which divides students into ability groups. Nor should it be confused with individualized instruction, since it involves team-based learning or small group activities. Differentiated instruction is most effective in classrooms with a wide range of intellectual capabilities and learning styles.

From the findings and conclusions, the following recommendations are offered: 1.) Differentiated instruction (DI) should be fully implemented in the tertiary level to address the diverse needs of slow, average, and fast learners. Hence, teachers must appropriately modify or adjust the contents and adopt varying strategies and techniques to better meet the needs of diverse students in the classroom. 2.) Professional development trainings focusing on differentiated instruction should be included in the University-wide Annual Faculty Development Training for college teachers particularly to the neophyte faculty members. 3.) Since differentiated instruction requires a lot of work and time consuming, college teachers should be given a maximum of three-subject preparations with no more than eighteen units teaching loads.

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