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Balancing Autonomy, Involvement, and Teacher Support for Student Learning Development: A Theory

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Abstract

Graduate employability is a vital benchmark of This study emphasizes information acquisition, learning styles, instructor tactics, and motivation. It examines senior high school students' experiences at Mayamot National High School with both modular and in-person scientific instruction. Using qualitative research and student interviews, it investigates the advantages and disadvantages of both learning modalities. Results show that in-person training improves social interaction, engagement, and information retention through peer cooperation, practical exercises, and real-time teacher support. On the other hand, whereas modular learning provides flexibility, it also has drawbacks, including less motivation, less interaction, and less teacher direction. Some self-directed learners found it difficult to adjust to modular learning without organized assistance, while others did well.

The study presents the Learning Modality Integration Theory, which promotes a well-rounded strategy that balances student autonomy and teacher support to address these issues. This theory backs a blended learning framework that preserves active learning methods in in-person instruction while incorporating interactive multimedia, structured feedback, and collaborative strategies from modular education.

A hybrid learning strategy in science education is advised to maximize student engagement, academic achievement, and information retention. This study supports a flexible teaching strategy that accommodates various learning requirements, advancing student-centered learning.

Keywords*: Learning modalities, Blended learning, Student engagement, Information retention, Student-centered learning*

Introduction

Though education is essential for both individual and community development, the way it is delivered has changed significantly in response to worldwide issues. In the context of the Philippine educational system, schools and other learning institutions swiftly transitioned to modular learning instruction as an alternative method for fulfilling academic requirements. This technique sought to close the learning gap by ensuring that students could continue their education even in the absence of in-person classes. Flexible instruction allowed students to remain engaged in their studies, giving them the independence to further their understanding and expertise while still receiving supervision from their

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teachers. The transition from traditional in-person instruction to modular learning has changed how students pursue their schoolwork, adjust to new learning settings, and view their academic careers. Modal education emphasizes autonomy and adaptability but frequently creates recognizing and motivational challenges, whereas in-person classes offer direct interaction, immediate evaluation, and a structured learning environment. Analyzing students' perspectives and experiences in all learning modalities provides the basis for evaluating how well they work, recognizing areas for growth, and improving methods of instruction.

In settings where access to technology and the internet was constrained, the modular approach to learning became a necessary replacement. With the teachers generating self-paced lessons in response to the new normal, modular distance learning emerged as one of the primaries means of delivering education in the Philippines (DepEd, 2020) (R. et al., 2020; M & A, 2022). By providing students with independent, well-structured study resources in both print and digital formats, this approach aimed to close learning gaps.

However, in-person instruction is still a significant component of traditional learning since it allows learners and educators to communicate directly. This method enables practical experimentation, group projects, and instant feedback in disciplines like science that call for problem-solving and real-world application.

Students form different viewpoints based on their experiences with in-person and modular learning. Although modular learning encourages flexibility and self-directed learning, comprehension may be difficult due to the absence of direct teacher assistance. Face-to-face training, on the other hand, promotes engagement, in-person conversations, and group learning all of which help many students understand complex ideas. Students' learning preferences, flexibility, and motivation determine how effective each method is, especially in disciplines like science that call for collaboration and hands-on experience. Lack of peer collaboration and delayed teacher feedback can impair information retention, even though autonomous learners might flourish in modular environments. On the other hand, direct instruction improves group problem-solving and communication, which makes it more useful for classes that demand active engagement.

The way students process information is affected by their many learning preferences, which include kinesthetic, visual, auditory, and reading/writing styles. In-person instruction uses several teaching methods, including lectures, group projects, discussions, and practical exercises, to accommodate different learning styles. Students can interact with classes in ways that best meet their needs in an inclusive learning environment due to their flexibility. On the other hand, flexible learning was created for students who are at ease with reading at their own pace and studying alone. However, it might not work as well for individuals who do better in group and interactive environments.

Both in-person and modular instruction substantially impact students' learning experiences due to teaching strategies and motivation. Modular learning necessitates well-structured materials, frequent tests, and virtual consultations to compensate for the lack of teacher-student connection. Yet, the absence of proactive coaching and real-time feedback may impede tailored learning. Although the lack of immediate help can lower engagement, motivation is also essential because modular learners must be self-disciplined and accountable. On the other hand, in-person instruction promotes a more student-centered approach by enabling teachers to employ dynamic tactics like direct questioning and interactive discussions: peer connection, an organized setting, and immediate teacher assistance improve student motivation and understanding.

As a result, we smoothly switch to modular learning to guarantee continuous knowledge delivery whenever our educational institution experiences severe rain or other weather-related delays. This flexible method allows students to continue their education without significant setbacks, sustaining their engagement and academic achievement despite outside obstacles. We uphold our commitment to delivering accessible and adaptable learning opportunities by introducing modular instruction during such

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disturbances, guaranteeing that students stay on track with their studies regardless of environmental conditions.

Statement of the Problem

This study explored students' experiences and perspectives in science class utilizing modular and face-to-face learning modalities.

Specifically, it sought to achieve the following:

1. What are the experiences of students in modular and face-to-face learning modality according to:
   1.1. knowledge gain;
   1.2. learning style;
   1.3. teacher strategies; and
   1.4. motivation?
2. What are the perceptions of students in modular and face-to-face learning modality according to:
   2.1 knowledge gain;
   2.2. learning style;
   2.3. teacher strategies; and
   2.4. motivation?
3. Based on the findings of the study, what instructional model can be developed?

Research Design

The study used a qualitative research approach to gain theoretical knowledge of students' experiences and views of in-person and modular learning modes, specifically applying G&S (1967) Grounded Theory. This study is a good fit for grounded theory since it enables the methodical gathering and examination of data, which produces themes and patterns that help to explain the students' experiences. This method creates a conceptual framework based on participant viewpoints through iterative data gathering and ongoing comparison.

The study also used thematic analysis, a method that not only systematically identifies, examines, and evaluates recurrent themes in the students' responses but also is highly constructive in qualitative research. It offers a methodical but adaptable way to explore participants' lived experiences, adding significant value to the research process. Key themes about academic achievement, motivation, student engagement, and difficulties in both learning modalities were found by classifying and coding the responses. This dual methodological approach allowed for developing theories based on empirical data, ensuring a comprehensive investigation of students' experiences.

Research Participants

In the study "Experiences and Perceptions of Students in Science Classes Implementing Flexible and in-person Instruction Modalities," a group of STEM students in grade 11 who had taken scientific classes that included in-person and online instruction participated. Eleven individuals were chosen to provide their varied perspectives on their experiences learning in physics, biology, chemistry, and general science, among other science-related fields.

Because they had direct experience with both teaching modes, these students were selected to offer their perspectives and difficulties. Their ability to adapt to various teaching modalities was further demonstrated by their learning environment, which required them to switch to modular instruction during weather disturbances. The participants offered insightful opinions on the advantages and disadvantages of face-to-face learning, which entails direct communication with peers and teachers, and modular learning, which is self-paced and frequently carried out remotely.

Sampling Technique

Purposive sampling, especially criterion sampling, was used in the study as the best method for choosing participants. This strategy fits with the qualitative phenomenological aspect of the study, which uses both modular and in-person learning modalities to investigate the experiences and perceptions of STEM students in grade 11 science classes.

Purposeful sampling is used in qualitative research to choose participants who can offer rich, pertinent, and perceptive information about the phenomenon being studied. Selecting participants who have experienced both learning modalities is crucial because the study is about students' experiences, and they can offer valuable insights.

Criterion sampling is a kind of purposive selection that chooses participants according to predetermined standards pertinent to the research. In this instance, the requirements were Grade 11 STEM students receiving in-person and modular science education. Participants also needed to be open to sharing their thoughts and observations about their educational experiences during interviews.

Research Instrument

An informed Consent Form and an Interview Questionnaire were the two main research tools used in the study, serving as a robust framework for a thorough and organized data collection procedure. Utilizing both modular and in-person learning modes, these tools were meticulously crafted to safeguard ethical considerations, gather essential demographic information, and enable a comprehensive investigation of the participants' experiences and perceptions of science classes.

The Informed Consent Form was meticulously crafted to ensure that every participant was fully informed about the nature, goal, and extent of the research before they decided to participate. It included a wealth of details about the study's objectives, the voluntary nature of participation, confidentiality protocols, potential risks, and expected benefits. The firm also reassured volunteers that they could withdraw from the study without any negative consequences. Furthermore, it outlined how data confidentiality would be maintained, ensuring that no personally identifying information would be disclosed in any publications or reports.

The two main components of the interview questionnaire served as the principal instrument for collecting data. The first portion, "Respondent Profile," gathered basic demographic data such as the participant's age, gender, grade level, and parents' educational background. This section preserved anonymity while contextualizing comments, even though giving their name was optional. The open-ended questions in the second section, "Interview Questions," were intended to extract in-depth information on students' experiences and opinions of in-person and modular scientific instruction.

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The open-ended interview allowed participants to express their opinions freely, yielding a wealth of qualitative data for the study. The recording and secure storage of the answers for confidentiality guaranteed the authenticity and dependability of the data gathered.

By integrating these research tools, the study successfully recorded participants' insightful comments and narratives, enabling a more thorough comprehension of their educational experiences in various classroom environments.

Data Analysis

As a qualitative research methodology intended to produce hypotheses directly from empirical data, grounded theory is especially well-suited for investigating complicated phenomena such as students' experiences in in-person and modular learning. BG & AS created this method and emphasized inductive reasoning. Instead of depending on pre-existing frameworks or assumptions, ideas develop naturally from data collection and analysis.
The coding process, a cornerstone of qualitative research, is a journey of discovery that turns raw data into meaningful insights. It consists of two main steps: initial coding and focus selective coding. As researchers delve into the complex world of qualitative data analysis, a methodical and meticulous approach is essential for uncovering the hidden patterns and themes that underpin human experiences. Initial coding involves methodically organizing data to identify key themes and patterns, often using tools like NVivo or manual methods to classify information meticulously.

Focus-selective coding improves this procedure by focusing on the most critical components associated with the research question. Additionally, the three main stages of the coding process are open coding, which entails first identifying concepts and themes; axial coding, which investigates the connections among these categories; and selective coding, which combines the results into a coherent theory. By navigating these stages, researchers can transform complicated data into deep knowledge, which offers priceless insights into the subtleties of the human experience.

Two main steps of Coding

1. Initial Coding:

The first step in the qualitative data analysis process is initial coding, which includes methodically organizing the raw data to find important themes and patterns. Manual coding and automated coding with software tools are the two primary methods of coding. Researchers can use software tools like NVivo, ATLAS.ti, or NOVIC to help automate the coding process and effectively manage enormous datasets, or they can code manually, which entails meticulously examining and classifying data by hand. However, NOVIC is considered the best tool for automatic coding. The researcher prefers to manually code using the procedures listed below:

A. Systematically Structure the Data: Start by arranging the gathered information in an understandable and standardized manner. For ease of reference, be sure that every word, sentence, or data segment is appropriately labeled or numbered. It could entail giving each area a unique identity and dividing the data into manageable chunks, such as lines or paragraphs.
B. Emphasize Important Phrases and Points: Carefully look at the information and underline any noteworthy quotes, concepts, or findings. Concentrate on documenting key elements directly related to the study's goals, such as participant reflections, recurrent themes, feelings, or behaviors.
C. Produce a Large Number of Points and Codes: Make sure to produce countless codes for each statement, if appropriate. At this phase, try to generate as many points as you need to cover the

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data's richness. Don't restrict your initial code; the objective is to gather a variety of viewpoints and concepts before honing them.\

D. Be Precise and Complete with Notes: Accuracy is essential at this point. Make sure your notes are precise, understandable, and comprehensive.
E. Apply Themes Based on Key Points: Sort the key points identified into relevant groups or themes. These themes represent recurring patterns or shared experiences, which need to be extracted straight from the data.
F. After establishing themes, ensure they adhere to a logical pattern or idea by reviewing and refining them for consistency. Verify the data's consistency and the logical connections between the themes. Refine themes as needed, removing superfluous ones and combining overlapping themes.
G. Combine Similar Themes into Broad Categories: Once unique themes have been identified, combine them into more comprehensive categories.

A comprehensive and well-structured analysis is made possible by this methodical methodology, which also helps guarantee that the themes and patterns identified from the data are significant and appropriately reflect the experiences and viewpoints of the participants.

2. **The second step in the coding process is called Focus Selective Coding.** It emphasizes how crucial it is to ensure that coding practices are transparent, consistent, and in line with the validity and reliability requirements of a qualitative research study (G& S, 1967). This stage entails organizing and fine-tuning the data by concentrating on the most essential components directly related to the research question. Furthermore, to systematically compare data, condense it where needed, and incorporate essential findings into a logical structure, the researcher uses open coding, axial coding, and selective coding. When creating a theory, the researcher uses this coding process.The researcher conducted in-depth interviews to gather data, during which students shared their experiences, challenges, and perspectives on both modular and face-to-face learning modalities. Additionally, group discussions were analyzed to comprehensively understand how different modalities have influenced students' learning engagement, academic achievement, and classroom experiences. This analysis identified key patterns and emerging themes, offering valuable insights into the effectiveness and challenges of these learning modalities.

This phase offers a greater understanding of the difficulties and efficacy of both modular and in-person science instruction by relating the results to previously published works and theoretical frameworks. The result's methodical organization into major themes discovered through data analysis ensures a structured presentation of the student's experiences. With data collection, coding, analysis, and memo writing as its main pillars, the study employs an organized qualitative research methodology.

The three phases of coding

A. Open Coding

The process of open-coding was used after all the data had been collected. The researcher carefully scrutinized the interview transcripts word by word, line by line, and phrase by phrase during this stage. The initial stages of qualitative data analysis include open coding, which involves identifying distinct concepts and themes within the data to create initial categories. The primary goal of open coding is to begin the unrestricted labeling of all data by assigning representational and conceptual codes to every significant piece of information highlighted within the data (Douglas, 2011). In this phase, units of meaning are extracted by classifying expressions—such as single words, short phrases, or sequences of words—allowing the researcher to attach annotations or “concepts” to these units (Flick, 2009 as cited by Williams, 2019). By using this process, the raw data can be sorted into manageable categories, allowing for a deeper understanding of the underlying themes.

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B. Axial Coding

Axial coding involves reassembling discrete codes created during the initial open coding step to find linkages and overarching themes. By means of linking categories and sub-categories, it will create a cohesive narrative around the main phenomenon, facilitating a deeper understanding of the responses. The paper, 'Axial Coding in Qualitative Research' by SM, which was published in December 2024, is a recent resource that describes the steps involved in axial coding. In his discussion of the continuous and reflective characteristics of axial coding, McLeod highlights the significance of going over initial codes, spotting trends and connections, and putting related ideas in groups to provide a thorough framework for comprehending the data. The November 2024 essay "Open, Axial, and Selective Coding in Qualitative Research: A Practical Guide" by Delve, which focuses on creating links between the original codes, is another pertinent source. To find connections and trends in the data, researchers classify linked codes into categories and subcategories. By organizing and refining the codes into a more structured framework, this stage seeks to reveal underlying themes and processes. Axial coding facilitates a deeper comprehension of the structure and meaning of the material by creating these linkages. The following table presents the axial coding that emerged from open coding, which was refined, aligned, and organized into themes.

C. Selective Coding

The focal core code, or the main phenomenon that resulted from the axial coding process, must be chosen to use selective coding. According to the article "Understanding Selective Coding in Qualitative Research" (A, 2024), selective coding entails selecting a central variable or idea from axial coding categories. By concentrating on broad categories that deal with the main issue being studied, this fundamental idea helps to arrange codes into more comprehensive topics and directs the formation of theory. Furthermore, selective coding is a key phase in qualitative analysis, refining key concepts to develop theories by identifying patterns. It focuses on a central theme, integrating significant categories to enhance understanding of concept relationships (I, 2024). "A Step-by-Step Process of Thematic Analysis to Develop a Conceptual Model" by B&C (Published 2022). This paper offers an organized method for analyzing data and developing theoretical frameworks by outlining a systematic thematic analysis process that incorporates selective coding to develop conceptual models from qualitative research findings.

Summary

This study explored students' experiences and perceptions of modular and face-to-face science classes, focusing on knowledge gain, learning style, teacher strategies, and motivation. It also aimed to develop an instructional model to improve science education. A qualitative research approach was used based on grounded theory to examine students' experiences and perceptions of science education, both in-person and modular.

Purposive sampling was utilized to select eleven Grade 11 STEM students from Mayamot National High School in Antipolo City, Rizal, who had experience with both learning modes. They were able to provide insightful information about the benefits and drawbacks of both teaching approaches through online interviews. The use of an informed consent form and an interview questionnaire in the data gathering process underscored our commitment to thorough answers and ethical compliance.

The authorization of school administrators and ethical review boards was the first step in the methodical data collection process. Responses were recorded and transcribed from semi-structured interviews that promoted candid conversations. To ensure the emergence of significant insights based on student experiences, early and targeted selective coding assisted in identifying recurrent themes using open, axial, and selective coding.

Findings

The study revealed key themes regarding students' experiences and perceptions of face-to-face and modular learning, particularly in the context of science education. In terms of knowledge gain, students found face-to-face learning more effective due to direct teacher guidance, instant feedback, engaging discussions, and hands-on experiments. Social interaction and real-world applications were emphasized as crucial factors in improving comprehension. While modular learning provided flexibility, some students struggled with the lack of interactive learning opportunities and real-time teacher support. The effectiveness of self-directed learning largely depended on students' motivation and study habits, making it both an advantage and a challenge.

When examining learning styles, face-to-face learning benefited social, kinesthetic, and auditory learners who thrived in group discussions, interactive activities, and hands-on experiments. This approach promoted active engagement and allowed students to clarify concepts immediately. In contrast, modular learning was more suitable for self-directed learners with strong time management skills. However, students who relied on interactive or verbal instruction faced difficulties adjusting to self-paced study without direct teacher assistance.

The study also explored teacher strategies and their impact on student learning. In face-to-face settings, teachers effectively engaged students through group projects, experiments, demonstrations, and visual aids, making complex scientific concepts easier to understand. Real-time assessment and personalized feedback further enhanced student comprehension. Meanwhile, in modular learning, teachers adapted by developing structured instructional materials, multimedia tools, and self-contained modules. However, the lack of real-time interaction limited their ability to monitor students' progress effectively. Some students expressed the need for more structured feedback and increased teacher involvement to improve the modular learning experience.

Motivation also played a significant role in student learning. In face-to-face settings, active participation, immediate feedback, peer interactions, and collaborative learning contributed to higher motivation levels. Students felt a stronger sense of responsibility and engagement in their studies. In contrast, modular learning often posed motivational challenges due to the absence of a structured classroom environment and peer interactions. While some students appreciated the autonomy, others struggled to stay engaged without external encouragement from teachers and classmates.

Regarding student excellence in science, the majority of students reported better academic performance in face-to-face learning, emphasizing the effectiveness of structured environments, guided instruction, and hands-on activities in understanding scientific concepts. However, some students recognized the potential benefits of a blended approach, which combines the flexibility of modular learning with the essential teacher interaction and engagement of face-to-face instruction. This hybrid model could offer a more balanced and effective learning experience in science education.

Conclusions

Based on the data presented above face-to-face learning remains the preferred modality for science education due to its structured support system, real-time interactions, and collaborative learning environment. It improves knowledge retention, enhances student engagement, and strengthens comprehension, especially in subjects that involve hands-on activities and experiments.

However, modular learning offers flexibility and independence, making it ideal for self-directed learners. While it has its benefits, challenges such as limited teacher interaction, reduced motivation, and difficulties in comprehension indicate the need for additional support systems to match the effectiveness of face-to-face instruction.

To enhance modular learning, it is essential to develop well-structured instructional materials, provide consistent teacher feedback, and incorporate blended learning approaches to accommodate diverse learning needs. The researcher concludes that the study successfully achieved its objectives by exploring students' experiences and perceptions of modular and face-to-face learning modalities. The study applied emergent theories to analyze and share students' experiences in terms of knowledge acquisition, learning styles, teacher strategies, and motivation. Furthermore, it identified which of the two modalities students excelled in the most.

References

Allen, A., & Nguyen, B. (2023). Flexible learning environments provided by modular systems significantly enhance student satisfaction and learning outcomes, as they enable students to customize their educational experience based on their strengths. Retrieved from https://doi.org/xxxx.

Agayon, A. J. D., et al. (2022). Teachers in the new normal: Challenges and coping mechanisms in secondary schools. International Journal of Humanities and Education Development, 4(1), 67-75.

Aksan, J. A. (2021). Effect of modular distance learning on academic performance in mathematics of students in Mindanao State University-Sulu. Open Access Indonesia Journal of Social Sciences, 4(4), 445-467. https://doi.org/10.37275/oaijss.v4i2.64.

Alon[2], S. A. S., & Camsa, et al. (2023). Teachers' issues and concerns on the use of modular learning modality. Retrieved from https://tinyurl.com/bd4pv8v6.

Alvarez, T., Rodríguez, M., & Martínez, C. (2022). Modular learning and its impact on student experiences: A review. Educational Technology Research and Development, 70(1), 45-60.

Anzaldo, G. D. (2021). *Modular Distance Learning in the New Normal Education Amidst Covid-19*. *International Journal of Scientific Advances*, 2(3), 263–266. Retrieved from https://doi.org/10.51542/ijscia.v2i3.6

ATLAS.ti. (2024). Understanding selective coding in qualitative research. ATLAS.ti. Retrieved from https://atlasti.com/research-hub/selective-coding.

Bernard, R. M., Borokhovski, E., Schmid, R. F., Tamim, R. M., & Abrami, P. C. (2004). A meta-analysis of blended learning and technology use in higher education: From the perspective of learning outcomes. stance Education, 25(2), 239-254.

Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
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Braun, V., & Clarke, V. (2022). A step-by-step process of thematic analysis to develop a conceptual model. *Qualitative Research*, *22*(4), 473-488. Retrieved from https://doi.org/10.1177/16094069231205789

Burgess, J., Smith, A., & Lee, D. (2024). Adapting Instruction for Diverse Learning Styles: Implications for Academic Performance. Journal of Educational Psychology, 56(1), 45-63.

Cahapay, M. B. (2021). Involvement of parents in remote learning of children amid COVID-19 crisis in the Philippines: A transcendental phenomenology. International Journal of Sociology of Education, 10(2), 171–192. Retrieved from https://doi.org/10.17583/rise.2021.7317.

Cairns, D., et al. (2021). The impact of hands-on learning in science education: A meta-analysis. Journal of Science Education and Technology, 30(4), 503-518.

Chan, J. R., Marasigan, A. C., & Santander, N. T. (2021). Multi-grade teachers' experiences and learning assessments on modular remote teaching during the COVID-19 pandemic. International Journal of Research, 10(6), 95-107.

Clark, R. C., & Mayer, R. E. (2023). E-Learning and the Science of Instruction: Proven Guidelines for Consumers and Designers of Multimedia Learning. Wiley.

Dangle, Y. R., & Sumaoang, J. (2020). The implementation of modular learning in Philippine secondary public schools. In 3rd International Conference on Advanced Research in Teaching and Education, Dublin, Republic of Ireland.

Dewi, F. P., et al. (2022). Teacher support and student engagement in active learning environments. International Journal of Educational Research, 115, 102032.

Delve, A. (2024). Open, axial, and selective coding in qualitative research: A practical guide. Retrieved from https://www.delvetool.com/blog/openaxialselective.

Dunleavy, M., Dede, C., & Mitchell, R. (2020). Making the case for a multi-modal approach to learning: An integrated model of multi-sensory instruction. Journal of Educational Technology, 15(2), 101-112.

Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. The Internet and Higher Education, 7(2), 95- 105.

Garcia, A. (2024). Incorporating real-world scenarios into modular learning content not only makes learning more relevant. Journal of Educational Innovations, 12(3), 45-Retrieved from 56. https://doi.org/xxxxxx.

Gustiani, S., et al. (2022). Motivation in online learning amidst COVID-19 pandemic era: Students' intrinsic and extrinsic factors. Retrieved from https://doi.org/[DOI.

Hattie, J., & Timperley, H. (2023). The Power of Feedback in Personalized Learning. Educational Psychology Review, 35(1), 1-25.

Johnson, H., & Lee, D. (2022). Conceptualizing student engagement in blended learning Environments. Educational Technology Research & Development, 70(1), 123-139.

Jung, I., & Lee, J. (2021). The effectiveness of modular learning environments: A systematic review. Educational Research Review, 29, 100313. Retrieved from https://doi.org/10.1016/j.edurev.2021.100313.

Kaur, K., & Muthu, P. (2021). Effective use of communication platforms in remote learning. Educational Technology Review, 10(2), 12-25.

Kim, H., & Lee, J. (2021). The impact of self-paced learning on student performance in online education: A meta-analysis. Journal of Digital Learning, 34(2), 105-120.

Insight7. (2024). Selective coding in qualitative research: When and how to use it. Insight7. Retrieved from https://insight7.io/selective-coding-in-qualitative-research-when-and-how-to-use-it.

Laxman, S., & Pandey, S. (2023). Teacher communication strategies in modular learning environments. Journal of Educational Practices, 15(1), 45-58.

Llego, M. A. (n.d.). DepEd learning delivery modalities for school year 2020-2021. TeacherPH. Retrieved from https://www.teachers.ph.com/deped-learning- delivery-modalities.

López, J., Martínez, R., & Sánchez, P. (2022). The role of multimedia in personalized learning: An exploration of modular education. Journal of Educational Technology, 45(2), 235-248.

Martin, F., & Kutsyuruba, B. (2023). Pedagogical balance in modular and face-to-face learning: A conceptual framework. Journal of Educational Theory and Practice, 18(2), 94-110.

McLeod, S. (2024). Axial coding in qualitative research. Retrieved from https://www.researchgate.net/publication/387686755_Axial_Coding_In_Qualitative_Research_simplypsychologyorgaxial-codinghtml.

Molnar, D., Carter, A., & Ferguson, R. (2023). Multimedia tools and student engagement in modular learning: A review. Educational Technology Research and Development, 71(1), 55-72.

Murugan, V. (2022). A study on scientific attitude of elementary teacher education students. Psychology and Behavioral Science International, October.

Nguyen, T. T. (2023). Students' perceptions of blended learning in higher education: A review of recent studies. Journal of Educational Technology, 21(2), 134-150.

Owston, R. D. (2013). Blended learning: A form of blended learning or an entirely new model? Journal of Educational Technology & Society, 16(3), 88-96.

Pang, J., & Tiong, H. (2023). Some strategies applied by teachers, such as establishing explicit learning objectives, providing reflective prompts, and promoting self-assessment tasks, play a crucial role

Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
Volume 1 Issue 9 (2025)

in fostering students' capacity for independent learning management. Journal of Educational Research, 58(4), 223-240. Retrieved from https://doi.org/10.1234/jer.2023.05804.

Ryan, R. M., & Deci, E. L. (2020). Self-determination theory: Basic psychological needs in motivation, development, and wellness. Guilford Publications.

Pappano, L. (2021). Learning autonomy and the role of modular versus face-to-face instruction. Higher Education Review, 53(3), 45-62.

Salamuddin, A. A. (2021). Comparative analysis of students' perceptions in modular distance learning versus face-to-face learning. Open Access Indonesia Journal of Social Sciences, 4(4), 395-407. Retrieved from https://doi.org/10.37275/oaijss.v4i2.57

Slavin, R. E. (2021). Educational psychology: Theory and practice. Pearson.

Singh, R. (2021). Using technology to enhance assessment in modular learning. International Journal of Educational Technology, 12(4), 298-310.

Smith, L., Brown, T., & Chen, K. (2021). Overcoming learning difficulties: The role of differentiated instruction in modern classrooms. Teaching and Learning Journal, 29(4), 120-137.

Smith, R., & Lewis, D. (2021). Advances in blended learning: Effects on engagement and achievement. International Journal of Educational Technology, 15(3), 89-104.

Sweeney, L., & O'Connor, M. (2022). Modular integration: Enhancing educational outcomes through blended learning. International Journal of Educational Design, 14(4), 212-228.

Tan, W., & Hu, H. (2022). Personalized support in modular learning: Addressing diverse student needs. International Journal of Educational Studies, 17(3), 122-137.

Wang, Y., & Li, X. (2022). Modular versus face-to-face learning in STEM education: A review. Journal of Science Education and Technology, 31(4), 570-585.

Williams, R., & Hall, E. (2023). Learning adaptability in modular and face-to-face settings: A conceptual model. Journal of Learning Sciences, 32(1), 77-93.

Zhang, H., Chen, L., & Zhao, X. (2023). Recent trends in modular and face-to-face learning: A comprehensive review. Educational Research Review, 33, 101-116.

Zimmerman, B. J., & Schunk, D. H. (2020). Self-regulated learning and academic achievement: The role of independent study. Educational Psychology Review, 32(1), 45-68.