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Differentiated Instruction and Higher Order Thinking Skills of Grade 12 Students in Understanding Culture

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Abstract — This study examined the effectiveness of differentiated instruction in improving students' academic performance and higher order thinking skills. Fifty students from San Isidro Integrated National High School participated by completing a questionnaire with a 45-item test covering three UCSP lessons. Pre-test and post-test results were used to classify students into different levels. Based on their levels, students received tiered learning instructions and then took the post-test. The results showed that differentiated instruction significantly enhanced students' higher order thinking skills, with notable increases in analyzing, evaluating, and creating. These findings support the integration of differentiated instruction into the UCSP curriculum to improve students' higher order thinking skills. It is recommended that students be encouraged to develop their higher order thinking skills, explore their interests, assess their capabilities, and discover their learning styles. Teachers should execute lessons effectively using differentiated instruction and incorporate various activities that promote higher order thinking. School administrators should provide additional training on differentiated instruction and activities that foster the development of higher order thinking skills. The study concludes that aggressively integrating differentiated instruction can positively impact students' academic performance. Future research should expand the scope by involving a larger and more diverse population.

Keywords — Readiness; HUMSS Students; Ex-post-Facto; Performance; Career Goal; Potential Challenges

I. Introduction

The ability to think critically and solve problems is crucial in education and beyond, as it impacts learning capabilities and academic performance. Students with good thinking skills often perform well academically and succeed in various challenges. Higher-order thinking skills (HOTS) involve analysis, synthesis, and evaluation, which go beyond low-order learning outcomes like memorization.

However, critical thinking is not effectively taught in the Philippine education system, leading to a deficiency in higher thinking skills among Filipino students. Differentiated instruction (DI) is suggested as a solution, as it caters to students' diverse backgrounds and learning needs. DI can be implemented through differentiation in content, process, product, and learning environment.

The variable being discussed in this research is the utilization of DI and its impact on HOTS of Grade 12 students taking the Understanding Culture, Society, and Politics (UCSP). The ability to think critically and solve problems is essential for academic success and the ability to tackle challenges beyond the educational setting.

However, the researcher highlights a deficiency in critical thinking instruction within the Philippine education system, leading to a lack of higher-order thinking skills among Filipino students. As a potential solution, differentiated instruction is proposed. DI is a teaching approach that takes into account the diverse backgrounds and learning needs of students. It involves adjusting learning goals, employing various instructional formats and strategies, and considering students' learning styles. By implementing DI, teachers aim to enhance students' higher-order thinking skills.

The researcher believes that DI can contribute to the development of critical thinking and higher-order thinking skills. This is why the researcher investigated the impact of utilizing DI on Grade 12 students' HOTS.

This study has proven beneficial to various stakeholders. For students, it provided them with activities suited to their learning styles, helping them identify their interests and the importance of differentiated instruction for their overall development. Teachers benefited from the study by gaining insights on managing classrooms with differentiated instruction and meeting learners' needs for holistic development. Parents gained knowledge on how to support their child's optimal learning. School administrators can now support teachers in implementing differentiated instruction school-wide based on the effectiveness demonstrated in the study. Finally, future researchers can utilize the study's results as a guide or support for their own related studies on differentiated instruction.

[1]. Effective implementation of HOTS requires proper instructional design [2]. The significance of HOTS is highlighted by the gap between the skills students acquire and those required in the working world [3]. Teachers need to expand their knowledge and utilize engaging activities to teach HOTS effectively [4]. In smart classrooms, peer interaction and learning motivation directly impact students' HOTS development [5]. Assessments emphasizing critical thinking enhance student achievement [6]. HOTS assessments motivate students, develop critical and creative thinking skills, and improve problem-solving abilities [7]. Incorporating HOTS based on Bloom's Taxonomy improves student understanding [8]. Research has shown that differentiated instruction yields positive outcomes in various educational contexts, enhancing student achievement, study habits, social interaction, motivation, and engagement [9]. Thus, educators should strive to incorporate differentiated instruction for inclusive and effective learning environments.

Objectives of the Study

This research study aims to investigate the impact of utilizing DI on the HOTS of Grade 12 students enrolled in the course UCSP. The study specifically sought to answer the following questions: First, what is the initial performance of the learners in terms of their ability to analyze, evaluate, and create before the implementation of differentiated instruction? Second, what is the learners' performance after the utilization of differentiated instruction in terms of their ability to analyze, evaluate, and create? Third, what are the pre-test and post-test scores of the learners, indicating their progress throughout the study? Finally, the study aims to determine if there is a significant difference in the students' pre-test and post-test scores in the higher-order thinking skills following the implementation of differentiated instruction. By addressing these questions, the research intends to shed light on the effectiveness of differentiated instruction in enhancing the higher-order thinking skills of Grade 12 students in the context of Understanding Culture, Society, and Politics.he

II. Methodology

In order to examine the link between independent and dependent variables, this study used an experimental methodology. Students from a certain senior high school class who participated in the study were divided into groups according to their proficiency levels as established by a pre-test. Then, based on the results of the students' pre-test, tier-based learning instructions were used. Results from the pre- and post-tests were compared to assess how well the differentiated instruction strategy worked.

The study focused on one portion of 50 Grade 12 students from San Isidro Integrated National High School in Lipa City rather than using any particular sampling methodology. The proficiency levels identified by the pre-test administered before to the deployment of differentiated instruction were used to classify and group the students in this diverse segment.

A three-part, self-made test was used to gather the data. The Social Studies, English, and Research teachers evaluated and approved the test, ensuring its validity and reliability. To improve the test's quality, unreliable objects were replaced. The test's questions evaluated the students' knowledge of three distinct subjects: socialization, the importance of cultural symbols and rituals, and cultural relativism and ethnocentrism. In accordance with higher-order thinking skills (HOTS), the questions were grouped.

Table 1. Distribution of Questions per Topic

Topic	Analysis	Evaluating	Creating	Total
Cultural Relativism and Ethnocentrism	A1, A2, A3, A4, A5	E1, E2, E3, E4, E5	C1, C2, C3, C4, C5	15
Significance of Cultural, Social, Political, and Economic Symbols and Practices	A1, A2, A3, A4, A5	E1, E2, E3, E4, E5	C1, C2, C3, C4, C5	15
Socialization	A1, A2, A3, A4, A5	E1, E2, E3, E4, E5	C1, C2, C3, C4, C5	15
Total	15	15	15	45

Data Collection Procedure

The data gathering procedure in this study involved administering a pre-test to the students to determine their proficiency levels. Based on their scores, the students were categorized into five tiers: Advanced, Proficient, Approaching Proficiency, Developing, and Beginning. Each tier was assigned different instructional activities tailored to their levels in topics such as Cultural Relativism and Ethnocentrism, Significance of Cultural, Social, Political, and Economic Symbols and Practices, and Socialization. Activities included statement analysis, picture interpretation, concept mapping, passage reading with related questions, and sentence completion, among others. After the instruction, students took post-tests, and their scores were recorded. The data were then analyzed and interpreted by a research statistician to draw conclusions.

Data Analysis

In this research, various statistical treatments were employed to analyze the data. Means and averages were used to compare the capabilities of Grade 12 students in terms of their ability to analyze, evaluate, and create. Test score reliability was assessed to determine the consistency of scores over time, indicating the stability of the test. Cronbach's alpha, a measure of internal consistency, was used to assess reliability for items scored dichotomously, such as multiple-choice questions. The t-test, an inferential statistic, was used to determine if there were significant differences between the means of two groups and their relationship. Standard deviation, which measures variation or dispersion, was utilized to determine significant differences in scores between different instruction types and before and after instruction in higher-order thinking skills tests.

Ethical Consideration

In order to ensure ethical considerations in this study, several measures were implemented. Anonymity was strictly maintained to protect the privacy and confidentiality of the participants. Students were given the choice to participate voluntarily, and their involvement was entirely optional, without any pressure or coercion. To further protect their identities, the use of

participants' names was optional, allowing individuals to maintain their anonymity if they wished. These ethical safeguards were put in place to prioritize the well-being and autonomy of the participants, ensuring that they had full control over their participation and that their personal information remained confidential throughout the research process.

III. Results and Discussion

This section includes the initial levels of students' HOTS and their subsequent growth after the implementation of DI. The findings contribute to the understanding of the impact DI on students' HOTS and the importance of employing effective teaching strategies to foster students' analytical, evaluative, and creative abilities.

Table 2. Student's Level in Analyzing Before DI

Proficiency Level	Frequency	Percent
Beginning	1	2
Developing	5	10
Approaching	17	34
Proficient	21	42
Advanced	6	12
Total	50	100

Table 2 shows the frequency and percentage of students who took the pre-test. The highest frequency of 21 students tantamount to 42 percent of the sample is recorded. On the other hand, the least frequency of one is composed two percent of the respondents with a raw score of one point. Judging from this value alone, it could be said that majority of the students did better as 54 of them are proficient or higher.

However, a closer examination of data also indicates a failing grade of 72 percent. The data also collected from students resulted to a mean of 7.76 over a 15 item test and would have a transmuted grade of 72 which means the class only has a beginning competency.

According to DepEd's transmutation table, in a 15-item test with analysis questions, students should get at least a raw score of nine to get a 75 percent grade. To be precise, this meant that in this test, only 20 of the 50 students passed the pre-test which composed 40 percent of the respondents, while 60 percent of them failed with a score of eight and below. Pursuant to DepEd Order No. 31 which named the five levels of proficiency as beginning (B), developing (D), approaching proficiency (AP), proficient (P), and advanced (A), two percent of students have beginning proficiency, 10 percent have developing proficiency, 34 percent have approaching proficiency, 42 percent are proficient, and 12 percent are advanced learners.

These numbers suggest that a great majority of students do not have prior knowledge necessary for analyzing the three lessons in UCSP. This also proves that the teacher needs to employ an effective strategy to teach the lessons' objectives and improve students' analysis skills to make sure that there is a successful teaching-learning process and development of HOTS. The researcher would like to argue that even if lessons were not discussed in the pre-test, prior studies in AP and other subjects integrating culture, politics, and society, as well as their analytical thinking skills are enough for them to pass the test. Simply, majority of the students failed therefore an assumption that they face challenges in analytical skills are acceptable. Students have struggled in analytical skills [12][13][14].

With proficiency in analytical thinking skills, the students should be able to collect information and data, extraction of relevant data, identification of possible causes for the problem, critical examination of issues by breaking them down into manageable parts, analyses information to determine and ascertain the most likely cause of the problem, identification of logical, factual outcomes based on the data, information and analyses conducted and action to prevent the problem from occurring partially or totally [16].

Table 3. Student's Level in Evaluating Before DI

Proficiency Level	Frequency	Percent
Beginning	1	2
Developing	16	32
Approaching	22	44
Proficient	11	22
Advanced	0	0
Total	50	100

Table 3 shows the pre-test results of the students in the evaluation level of Bloom's Taxonomy. The table shows that the frequency was concentrated with 22 respondents, this meant that 44 percent of the respondents have approaching proficiency. Meanwhile, no respondent got a level of advance proficiency. The students underperformed on evaluation questions as they only scored 5.46 over a 15-item test and would have a transmuted grade of 69 which means the class has a beginning competency.

According to DepEd's transmutation table, in a 15-item test, students should get at least a raw score of nine to get a 75 percent grade. This meant that in this test with evaluation type of questions, f 11 or 22 percent of the students were considered proficient, while a staggering 78 percent of them failed. Pursuant to DepEd Order No. 31 which named the five levels of proficiency as beginning (B), developing (D), approaching proficiency (AP), proficient (P), and advanced (A). Clearly, these numbers suggest that more than a third of the class population failed. Students do not have prior knowledge necessary for evaluating the three lessons in UCSP. The importance of being able to employ an effective strategy to teach the lessons' objectives and improve students'

evaluation skills has become more and more necessary, because students should develop their evaluation skills as it has become more challenging to determine the truth and reliability of information available for them [17].

Students' poor evaluative skills caused their low scores, and this can be associated with their lack of knowledge on the three lessons. Simply, a whopping 92 percent of students failed the pre-test, therefore an assumption that they face challenges in evaluation skills are acceptable [18]. Students evaluating skills can be improved by activities such as journals, diaries, critiques, problem sets, product reviews, or studies that require students to test, monitor, judge, or critique readings, performances, or products against established criteria or standards [19].

Table 4. Student's Level in Creating Before DI

Proficiency Level	Frequency	Percent
Beginning	2	4
Developing	11	22
Approaching	31	62
Proficient	6	12
Advanced	0	0
Total	50	100

Table 4 shows the frequency and percentage of students who took the pre-test. The highest frequency of 31 students, which is tantamount to 62 percent of the sample is recorded and that is considered as Approaching Proficiency. On the other hand, the least frequency of two is recorded as Beginning Proficiency, while no student scored as Advance Proficiency. From table 1.3 alone, it could be said that the students performed poorly as only six or 12 percent of them is under proficient level of learning.

On average, the students scored 5.44 over a 15 item test and would have a transmuted grade of 69 which means the class has a beginning competency. According to DepEd's transmutation table, in a 15-item test, students should get at least a raw score of nine to get a 75 percent grade. This meant that in this test with creating type of questions, 88 percent of students are outside the passing range. On the other hand, actual data shoes that only four of the 50 students passed the pre-test which composed while 92 percent or 46 students failed with a score of 8 and below.

DepEd Order No. 31 stipulated that the five levels of proficiency for students are beginning (B), developing (D), approaching proficiency (AP), proficient (P), and advanced (A). On these levels, other students are on developing proficiency which composed 22 percent. These numbers suggest that a great majority of students do not have the skills or knowledge to create meaning out of what they have already known from previous lessons or experience. Several researchers have already established that there is a connection in the students creating skills as well as their academic performance skills [15]. This meant that the students low scores already meant that they are struggling with Bloom's creating skills.

Creating is the final level of Bloom's taxonomy, in this level students should demonstrate a full knowledge by applying what they've learned, analyzed and evaluated, and building something, either tangible or conceptual [20]. The common applications of creating include writing a manual or report on a particular topic, designing a piece of machinery, or revising a process to improve the results. At this grade level, students should have been able to develop creating but only 12 percent of the respondents are proficient. This is should be an alarming fact for academic practitioners, schools, and universities. Furthermore, students have poor creating skills [18]. But there are activities that can be used to improve this level such as research projects, musical compositions, performances, essays, business plans, website designs, or set designs that require students to make, build, design or generate something new [19].

Table 5. Student's Level in Analyzing After DI

Proficiency Level	Frequency	Percent
Beginning	0	0
Developing	2	4
Approaching	13	26
Proficient	21	42
Advanced	14	28
Total	50	100

Table 5 shows the frequency and test percentage of students who took the post-test after the lesson is taught using differentiated instruction. The highest frequency of 21 students, which composed 42 percent of the respondents was interpreted as Proficient. No respondent scored below one which means no student is with beginning proficiency. On the other hand, the least frequency of two is recorded which means they were under developing frequency.

Pursuant to DepEd Order No. 31 stipulated that the five levels of proficiency for students are beginning (B), developing (D), approaching proficiency (AP), proficient (P), and advanced (A). On these levels, 13 students have approaching proficiency and 14 students have advance proficiency which composed 26 and 28 percent respectively.

On average, the students scored 8.78 over a 15 item test and would have a transmuted grade of 74 which means the class has failed and has a beginning proficiency but is not too far out from passing the test overall to reach developing competency. To sum up the data, 52 percent of the respondents failed the test but there is an additional eight percent that is added to the respondents who passed the pre-test, and from the overall score there is a two-point increase from 72 percent in the pre-test to 74 percent in the post-test. The researcher attributes this increase with the use of DI in teaching UCSP.

Contrary to the findings, a study with 28 respondents found that DI does not help in developing students analytical skills [21]. However, studies also reveal that differentiated teaching approach increases student success, and during this period, students showed not just a positive

cognitive but also affective developments because DI affects students' motivation and engagement positively [22].

Table 6. Student's Level in Evaluating After DI

Proficiency Level	Frequency	Percent
Beginning	0	0
Developing	5	10
Approaching	24	48
Proficient	17	34
Advanced	4	8
Total	50	100

Table 6 shows the frequency and percentage of students who took the post-test after the lesson is taught using differentiated instruction. Looking at the evaluating scores of students, the highest frequency of 24 is recorded with an interpretation of Approaching Proficiency. While the lowest frequency is recorded with an interpretation of advance proficiency which composed eight percent of the sample. Meanwhile, there are no students in the level of beginning proficiency.

Pursuant to DepEd Order No. 31 stipulated that the five levels of proficiency for students are beginning (B), developing (D), approaching proficiency (AP), proficient (P), and advanced (A). On these levels, 5 students have developing proficiency and 17 students have advance proficiency which composed 10 and 34 percent of the respondents respectively.

To sum up the data, 66 percent or 33 students of the respondents still failed in the test where creativity skills are utilized. However, there is a big difference in the percentage of those who passed, an additional 26 percent that is added to the respondents who passed the pre-test which means that from 4 respondents on the pre-test, after DI 34 percent or 17 students have now passed the post-test. The results suggested an improvement of students' scores from 5.46 to 7.20 after instruction. The researcher attributes this increase to the use of DI in teaching the topics.

Differentiated instruction improves evaluating as a cognitive level [23]. Learning becomes more meaningful and relevant students work on their own interest. Moreover, when teachers consider students' interests and involvement in the process of learning, it shows their ability to model how to think about what students want to learn, supporting their learning with stimulating experiences critically and making the resources available to promote their academic success [24].

Table 7. Student's Level in Creating After DI

Proficiency Level	Frequency	Percent
Beginning	1	2
Developing	4	8
Approaching	21	42
Proficient	22	44
Advanced	2	4
Total	50	100

Table 7 shows the frequency and percentage of students who took the post-test after the lesson is taught using differentiated instruction. Looking at the evaluating scores of students, the highest frequency of 22 students or 44 percent of the respondents is recorded means that these respondents are proficient. On the other hand, the least frequency of one is recorded across the beginning proficiency. This meant that 48 percent of the students are on a passing range of 8 and above and an interpretation of proficiency and higher. The remaining 52 percent are on the failing range of 5 - 7 and below.

A closer look in the frequency, two respondents scored the highest which composed four percent of the sample. On the hand, one respondent scored the lowest which composed two percent of the population. Pursuant to DepEd Order No. 31 which stipulated that the five levels of proficiency for students are beginning (B), developing (D), approaching proficiency (AP), proficient (P), and advanced (A). On these levels, 4 students have developing proficiency, 21 students have approaching proficiency, twenty- two were proficient and two students of advanced proficiency which composed of 8, 42, 44 and 4 percent of the respondents respectively. On average, the students scored 7.20 over a 15- item test from 5.44 in the pre-test. The class also has a transmuted grade of 72 which means the class has a beginning competency. Clearly, the DI was a factor in the addition of 12 more students passing the post-test.

Several authors concluded that the DI has been operationalized in many different ways and that DI improves students' HOTS which included creating [25]. Literature also posits that DI is effective because meeting varying learning abilities, academic levels, learning styles, and learning preferences and need tailored instruction to meet their unique needs, thus students improve their academic performance [26].

Table 8. Summary of Students' Pre-test Scores

Student No	Analysis	Evaluating	Creating	Total
1	8	6	2	16
2	11	2	5	18
3	1	8	5	14
4	12	6	7	25
5	4	4	6	14
6	7	5	5	17
7	3	5	5	13
8	6	3	1	10
9	13	9	8	30
10	7	3	6	16
11	9	3	5	17
12	9	6	5	20
13	7	4	4	15
14	10	7	5	22
15	4	4	4	12
16	10	9	7	26
17	7	5	5	17
18	10	6	6	22
19	10	1	3	14
20	7	6	6	19
21	10	8	5	23
22	5	4	5	14
23	4	3	4	11
24	12	6	1	19
25	9	4	4	17
26	6	4	3	13
27	9	5	5	19
28	10	5	9	24
29	6	2	4	12
30	8	9	5	22
31	11	5	6	22
32	5	6	4	15
33	6	4	7	17
34	5	4	8	17
35	10	8	9	27
36	9	4	6	19
37	8	7	5	20
38	8	8	9	25

39	8	8	6	22
40	6	5	4	15
41	7	5	5	17
42	4	4	6	14
43	7	5	6	18
44	10	5	4	19
45	10	5	7	22
46	6	8	7	21
47	11	9	6	26
48	8	7	7	22
49	7	8	6	21
50	8	6	9	23

Table 8 shows that the students average score is 18.66 over a 45 item test. The scores of the students in the pre-test indicate that they are stronger in analyzing compared to evaluating and creating. Specifically, the students scored an average of 7.76 points in a 15-item test in the analyzing section. In the evaluating section students scored 5.46 over 15, and 5.44 points over 15 in the creating section. This suggests that students need more guidance and practice in developing their skills in evaluating and creating, which are essential higher-order thinking skills for success in various fields.

Creating is the final level of Bloom's taxonomy, in this level students should demonstrate a full knowledge by applying what they've learned, analyzed and evaluated, and building something, either tangible or conceptual [20]. The common applications of creating include writing a manual or report on a particular topic, designing a piece of machinery, or revising a process to improve the results. At this grade level, students should have been able to develop creating but only 12 percent of the respondents are proficient. This is should be an alarming fact for academic practitioners, schools, and universities. There are activities that can be used to improve this level such as research projects, musical compositions, performances, essays, business plans, website designs, or set designs that require students to make, build, design or generate something new [19] to improve students poor creating skills [18].

According to DepEd's transmutation table, in a 15-item test, students should get at least a raw score of nine to get a 75 percent grade. This meant that in this test with creating type of questions, 88 percent of students are outside the passing range. On the other hand, actual data shoes that only four of the 50 students passed the pre-test which composed while 92 percent or 46 students failed with a score of 8 and below. These numbers suggest that a great majority of students do not have the skills or knowledge to create meaning out of what they have already known from previous lessons or experience. Several researchers have already established that there is a connection in the students creating skills as well as their academic performance skills [15]. This meant that the students low scores already meant that they are struggling with Bloom's creating skills.

Higher-order thinking skills, such as analyzing, evaluating, and creating, are positively associated with academic achievement and success in the workplace. Students who possess these skills are better equipped to solve complex problems, make sound decisions, and communicate effectively [27]. Therefore, it is important for educators to design and implement instructional strategies that promote the development of higher-order thinking skills in their students.

Furthermore, HOTS are important cognitive skills [28]. These skills are critical for students to develop in order to become successful learners, as they enable them to process and apply knowledge in meaningful ways [28]. Therefore, it is crucial for educators to provide opportunities for students to develop these skills in order to prepare them for future academic and career success.

The results of the pre-test suggest that students need more support in developing their skills in evaluating and creating. By providing targeted instruction and practice opportunities, educators can help students enhance their higher-order thinking skills, which are essential for academic and career success, as demonstrated by recent studies.

Table 9. Summary of Students' Post-test Scores

Student No	Analysis	Evaluating	Creating	Total
1	8	5	4	17
2	12	8	9	29
3	4	6	5	15
4	9	9	9	27
5	8	6	10	24
6	6	5	9	20
7	4	5	7	16
8	6	3	5	14
9	12	11	11	34
10	7	5	5	17
11	8	6	6	20
12	11	6	7	24
13	8	9	6	23
14	7	8	8	23
15	5	4	8	17
16	10	7	10	27
17	8	5	4	17
18	10	5	7	22
19	9	4	6	19
20	14	9	6	29
21	11	7	7	25
22	5	4	5	14
23	8	7	4	19

24	11	7	1	19
25	10	8	8	26
26	12	6	7	25
27	9	9	5	23
28	12	12	9	33
29	5	3	4	12
30	13	11	8	32
31	9	6	8	23
32	8	7	8	23
33	11	7	7	25
34	7	5	6	18
35	11	9	9	29
36	7	7	6	20
37	8	10	9	27
38	12	9	11	32
39	7	7	9	24
40	7	6	6	19
41	8	5	6	19
42	7	5	6	18
43	7	9	8	24
44	10	9	7	26
45	10	8	9	27
46	8	9	9	26
47	11	13	9	33
48	11	10	10	31
49	10	9	8	27
50	8	10	9	27

Table 9 shows the pre-test scores average 18.66 over 45 while the same test is administered for the post-test shows an average of 23.2 over 45 after differentiated instruction was administered. In the post test, students scored an average of 8.78 points in a 15-item test in the analyzing section. In the evaluating section students scored 7.2 over 15, and 7.2 points over 15 in the creating section.

Previously pre-test scores indicate that students had lower proficiency in the higher-order thinking skills of evaluating and creating, with lower scores in those sections compared to the analyzing section. However, after receiving differentiated instruction, the post-test scores show improvement in all three sections, with a higher average score in the analyzing, evaluating, and creating sections. This suggests that targeted instruction can be effective in improving students' skills in higher-order thinking, which are essential for academic and career success.

Differentiated instruction is an effective approach for promoting higher-order thinking skills in students. This study found that students who received differentiated instruction had significantly higher scores in critical thinking, problem-solving, and creativity compared to those who did not receive this type of instruction [29]. Furthermore, targeted instruction has a significant impact on student learning outcomes, with an effect size of 0.77, which is considered to be a large effect. This suggests that providing targeted instruction, such as differentiated instruction, can lead to significant improvements in student learning outcomes [30].

The findings indicate that the means align with the levels of Bloom's taxonomy, which is a hierarchical structure that requires mastery of lower-level skills before advancing to higher-level ones [20]. Since most students demonstrated beginning competency in analyzing, it is expected that the averages for evaluating and creating would be lower as these skills build upon the foundation of analyzing. Therefore, students with weaker analyzing skills may struggle to perform well in evaluating and creating. It follows that as students' analyzing skills improve, their evaluating and creating skills also improve. These results suggest that teachers should adopt a more proactive approach to developing higher-order thinking skills in their students.

The improvement in scores in the post-test after differentiated instruction suggests that targeted instruction can be effective in improving students' skills in higher-order thinking. This is supported by recent research on differentiated instruction and targeted instruction, highlighting the importance of providing opportunities for students to develop these skills in order to prepare them for future academic and career success.

Table 10. Significant Difference of Students' Pre-test and Post-test Results per HOTS

	Pre-test		Post-test		t	Sig.
	Mean	SD	Mean	SD		
Analyzing	7.76	2.55	8.78	2.38	-3.294	0.002
Evaluating	5.46	2.00	7.20	2.32	-6.158	0.000
Creating	5.44	1.83	7.20	2.07	-7.608	0.000

The table above shows the means, standard deviations, t-value, and the degree of freedom of the both the pre-test and post-test scores of students in three lessons of UCSP. This table shows that the highest weighted mean for both pre-test and post-test found in the part of the tests that requires analyzing skills, respectively the means are 7.76 and 8.78. This meant that students have better analyzing skills compared to evaluating and creating. On the other hand, the least mean for both pre-test and post-test are for creating which tallied means of 5.44 and 7.20 respectively. The results show that the means are in order of the levels of Bloom's taxonomy as it is like other taxonomies, wherein the levels are hierarchical; meaning that learning at the higher levels is dependent on having attained prerequisite knowledge and skills at lower levels [20]. Since most of the students have beginning competency for analysis, it must be expected that there are lower

averages when moving farther up Bloom's pyramid. It is harder for those who have beginning competencies in analyzing to get a higher score for both evaluating and creating, because respondents do not have the competencies yet to grasp higher order thinking skills after analysis. This meant that the higher their analyzing skills the higher would their evaluating skills will be, and the higher their evaluating skills then the higher their creating skills will be. This table only highlights a more aggressive approach by teachers to develop HOTS.

On the other hand, results also show that the significant differences of the pre-test and post-test scores for analyzing, evaluating, and creating are all significant. For analyzing the difference of means is 1.02, for evaluating the difference of means is 1.74, and lastly for creating the difference of means are 1.76. This meant that the teacher's use of differentiated instruction has improved the scores and performance of students when they took the post-test. More importantly, this data proves that DI significantly improves the students' higher order thinking skills. Therefore, the H01 should be reected in all levels [23][24][26].

IV. Conclusion and Recommendations

This research concludes that students lack developed higher order thinking skills, particularly in analyzing, which hinders their ability to achieve higher levels of thinking. However, teaching Understanding Culture Society and Politics using differentiated instruction shows promise in improving students' higher order thinking skills, as evidenced by significant improvements in post-test scores. The rejection of the null hypothesis further supports the effectiveness of differentiated instruction.

Based on these findings, recommendations include students focusing on developing their analyzing, evaluating, and creating skills, and exploring their interests and learning styles. Teachers should ensure proper execution of differentiated instruction, integrating a variety of activities that promote higher order thinking. School administrators should provide training and actively promote differentiated instruction. Future research should include experiments in multiple classes and a larger sample size for increased validity and statistical power.

The research has practical implications for teachers, students, and school administrators, providing guidance on improving teaching practices and promoting student engagement. The findings can be applied to various subjects and grade levels, and further research can explore specific strategies within differentiated instruction. Ultimately, this work contributes to enhancing education and preparing students for a rapidly changing world.

V. APPENDIX

APPENDIX A
LETTER TO THE SCHOOL HEAD

ALVIN J. SABIDO
Principal I
San Isidro Integrated National High School
San Isidro, Lipa City

Sir:
Greetings!

I am a graduate student from Laguna State Polytechnic University in San Pablo, Laguna City, writing my thesis with the title **"DIFFERENTIATED INSTRUCTION IN UNDERSTANDING CULTURE, SOCIETY AND POLITICS FOR HIGHER ORDER THINKING SKILLS OF GRADE 12 STUDENTS"** that aims out to find whether the utilization of differentiated instruction helps in improving the higher order thinking skills of Grade 12 students taking Understanding Culture, Society and Politics.

In lieu of this, I would like to seek permission from your good office to allow me to gather data for my study. Attached herewith is the approved questionnaire to be used by the Grade 12 students as the respondents of the study. Rest assured that the responses will be treated properly with confidentiality in order to come up with the beneficial output.

Thank you very much and Godspeed.

Respectfully yours,

AIDA B. BALITA
Researcher

Noted:

NELIA T. SALVADOR, EdD
Adviser

Approved:

ALVIN J. SABIDO
School Principal

APPENDIX B
LETTER TO THE RESPONDENTS

Dear Respondents,

Greetings!

The undersigned is currently conducting a thesis entitled “DIFFERENTIATED INSTRUCTION IN UNDERSTANDING CULTURE, SOCIETY AND POLITICS FOR HIGHER ORDER THINKING SKILLS OF GRADE 12 STUDENTS”

In connection with this, I would like to ask for your time and help to answer the questionnaires. Rest assured that the result will be treated with utmost confidentiality and would be used only for academic purposes.

Thank you for your time and cooperation.

Respectfully yours,
AIDA B. BALITA
Researcher

Noted:
NELIA T. SALVADOR, Ed. D.
Adviser

APPENDIX C
LETTER OF REQUEST TO THE DEAN

EDILBERTO Z. ANDAL, Ed. D.
Dean- Graduate Studies and Applied Research
Laguna State Polytechnic University

Sir:
The undersigned researcher had defended her thesis proposal last August 17, 2022 entitled "Differentiated Instruction in Understanding Culture, Society and Politics for Higher Order Thinking Skills of Grade 12 Students".
In connection with this, I am humbly asking the consent of your good office to let me use the attached questionnaire as the main instrument in the conduct of my study. Rest assured that all the corrections, suggestions and recommendations of the panel of the examiners will be incorporated in the final draft of the stated instrument.Thank you very much.
Respectfully yours,

AIDA B. BALITA
Researcher
Recommending Approval:

NELIA T. SALVADOR, EdD
Adviser

EDNA O. BRIONES, EdD
Subject Specialist
Approved by:

APPENDIX D

LETTER OF REQUEST FOR VALIDATION OF THE INSTRUMENT

Sir/ Madam:

Greetings!

I am currently conducting a study entitled “DIFFERENTIATED INSTRUCTION IN UNDERSTANDING CULTURE, SOCIETY AND POLITICS FOR HIGHER ORDER THINKING SKILLS OF GRADE 12 STUDENTS”

With your expertise, I am humbly asking you to validate the attached questionnaire before administering it to the participants of the study. Your suggestions and recommendations are extremely appreciated for the enhancement of this instrument.

Thank you very much.

Respectfully yours,

AIDA B. BALITA
Researcher

Noted:

NELIA T. SALVADOR, EdD
Adviser

APPENDIX E
INSTRUMENT VALIDATORS

ALYSSA RIA O. OLIVA
Social Studies Teacher
MELLANIE RUSIA CORACHEA
English/ Research Teacher

ARNEL C. LUCING, PhD
Head Teacher I- English

APPENDIX F
PRE-TEST AND POST-TEST IN UNDERSTANDING CULTURE, SOCIETY, AND POLITICS
SY: 2022-2023

Week 3 – Cultural Relativism and Ethnocentrism

Directions: Multiple Choice. Read each statement carefully. Choose the best answer from the options below.

A1. Which aspect of culture is shown in the example below?
In the United States, a dozen roses are a symbol of romantic love, while in Russia even-numbered flowers are only for funerals and odd-numbered bouquets are for every other occasion.
A. Social Organizations
B. Religion
C. Values, beliefs, and traditions
D. Economic systems

A2. Which aspect of culture is shown in the example below?
Kapitan Maher is the incumbent Mayor of the City of Amin-Amin. His son, Lawrence is currently running for the congressional seat of the district.
A. Social Organizations
B. Religion
C. Values, beliefs, and traditions
D. Economic systems

A3. Which aspect of culture is shown in the example below?
"What most astonishes foreigners in the Philippines is that this is a country, perhaps the only one in the world, where people buy and sell one stick of cigarette, half a head of garlic, a dab of pomade, part of the contents of a can or bottle, one single egg, one single banana." – Nick Joaquin
A. Social Organizations
B. Religion
C. Values, beliefs, and traditions
D. Economic systems

E1. What cultural view supports Milca's claims in the scenario below?
Joane, Milca's cousin, was accustomed to wearing short skirts and dresses in the U.S. But when in India, Milca claims that Joane should not wear these clothes because these are for people with loose characters.
A. Cultural Relativism C. Ethnocentrism
B. Enculturation D. Xenocentrism

E2. What cultural view supports Milca's claims in the scenario below?

Filipinos just like its Southeast Asian neighbors prefer Western chocolate brands such as Toblerone, Maltesers and Ferrero Rocher other than local brands like Chocnut, Flat Tops, and Curly Tops.

A.Cultural Relativism C. Ethnocentrism
B. Enculturation D. Xenocentrism

E3. What cultural view supports Milca's claims in the scenario below?

Joane, Milca's cousin, was accustomed to wearing short skirts and dresses in the U.S. But when in India, Milca claims that Joane should not wear these clothes because these are for people with loose characters.

A.Cultural Relativism C. Ethnocentrism
B. Enculturation D. Xenocentrism

C1. Which of the options below is the best solution to the problems described in the scenario below?

Mike, a P.E. teacher, noticed that none of his students are aware of traditional Philippine games and sports such as luksong baka, patintero, piko, and tumbang preso. This alarmed teacher Mike since he advocates the games as part of Filipino Intangible Cultural Heritage (ICH). Teacher Mike has discovered that his student's would rather play mobile games than traditional Philippine games and sports. What should teacher Mike propose to develop his students' awareness?

A. Make his students play traditional Philippine games and sports
B. Make traditional Philippine games and sports versions available in mobile games
C. Phrohibit students from playing mobile games
D. None of the above

C2. Which of the options below is the best solution to the problems described in the scenario below?

You joined a field trip sponsored by your school and visited a Maranao village. As part of the program, the Maranao people performed the Darangen which celebrates episodes from Maranao history and the tribulations of mythical heroes. In addition to having a compelling narrative content, the epic explores the underlying themes of life and death, courtship, love and politics through symbol, metaphor, irony and satire. You saw your classmate beside you laughing at the sight of the performance and a few minutes later you saw him being escorted out and apprehended by your teachers. What do you think should be proposed to prevent this from happening again?

A. Orient students of cultural differences, appreciation, and sensitivity
B. Brief students of the do's and don'ts when in field trips
C. Ask students to conform to the cultures of the Maranao people
D. None of the above

C3. Which of the options below is the best solution to the problems described in the scenario below?

In 2019, an unmarked 243-year old watch tower in Maasin, Leyte was almost torn down for a road-widening project. In 2018, a parish priest for was arrested for the unauthorized renovation of a Spanish-era convent that was declared an Important Cultural Property. Cultural heritage sites marked or unmarked are almost destroyed or actually demolished even amidst the presence of laws protecting sites.. Can you offer more solutions to protect these sites?

A. Mark all cultural heritage sites
B. Ask local authorities to protect their own cultural structures
C. Disseminate local information and stories of historical sites
D. None of the above

C4. Which of the options below is the best solution to the problems described in the scenario below?

Joana knows all of Taylor Swift's songs, its lyrics, her albums, and all her stories. In her Filipino class, she was asked to give the three main forms of Filipino folk songs, and she failed. At home, Joana searched the web and discovered that she has been singing songs with the traditional Filipino folk songs without being aware of its form. What should be proposed to make students like Joana be aware of these forms?

A. Teach the forms of traditional Filipino folk songs at schools
B. Make students sing songs the different forms of traditional Filipino folk songs at schools

C. Phrohibit students listening
D. None of the above

PRE-TEST AND POST-TEST IN UNDERSTANDING CULTURE, SOCIETY, AND POLITICS
SY: 2022-2023

Week 4 – Significance of Cultural, Social, Political, and Economic Symbols and Practices

Directions: Multiple Choice. Read each statement carefully. Choose the best answer from the options below.

A1. What early stage of cultural evolution did the event below occur?
Humans had no permanent settlement and moves from one place to another.
A. Age of Bronze C. Age of Copper
B. Neolithic Period D. Paleolithic Period

A2. Which among the choices below correctly fills the analogy below?
Neolithic age is to permanent settlements; as Paleolithic age is to _____.
A. Nomadic C. Sea-dwellers
B. Tribal D. None of the above

A3. Which among the statement most accurately describes how geography affected the growth of ancient civilizations of Egypt and Mesopotamia?
A. Large deserts provided many mineral deposits.
B. Access to Atlantic Ocean provided routes.
C. River valleys provided rich soil to grow plentiful crops.
D. Large Savannah areas provided protection from invaders.

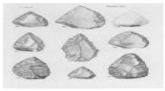
E1. Which type of government systems is described in the scenario below
Elizabeth reigned for 70 years in United Kingdom. Elizabeth has a son named Charles who is the first in line to the throne. Charles has two sons, William and Harry. The former is second in line in UK's throne.
A. Monarchy C. Democracy
B. Authoritarianism D. Communism

E2. Which type of government systems is described in the scenario below?
More than 65.7 million registered voters in the Philippines were invited to cast their vote for the national and local elections on 9 May 2022. The Asian Network for Free Elections (ANFREL) deployed election observation teams across the country to monitor the electoral process
A. Monarchy C. Democracy
B. Authoritarianism D. Dictatorship

E3. Which type of government systems is described in the scenario below?
Kim Jong-Un is characterized by a ruthless consolidation of power and the sharp acceleration of Korea's nuclear weapons program. In December 2013 Kim executed his uncle Jang Song-Thaek, saying that he had removed him from the KWP.
A. Monarchy C. Democracy
B. Authoritarianism D. Dictatorship

E4. Which type of democracy is described in the scenario below?
According to the 1987 Constitution of the Philippines, legislative power shall be vested in the Congress of the Philippines, which can enact and votes on laws. This Senate shall be composed of twenty-four Senators who shall be elected at large by the qualified voters of the Philippines, as may be provided by law.
A. Pure democracy C. Indirect democracy
B. Direct democracy D. Constitutional democracy

C1. What should your drawing look like if you are asked to create a hunting tool in the Neolithic period?

A. 
C 
B. 
D. 

C2. What should your drawing look like if you are asked to create a hunting tool in the Paleolithic period?

A. 
C. 
B. 
D. 

C3. What should your drawing look like if you are asked to create an editorial cartoon about democracy?

A. 
C. 
B. 
D. 

PRE-TEST AND POST-TEST IN UNDERSTANDING CULTURE, SOCIETY, AND POLITICS
SY: 2022-2023
Week 5 – Socialization

Directions: Multiple Choice. Read each statement carefully. Choose the best answer from the options below.

A1. Enculturation exists as one adapts or obtains behaviors and beliefs from different initiators of this process. Which of the following figures play a vital role in developing personal identity in children?

A. Friends
B. Parents
C. Other members of the society relatives
D. Relatives

A2. Throughout our life, we have this group of people that guide us in socialization and teach us to interact with other people. Who is this?

A. Church group C. Peer group
B. Playmates D. Teacher

A3. At this age of modern technology, a new agent of socialization has influenced people both young and old. The influence of this agent is both good and bad. This is why our family and friends play an important role in managing the influence of this agent. What agent of socialization is this?

A. Community C. Church
B. Friends D. Social media

A4. This is the place where a person is enculturated through immersing himself or herself in serving others with the help of other individuals. We are all part of a that would help us understand our own cultural and values orientation.

A. Church C. Community
B. Government D. Social media

E1. Through socialization we learn some ways of behaving. Which of the choices is normally learned during socialization?

A. We learn discriminatory attitude.

B. We learn to isolate ourselves from people.
C. We learn that culture is the same in all societies.
D. We learn our culture's norms and the roles expected of us.

E2. What is the importance of enculturation to the development of one's self?
A. Being enculturated makes a person appreciate other's beliefs and traditions.
B. Through enculturation, a person tends to accept and practice different cultures.
C. Acquiring one's own culture helps an individual to discover problems in the society.
D. As the person learns his/her culture, he/she becomes functional member of the society.

E3. Which is NOT considered as a Tangible Cultural Heritage?
A. Dambana ng Kagitingan in Mount Samat
B. Taal lake and volcano
C. Parada ng Lechon of Balayan
D. None of the above

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