

## RESULTS AND DISCUSSION

This chapter presents the results of the study in the sequence of the statement of the problem. The discussion includes the presentation, analysis, and interpretation of the data from the respondents using the methods discussed in the previous chapter.

### 1. What is the level of satisfaction of Junior High School, Senior High School, and College Students in terms of Tangibility, Reliability, Responsiveness, Assurance, and Empathy?

Table 1.

Respondents' level of satisfaction in terms of Tangibility

<b>Tangibility</b>	<b>Weighted Mean</b>	<b>Verbal Interpretation</b>
Provides quality instructional delivery and materials that address multiple intelligence aligned with the institution's Philosophy, Vision, Mission, Goals, Objectives, and Core Values.	4.00	Very Satisfactory
Maintains proper dress code and grooming of teachers.	4.19	Very Satisfactory
Manages the virtual classroom platform, clear and comfortable workspace free of distractions, and provides the appropriate equipment for the delivery of instructions.	3.94	Very Satisfactory
Overall Weighted Mean	4.04	Very Satisfactory

Table 2 exhibited the respondents' evaluation in terms of tangibility. According to results, the students are satisfied because their instructors deliver high-quality training and resources that target different intelligences in accordance with the institution's PVMGOCV. Maintains a professional appearance and grooming for instructors. Manages the virtual classroom platform, maintains a clear and distraction-free workstation and supplies the necessary equipment for instruction delivery with weighted means of 4.00, 4.19, and 3.94.

Table 2.

## Respondents' level of satisfaction in terms of Reliability

<b>Reliability</b>	<b>Weighted Mean</b>	<b>Verbal Interpretation</b>
Implements and follows the Department of Education and Commission on Higher Education curriculum standards and competencies.	4.21	Very Satisfactory
Delivers quality instructions and assures continuous education and learning opportunities for students.	4.06	Very Satisfactory
Provides creative, flexible assessment in the new normal in multiple modalities, and assures the fairness of the grading system and monitoring of records.	3.99	Very Satisfactory
Overall Weighted Mean	4.09	Very Satisfactory

Table 2 shows the respondents' evaluation in terms of reliability. According to the results, all three questions were received very satisfactorily. The students are very satisfied with the implementation of DepEd and CHED curriculum standard and competencies; the academic affairs also give quality instruction; and provides an innovative, flexible evaluation in the new normal using a variety of modalities, while ensuring the fairness of the grading system and record-keeping with weighted means of 4.21, 4.06, and 3.99.

Table 3.

## Respondents' level of satisfaction in terms of Responsiveness

<b>Responsiveness</b>	<b>Weighted Mean</b>	<b>Verbal Interpretation</b>
Addresses the concerns of the students in real-time to build connection, motivation, and student engagement, and offline through phone calls, messenger apps, Facebook pages, and other social media platforms.	3.95	Very Satisfactory

Exercises due to considerations and reaches out to students to close student achievement gaps.	3.93	Very Satisfactory
Helps students set and achieve academic goals, acquire relevant information and services to make responsible decisions for their future.	4.04	Very Satisfactory
Overall Weighted Mean	3.97	Very Satisfactory

Table 3 indicates the respondents' rating in terms of responsiveness. Based on the results, the faculty responds to students' issues in real-time to foster connection, inspiration, and engagement, as well as offline via phone calls, messenger apps, Facebook pages, and other social media platforms. Adheres to due process and seeks out to kids to close achievement gaps. Assists students in setting and achieving academic goals, acquiring pertinent information and resources, and making responsible future choices. with weighted means of 3.95, 3.93, and 4.04.

Table 4.

Respondents' level of satisfaction in terms of Assurance

<b>Assurance</b>	<b>Weighted Mean</b>	<b>Verbal Interpretation</b>
Provides conscientious actions and interventions to identify and remove obstacles that hinder students' academic progress.	3.86	Very Satisfactory
Organizes extra-curricular activities to address and develop students' 21st Century skills, talents, volunteerism, and other passions beyond the classroom.	3.87	Very Satisfactory
Supports continuing education and professional development of faculties to improve their skills, deepen their knowledge, and innovative approach to teaching.	4.09	Very Satisfactory
Overall Weighted Mean	3.94	Very Satisfactory

Table 4 states the respondents' rating in terms of Assurance. The result shows the students are also satisfied with their schools' conscientious efforts and interventions to identify and remove barriers to academic development for pupils. Extracurricular activities are organized to address and develop students' 21st Century skills, talents, volunteerism, and other passions outside of the classroom. Supports faculty development and ongoing education to enhance their abilities, breadth of knowledge, and innovative approach to teaching with weighted means.3.86, 3.87, and 4.09.

Table 5.

Respondents' level of satisfaction in terms of Empathy

<b>Empathy</b>	<b>Weighted Mean</b>	<b>Verbal Interpretation</b>
Observe positive student-teacher relationships for a more comfortable and safer classroom environment.	4.02	Very Satisfactory
Advises students on their academic path, encourages them to make the most of their learning experience, and develops a leader out of them.	4.04	Very Satisfactory
Establishes positive parent-teacher relationships as a support system to students, especially during their distance learning.	3.80	Very Satisfactory
Overall Weighted Mean	3.95	Very Satisfactory

Table 5 shows the respondents' evaluation in terms of Empathy. The result says that all three questions received very satisfactory. The students are very satisfied because the school maintains a favorable student-teacher relationship to create a more comfortable and secure learning environment. Advises students on their academic route, encourages them to maximize their learning experience, and helps them develop into leaders. Establishes a healthy parent-teacher relationship

to serve as a support structure for pupils, particularly those enrolled in distance education with weighted means of 4.21, 4.06, and 3.99.

**2. What is the sentiment analysis of the sentiments of the students in Flexible Learning Setup using Lexicon-based approach and Machine learning-based approach?**

Table 6.

Lexicon-based approach sentiment analysis result

<b>Sentiment Analysis Result</b>	<b>frequency</b>	<b>Percentage</b>
Negative	49	29.34%
Neutral	19	11.38%
Positive	99	59.28%

Table 6 shows the result of the sentiment analysis using the lexicon-based approach. It was illustrated that more students have positive experiences in flexible learning with 59.28%. There are negative words that expressed negative sentiments with 29.34%. And 11.38% neutral, perhaps, the words they used cannot be classified by positive nor negative.

Table 7.

Machine Learning-based approach sentiment analysis result

<b>Sentiment Analysis Result</b>	<b>frequency</b>	<b>Percentage</b>
Negative	49	29.34%
Neutral	21	12.58%
Positive	97	58.08%

Table 7 shows the result of the sentiment analysis using the machine learning-based approach. The results were almost the same as the lexicon-based approach. It was illustrated that more students have positive experiences in flexible

learning with 58.08%. There are negative words that expressed negative sentiments with 29.34%. And 12.58% neutral, perhaps, the classification classifies these words are neutral based on the trained features.

### 3. Is there a significant difference between the sentiment analysis result of the Support Vector Machine and the Lexicon-based approach?

Table 8.

Fisher's Exact Test Result using SPSS

Chi-Square Tests				
	Value	df	Asymptotic Significance (2- sided)	Exact Sig. (2- sided)
Pearson Chi-Square	285.881 <sup>a</sup>	4	.000	.000
Likelihood Ratio	243.746	4	.000	.000
Fisher's Exact Test	229.855			.000
N of Valid Cases	167			

a. 1 cell (11.1%) have an expected count of less than 5. The minimum expected count is 2.39.

As the result of the Fisher's exact test from the lexicon-based approach and machine learning-based approach using SVM, the computed p-value of Fisher's exact test is .000 which is lower than the 0.05 level of significance, hence, the result is statistically no significant difference between the machine learning-based approach and lexicon-based approach.

### Is there a significant relationship between the level of satisfaction of the students and the sentiment analysis result?

Table 8.

Pearson Chi-Square Test Result using SPSS

### Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	113.615 <sup>a</sup>	80	.008
Likelihood Ratio	116.750	80	.005
N of Valid Cases	167		

a. 121 cells (98.4%) have an expected count of less than 5. The minimum expected count is .11.

Table 8 shows the result of the Pearson Chi-Square test using SPSS. The computed p-value of the Pearson Chi-Square Test is .008 which is lower than the 0.05 level of significance, hence, the result shows that statistically, the level of satisfaction of the students to their respective academic affairs has a significant relationship to their sentiments classified by the lexicon-based approach. Since table 8 shows that lexicon-based and machine learning-based approach does not have a significant difference; if the level of satisfaction will be compared to the sentiment analysis result, then the test will yield the same result.