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PERCEIVED LEARNING SATISFACTION ON DIVERSE INSTRUCTIONAL MODALITIES ENCOUNTERED BY CEBU DOCTORS' UNIVERSITY LEVEL III AND LEVEL IV MEDICAL STUDENTS OF A.Y. 2023–2024

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Abstract: This study investigates perceived learning satisfaction among medical students across three instructional modalities—face-to-face, online, and blended learning—at Cebu Doctors' University (CDU) during Academic Year 2023–2024. The hypothesis posits significant differences in satisfaction levels, with face-to-face learning expected to yield the highest satisfaction. Participants included 145 verified and enrolled Level III and Level IV medical students, including irregular students, who had experienced all three modalities: face-to-face (A.Y. 2023–2024), online (A.Y. 2021–2022), and blended learning (A.Y. 2022–2023). A descriptive-comparative research design was employed to compare perceived learning satisfaction across the three instructional approaches. Data were collected using a modified version of the Student Outcomes Survey from the National Center for Vocational Education Research in Australia, covering three domains: Teaching, Assessment, and Clinical Skills & Learning Experiences. The instrument demonstrated excellent reliability (Cronbach's alpha = 0.97). Results showed that face-to-face learning had the highest overall satisfaction (M = 4.3, SD = 0.5), followed by blended learning (M = 4.3, SD = 0.5), and lastly, online learning (M = 3.8, SD = 0.7). A One-Way Repeated-Measures ANOVA with Greenhouse-Geisser correction revealed a significant difference in satisfaction across modalities, $F(1.328, 191.192) = 75.267$, $p < .05$, $\eta^2 = 34.3\%$. The Teaching domain received the highest ratings across all modalities, while Assessment domain and Clinical Skills & Learning Experiences domain received the lowest ratings in online learning. The findings suggest that face-to-face learning provides the highest level of student satisfaction, followed by blended and online learning. This hierarchy underscores the value of direct interaction in enhancing student satisfaction. The study recommends that educational institutions prioritize face-to-face and blended learning to optimize student outcomes, while future research should explore strategies to improve online learning satisfaction, particularly in the areas of Assessment and Clinical Skills & Learning Experiences.

Keywords: Medical education instructional modalities, medical students learning satisfaction, medical education teaching assessment, clinical skills and learning experiences

I. INTRODUCTION

Students' satisfaction with their learning experiences, contrary to the popular notion, is not simply related to the feelings they have about the quality of the education they receive. Within the higher education (HE) setting, high levels of student satisfaction have also been linked to the attainment of important learning outcomes in HE—academic achievement, retention, and student motivation (Aldridge & Rowley, 1998; Duque, 2014; Mihanović et al., 2016; Nastasić et al., 2019, as cited in Wong & Chapman, 2023).

The instructional modalities employed at Cebu Doctors' University (CDU) have varied over the past few years in response to the COVID-19 pandemic. As a result, medical students enrolled during this transitional period have experienced instructional modalities ranging from face-to-face, to online, to blended learning. The type of instructional modality greatly influences students' learning satisfaction, which is an indicator of the effectiveness of the curriculum.

As such, student satisfaction matters both before and after graduation, as it becomes one of the drivers affecting current and future quality of life, and impacts the professional path. As universities continue to adapt to an evolving educational landscape, it is essential to consider the students' experiences with each instructional modality. In HE, student satisfaction is vital for both the success of institutions and the students, particularly in the current global advancing climate. Rapid technological advancements, in particular, have intensified competition in the HE sector in recent years (Wong & Chapman, 2023).

Thus, the Cebu Doctors' University College of Medicine (CDU-CM) Level III and Level IV students' feedback on their learning satisfaction for each instructional modality gathered from this research study provides insights that can guide future decisions on the most effective instructional modality to implement by combining the strengths of each modality, lessening their weaknesses.

This study was specifically inclined to the CDU's research agenda on Continuing Professional Education and Development consistent with CDU-CM's Research Center for Medical Education, specifically, Curriculum Development. It focuses on determining the overall perceived level of learning satisfaction among the Level III and Level IV medical students for each instructional modality (face-to-face learning, online learning, blended learning), the perceived learning satisfaction in terms of each domain–Teaching, Assessment, Clinical Skills & Learning Experiences, and Overall Satisfaction with the Training. It also determines a significant difference in the overall perceived learning satisfaction among the Level III and Level IV medical students across the diverse instructional modalities to provide a basis for improvement in the aforementioned domains.

As this study sheds light on the recognition that student satisfaction is a multidimensional construct (Wong & Chapman, 2023) that contributes to students' overall satisfaction levels, the perceived learning satisfaction of Level III and IV medical students can serve as a crucial index of the performance of CDU-CM through the three aforementioned domains—Teaching, Assessment, and Clinical Skills & Learning Experiences.

This study determined the students' learning satisfaction with each instructional modality implemented thus, providing implications on the effectiveness of each modality as well as serving as a basis for improvement, guiding future medical education implementation in CDU-CM.

II. METHODOLOGY

The study utilized an analytical comparative research design, which involves using the results to distinguish the similarities and differences of the study variables. The study was conducted at Cebu Doctors' University located in North Reclamation, Mandaue City, Cebu, Philippines.

The study was reviewed and approved by the Cebu Doctors' University-Institutional Ethics Review Committee (CDU-IERC) to ensure that the rights, dignity, and well-being of the research respondents were protected as well as to ensure compliance with CDU-IERC guidelines.

The respondents for the study consisted of 181 verified and enrolled Level III and Level IV students of CDU-CM for Academic Year 2023–2024, including irregular students, who had undergone all

instructional modalities implemented by the university, namely face-to-face (AY 2023–2024), blended (AY 2022–2023), and online (AY 2021–2022) learning. Excluded from the study were students from other academic programs of the Cebu Doctors' University as well as students who had not undergone all three instructional modalities throughout their medical education. There were 44 out of 61 Level III and 101 out of 120 Level IV student participants resulting in an overall response rate of 80.1%. Excluded from the study were those who did not submit a response on or before the deadline set by the researchers. The research instrument used was a screening tool modified with permission from the Student Outcomes Survey developed by Peter Fieger from the National Center for Vocational Education Research in Australia (Fieger, 2012). The researchers added one item to this open-source research instrument that originally consisted of 19 items, for a total of 20 questions, grouped into four dimensions, namely: 1) teaching, 2) assessment, 3) clinical skills & learning experiences, and 4) one summary question to determine the overall satisfaction. Using a 5-item Likert scale (Strongly Disagree to Strongly Agree), the mean scores for each dimension was computed and interpreted as follows: low level of satisfaction (0–1.6), moderate level of satisfaction (1.7–3.3), and high level of satisfaction (3.4–5.0).

Pilot testing of the research instrument was done on 30 Level I and II AY 2023-2024 CDU-CM students with the same characteristics as the prospective research participants, i.e., they encountered face-to-face, blended, and online modalities within a PBL curriculum. With Cronbach's alpha of 0.97, the tool garnered excellent reliability.

Prior to the conduct of the study, transmittal letters for data gathering and pilot testing were approved by the Dean of CDU-CM. Upon approval for implementation by the Institutional Ethics Review Committee (IERC), the AY 2023–2024 CDU-CM Level III and Level IV students were recruited using online Google Forms sent to their email addresses and the CDU Learning Management System CeLo+.

The study gathered only those who signed the informed consent form, confirming that they had encountered all three instructional modalities during their medical education in CDU-CM. The collected data were stored in a Google Drive accessible only to the research team, research mentor, and the statistician. All data were then permanently deleted upon completion of the research.

Data were processed and analyzed using IBM Statistical Package for the Social Sciences (SPSS) version 23.

Means and standard deviations were used to interpret the perceived learning satisfaction of each instructional modality in terms of the following domains: 1) Teaching, 2) Assessment, and 3) Clinical Skills & Learning Experiences. A One-Way Repeated-Measures Analysis of Variance (ANOVA) with Greenhouse-Geisser correction determined the significant difference in the overall mean perceived learning satisfaction score of the Level III and Level IV medical students across the three instructional modalities with a p-value ≤ .05 alpha level considered as statistically significant.

III. RESULTS AND DISCUSSION

Table 1. Descriptive Statistics of Perceived Learning Satisfaction with the Diverse Instructional Modalities among Level III and Level IV CDU-CM Students (*N* = 145)

Level of Perceived Learning Satisfaction	Instructional Modality		
	Face-to-Face	Online	Blended
High	141 (97.2%)	109 (75.2%)	136 (93.8%)
Moderate	4 (2.8%)	36 (24.8%)	9 (6.2%)

Table 1 shows the overall perceived learning satisfaction with the diverse instructional modalities among Level III and Level IV CDU-CM students.

Majority have a high level of perceived learning satisfaction across all three instructional modalities, specifically face-to-face (141, 97.2%), online (109, 75.2%), and blended (136, 93.8%). Face-to-face modality garnered the highest percentage of students reporting high learning satisfaction (97.2%). Kemp and Grieve (2014) suggested that students engaged with this modality achieved deeper learning and received immediate feedback. Additionally, Deslauriers et al. (2019) found that these students felt they learned more in an active classroom setting. These findings comparing face-to-face and blended learning imply that the respondents value more the direct engagement and immediate feedback that come with face-to-face interactions.

Blended learning had the second highest percentage of students reporting high level of learning satisfaction (93.8%). Essa (2023) identified a positive significant correlation between blended learning and the study's variables. However, the study also mentions the importance of teacher training for successful implementation of the blended learning modality, particularly with regard to the use of appropriate technologies by educational institutions. In relation to this finding, since Small Group Discussion (SGD) is the primary teaching-learning strategy at CDU-CM, students are self-directed learners under facilitator supervision. Thus, their perceived learning satisfaction is likely influenced by factors such as teacher training or facilitator style per module.

Online learning had the lowest percentage of students reporting a high level of learning satisfaction (75.2%) with a relatively large percentage of respondents reporting a moderate level of learning satisfaction (24.8%). These findings align with the study by Li et al. (2023) which showed that students expressed a neutral attitude towards their online experience, stating it was neither better nor more challenging.

A large proportion of students were moderately satisfied with online learning (36, 24.8%), which may suggest that while online learning may have been effective to many, there are still areas that can be improved to further enhance the experience for all the students involved, such as better support and communication with instructors and implementing more interactive and engaging content.

None of the respondents had low perceived learning satisfaction with any of the three instructional modalities, which may imply that the implementation of the modalities presented were sufficient and adaptable for the students.

Table 2. Perceived Learning Satisfaction with the Diverse Instructional Modalities per Domain among Level III and Level IV CDU-CM Students

Perceived Learning Satisfaction	Instructional Modality, *M* (SD)		
	Face-to-Face	**Online**	**Blended**
Teaching	4.4 (0.5)	4.1 (0.6)	4.2 (0.6)
Assessment	4.1 (0.7)	3.9 (0.7)	4.0 (0.7)
Clinical Skills & Experiences	4.4 (0.5)	3.7 (0.9)	4.0 (0.6)
Overall Satisfaction with the Instructional Modalities	4.3 (0.8)	3.6 (1.0)	3.9 (0.9)
M	**4.3 (0.5)**	**3.8 (0.7)**	**4.1 (0.5)**

Table 2 shows that among the three domains, the teaching domain achieved the highest perceived learning satisfaction in each of the three instructional modalities: face-to-face (*M* = 4.4, *SD* = 0.5) online (*M* = 4.1, *SD* = 0.6), and blended (*M* = 4.2, *SD* = 0.6) modalities among the Level III and Level IV CDU-CM students. This may be due to the consistency of the curriculum content across modalities, leading to the similarity in level of learning satisfaction.

Based on the results, the instructional modality displays a lesser effect on learning satisfaction in the Teaching domain. This can be supported by the Metacognition Theory from Stanton et al. (2021), which states that "student's metacognition" in identifying concepts understand and select appropriate learning strategies to help them regardless of modality. Also, lecture and facilitator evaluation forms are regularly given to students after each module and lecturette, which likely contribute to high teaching performance and high learning satisfaction. These results also imply that CDU-CM is effective in its teaching strategies across all instructional modalities but improvement may be done in the online and blended modalities to match the satisfaction levels with face-to-face modality.

For the Assessment domain, the online modality had the lowest reported learning satisfaction (*M* = 3.9, *SD* = 0.7) which suggests that students experienced difficulties in this domain. As described in the study by Tarazi and Ruiz-Cecilia (2023), students identified the introduction of new platforms as a significant challenge of online learning. The student learning platforms used by CDU-CM, CeLo+ and Google Classroom, were implemented using the online modality and students encountered difficulties and even psychological distress when required to adapt to these new platforms. As suggested by the Happy Productive Student Theory (Cotton et al., 2002 as cited in Pidgeon et al., 2017), students from various universities were required to utilize two devices during examinations, one for the exam questions and the other for proctor monitoring and this requirement further contributed to the decreased level of satisfaction, especially for students with limited resources and economic difficulties (Churchill and Suprenant, 1982 as cited in Fattah, 2016).

The Clinical Skills & Learning Experiences domain follows the same trend as the Assessment domain with the online modality having the lowest reported learning satisfaction (*M* = 3.7, *SD* = 0.9). This result may indicate the importance of physical presence and direct interaction in training medical students, likely explained through the Constructivist Theory which states that students who actively participate tend to build up more knowledge (Kurt, 2021). Active participation is negatively affected in the online modality where students' experiences in clinical skills training are limited by factors such as slow internet speeds and limited interaction with classmates and teachers. In terms of the other instructional modalities, the face-to-face experience exhibits the highest learning satisfaction for the Clinical Skills & Learning Experiences domain. This

could be due to students being able to experience hands-on medical training, effectively building their clinical competence and skills.

The variations in satisfaction levels across domains and modalities indicate that different aspects of the learning experience require tailored improvements and that a general approach may not be effective. It is suggested that improvements be made to the online modality in terms of Assessment by simplifying the online platform procedures and ensuring that all students have access to the necessary resources. It is also suggested that modifications may be made to the manner of conducting clinical skills training and experiences in an online setting, prioritizing the imitation of face-to-face clinical experiences as closely as possible. These adjustments may improve the engagement and thus learning satisfaction in these areas.

Table 3. One-Way Repeated-Measures ANOVA for the Perceived Learning Satisfaction Score of Level III and Level IV CDU-CM Students

Source	*df*	*F* value	*p*-value	Conclusion
Learning Modality	1.328	75.267	0.000	Significant

Table 3 shows that there is a significant difference between each modality pair. The face-to-face modality had a significantly higher mean perceived satisfaction score ($p \leq .05$) than online and blended modalities by 0.445 (*SE* = 0.047, 95% *CI* [0.331, 0.559]) and 0.197 points (*SE* = 0.025, 95% *CI* [0.137, 0.256]), respectively. Moreover, the Level III and Level IV medical students had significantly higher ($p \leq .05$) perceived learning satisfaction with the blended modality compared to the online modality by 0.248 point (*SE* = 0.034, 95% *CI* [0.166, 0.331]).

Table 4. Comparison Using Bonferroni's Post-Hoc Test for Each Instructional Modality Pair

Learning Modality Pair	*M*	*p*-value	Conclusion
Face-to-Face vs. Online	0.445	0.000	Significant
Face-to-Face vs. Blended	0.197	0.000	Significant
Blended vs. Online	0.248	0.000	Significant

Table 4 shows a significant difference has been found among the mean perceived learning satisfaction score of Level III and Level IV medical students among the three instructional modalities, $F(1.328, 191.192) = 75.267$, $p < .05$, $\eta^2 = 34.3\%$. Significance was defined as a p value ≤ 0.05 alpha levels.

The instructional modality that produced the highest perceived level of learning satisfaction and is likely the most effective is the face-to-face modality, leading to better student learning outcomes and higher motivation. This is in line with the findings of the study by Al-Ansari et al. (2022) stating that students prefer face-to-face and blended over online learning.

Overall satisfaction differed the most between face-to-face and online with a 0.445 difference. Blended learning was also significantly higher than online learning by 0.248 points. These results suggest that blended learning should be prioritized in future situations such as during a pandemic during which face-to-face instruction is not an option. It also implies that by doing so, blended learning can maintain the level of student learning satisfaction similar to the face-to-face modality and improve learning satisfaction over the online modality.

IV. CONCLUSION

Based on the findings, there is a significant difference for overall learning satisfaction across the instructional

modalities (face-to-face, online, and blended).

The researchers, however, recommend that further studies be done to consider other factors that may influence learning satisfaction, such as the amount of time the students have during an academic year, the learning resources available to them, and their mental state. The findings of the study could provide valuable insights into what learning modalities should be used by CDU-CM.

References

Deslauriers, L., McCarty, L. S., Miller, K., Callaghan, K., & Kestin, G. (2019). Measuring actual learning versus feeling of learning in response to being actively engaged in the classroom. *Proceedings of the National Academy of Sciences, 116*(39), 19251–19257. https://doi.org/10.1073/pnas.1821936116

Essa, E. K. (2023). The effectiveness of hybrid learning in enhancing academic mindfulness and deeper learning of university students. *International Journal of Research in Education and Science, 9*(1), 188-202. https://doi.org/10.46328/ijres.3081

Fattah, M. E. A. (2016). Academic satisfaction and its relationship to internal locus of control among students of Najran University. *Research on Humanities and Social Sciences, 6*(4), 1-5. http://www.iiste.org/Journals/index.php/RHSS/article/download/28946/29709

Fieger, P. (2012). *Measuring student satisfaction from the Student Outcomes Survey*. National Centre for Vocational Education Research. https://www.ncver.edu.au/ data/assets/file/0018/3582/2492.pdf

Kemp, N., & Grieve, R. (2014). Face-to-face or face-to-screen? Undergraduates' opinions and test performance in classroom vs. online learning. *Frontiers in Psychology, 5*, 1278. https://doi.org/10.3389/fpsyg.2014.01278

Kurt, Dr. S. (2021, February 21). *Constructivist learning theory.* Educational Technology. https://educationaltechnology.net/constructivist-learning- theory/

Li, X., Odhiambo, F. A., & Ocansey, D. K. W. (2023). The effect of students' online learning experience on their satisfaction during the COVID-19 pandemic: The mediating role of preference. *Frontiers in Psychology*, *14*, 1095073. https://doi.org/10.3389/fpsyg.2023.1095073

Pidgeon, A. M., Davies, N. L., & Stapleton, P. (2017). Factors influencing university students' academic experience: An international study. *International Journal of Multidisciplinary Perspectives in Higher Education, 2*(1), 1-8. https://www.academia.edu/116276806/Factors_Influencing_University_Students_Academic_Experience_An_International_Study

Stanton, J. D., Sebesta, A. J., & Dunlosky, J. (2021). Fostering metacognition to support student learning and performance. *CBE—Life Sciences Education, 20*(2). https://doi.org/10.1187/cbe.20-12-0289

Tarazi, A., & Ruiz-Cecilia, R. (2023). Students' perceptions towards the role of online teaching platforms in enhancing online engagement and academic performance levels in Palestinian Higher Education Institutions. *Education Sciences, 13*(5), 449. https://doi.org/10.3390/educsci13050449

Wong, W. H., & Chapman, E. (2023). Student satisfaction and interaction in higher education. *Higher Education, 85*(5), 957–978. https://doi.org/10.1007/s10734-022-00874-0