ISSN: 2945-4190

World Journal on Education and Humanities Research
Creative Commons Attribution 4.0 International
Vol. 4, Issue 1, pp. 140-152
Received, February 2024; Revised March 2024;
Accepted April 2024

Article

Best Practices and Strategies of Teachers in Virtual Learning Instructions Amidst Covid-19 Pandemic

Beverly Funtanilla Wade
Lilibeth Pinili
Nina Rozanne De Los Reyes

Corresponding Author: funtanillabeverly@gmail.com

Abstract: This study investigates the demographic profiles, educational backgrounds, and professional development of teachers, alongside their adoption of various teaching strategies in a virtual instructional context. Through analysis of multiple datasets concerning teachers' age, gender, educational attainment, field of specialization, and the seminars and training they attended, the study evaluates the prevalence of specific teaching practices and their effectiveness. Additionally, using Chi-square tests, the study examines the potential relationships between teacher profiles and the extent of their practice implementations. Findings reveal a workforce characterized by a high level of experience and academic achievement, with a significant gender disparity. Crucially, no significant statistical correlations were found between teacher demographics or professional backgrounds and the teaching practices employed, suggesting a standardized adoption of educational strategies across various teacher profiles. The results emphasize the role of professional development in maintaining teaching efficacy in diverse educational settings, particularly in adapting to virtual platforms.

Keywords: Virtual instruction, teacher demographics, teaching strategies, covid-19

Introduction

The COVID-19 pandemic has dramatically altered educational landscapes globally, prompting a rapid transition from traditional classroom instruction to virtual learning environments (Siegel et al., 2021). This shift has posed substantial challenges, including the urgent need to adapt pedagogical approaches and ensure accessibility for all students (Bashir et al., 2021). Studies and reports have underscored the scale of this disruption, with institutions forced to navigate the complexities of online education platforms swiftly (Dempsey & Mestry, 2023). This urgent adaptation has highlighted issues of digital equity

and the readiness of educational systems to manage such transitions (Schleicher, 2020; UNESCO, 2021; Harris et al., 2020).

Virtual learning became indispensable during the pandemic as it facilitated the continuation of education amidst stringent physical distancing and lockdowns (Ali & Kaur, 2020). This mode of learning has not only ensured educational continuity but also evolved into a critical tool for teachers and students navigating the new normal. The expansion of virtual platforms has allowed for innovative teaching methodologies that could shape future educational practices (Murphy, 2021; Johnson et al., 2022; Smith & Doh, 2020). Furthermore, the shift to online education has spurred a significant evolution in assessment methods. Traditional exams have often been replaced or supplemented with project-based assignments, open-book examinations, and continuous assessments that are more suited to online learning environments (Gauci et al., 2022; Jolly et al., 2021). These changes could potentially offer insights into more flexible and inclusive ways to assess student learning, which could carry over into post-pandemic educational practices (Porter et al., 2021).

Transitioning to online education brought forth multiple challenges for teachers, including mastering new technologies, maintaining student engagement, and developing effective remote teaching strategies (Mosteanu, 2021). Teachers had to quickly adapt to digital tools and platforms while addressing the varied learning needs of students remotely. These challenges necessitated the development of new pedagogical strategies and a deeper understanding of technological integration in teaching (Brown & Green, 2020; Thompson et al., 2021; Lee, 2022). The shift to online education was a steep learning curve for teachers globally. It forced a rapid development of new skills and adaptation to maintain the quality of education, showcasing the resilience and creativity of educators in the face of unprecedented challenges (Bozkurt et al., 2020; Guppy et al., 2022). These experiences have provided valuable insights that are likely to influence educational practices well beyond the pandemic, with an increased focus on hybrid models of teaching and learning (Bashir et al., 2021).

Despite the rapid adoption of online education, significant gaps remain in the literature, particularly concerning effective teaching practices and strategies in emergency-induced virtual learning environments. Most existing studies focus on the technological aspects rather than holistic teaching strategies that include pedagogical, psychological, and social considerations. This research aims to bridge these gaps by exploring and documenting the strategies teachers have developed and applied in the context of the pandemic (Martinez et al., 2020; O'Connell, 2022; Patel & Simpson, 2023).

The primary objective of this study is to identify and document the best practices and strategies developed and employed by teachers for effective virtual learning during the COVID-19 pandemic. This

includes profiling teachers' demographics and the practices and strategies have been implemented and their impact on teaching and learning outcomes.

Methodology

The methodology of this study involves a quantitative research approach, utilizing a descriptive correlational design to investigate the virtual instructional practices and strategies employed by teachers during the COVID-19 pandemic. This approach employs a survey method to collect data, capturing respondents' demographic profiles, their utilized best practices and strategies, and the extent of their application in virtual learning environments. To quantitatively assess the effectiveness of these practices and strategies, a four-point Likert scale is used, providing a clear, categorical measure. This scale helps in drawing correlations between various practices and their perceived effectiveness as reported by the teacher participants. The study is structured around the Input-Process-Output (IPO) model, which organizes the progression from the inputs (data on practices and strategies), through the process (evaluation and correlation), to the output (conclusions about effective strategies). Participants in this study are teachers who have been randomly selected to ensure a diverse and representative sample, enhancing the generalizability and reliability of the findings. This methodological approach ensures that the study accurately reflects the current landscape of virtual teaching practices amid the ongoing pandemic.

Results and Discussion

Table 1. Age and Gender

Age	Gender				Total	
	Female		Male			
	Freq	%	Freq	%	Freq	%
51 & above	10	28	2	6	12	33
36 to 50	13	36	5	14	18	50
25 to 35	4	11	2	6	6	17
Total	27	75	9	25	36	100.00

The data presented in Table 1 categorizes teachers by age and gender, revealing a total of 36 teachers. The data shows a substantial gender disparity among the teachers, with females comprising 75% (27 teachers) and males 25% (9 teachers). Most notably, the age group of 36 to 50 years represents the largest cohort, with 18 teachers accounting for 50% of the total, of which 13 are female and 5 are male. The oldest age group, 51 and above, consists of 12 teachers (33% of the total), predominantly female (10 teachers). The youngest group, 25 to 35 years, includes only 6 teachers, representing 17% of the total, split relatively

evenly between genders. This data highlights not only the prevalence of female teachers across all age categories but also a concentration of the teaching workforce in the 36-to-50-year age range.

Table 2. Highest Educational Attainment

Educational Attainment	Frequency	Percentage
Doctoral Level	6	16.67
Master's Graduate	1	2.78
Master's Level	17	47.22
College Graduate	12	33.33
Total	36	100.00%

Table 2 provides insights into the highest educational attainment among a group of 36 individuals. The majority of the group, nearly half at 47.22%, have reached the Master's Level, indicating a significant pursuit of postgraduate education but not necessarily completion of a Master's degree. Meanwhile, only 1 person, making up 2.78% of the group, has completed a Master's degree. This suggests that while many embark on graduate studies, fewer complete this level of education. Additionally, 12 individuals, accounting for 33.33% of the group, hold a College Graduate degree, representing a significant portion that has completed undergraduate education. At the highest educational echelon, 6 individuals, or 16.67%, have attained a Doctoral Level degree, underscoring a substantial commitment to advanced academic achievement within this group. Overall, the data reflects a high level of educational attainment, with a strong emphasis on graduate and postgraduate education.

Table 3. Length of Service

Length of Service in Teaching	Frequency	Percentage
26 years and up	5	13.89
21-25 years	10	27.78
16-20 years	10	27.78
11-15 years	2	5.56
6-10 years	5	13.89
1-5 years	4	11.11
Total	36	100.00%

Table 3 details the length of service in teaching among a group of 36 individuals. The data reveals a varied distribution of teaching experience. Notably, the largest segments are those with 21-25 years and 16-20 years of service, each comprising 27.78% of the group (10 individuals in each category). This suggests a significant portion of the group has accrued substantial experience in the education sector. Conversely, those with 11-15 years of service are the least represented, with only 2 individuals making up 5.56% of the total. The early career stages also have a presence: those with 1-5 years and 6-10 years of

service constitute 11.11% and 13.89% of the group respectively, totaling 9 individuals. Additionally, those with over 26 years of service are also relatively few, representing 13.89% of the group. Overall, the data suggests a workforce with a significant core of highly experienced teachers, complemented by a smaller number of early-career educators.

Table 4. Field of Specialization

Field of Specialization	Frequency	Percentage
Science	17	47.22
Math	14	38.89
English	8	22.22
ELA	6	16.67
Special Education	4	11.11
Chemistry	2	5.56
Self-Contained LIDs / Class	2	5.56
Computer Science	1	2.78
Driver's Education	1	2.78
Financial Literacy	1	2.78
Geometry	1	2.78
Language Arts	1	2.78
Music	1	2.78
Physical Education	1	2.78
Physics	1	2.78
Preschool	1	2.78
Social Studies	1	2.78
Spanish	1	2.78
SpED Life Skills	1	2.78
Work Study	1	2.78

Table 4 outlines the fields of specialization among a group of 36 educators, indicating a diverse range of subjects taught within the educational institution. Science and Math emerge as the predominant specialties, with 17 teachers (47.22%) specializing in science and 14 teachers (38.89%) in Math. This highlights a strong emphasis on STEM (Science, Technology, Engineering, and Mathematics) education within this group. English and English Language Arts (ELA) also hold significant places, with 8 teachers (22.22%) specializing in English and 6 (16.67%) in ELA, showcasing a robust focus on language and literacy. Furthermore, Special Education is represented by 4 teachers (11.11%), indicating specialized support for students with diverse learning needs. Other areas such as Chemistry, Self-Contained Learning in Diverse Settings (LIDs)/Class each have 2 teachers (5.56%), showing a more niche focus. The remaining fields—Computer Science, Driver's Education, Financial Literacy, Geometry, Language Arts, Music, Physical Education, Physics, Preschool, Social Studies, Spanish, Special Education Life Skills, and Work Study—are each represented by only 1 teacher (2.78%). This suggests that while the institution covers a wide range of educational areas, the focus remains predominantly on core

academic subjects, particularly Science and Math, with more specialized or elective subjects receiving less emphasis.

Table 5. Seminars and Training Attended

Seminars & Training Attended	Frequency	Percentage
Kagan Strategies in teaching	27	75
Training related to virtual teaching	26	72.22
Professional Development	25	69.44
Classroom Management	23	63.89
Effective Practice and Strategies in Teaching	20	55.56
Seminars and Training if the field of specialization	18	50
Trainings related to Special Education	14	38.89
Integration of ICT in Teaching- Learning Process	5	13.89
Guidance and Counseling	2	5.56

Table 5 provides a detailed breakdown of the seminars and training attended by a group of 36 educators, highlighting the areas in which they have sought professional development. A significant majority have participated in seminars on Kagan Strategies in teaching, with 27 educators (75%) attending, indicating a strong emphasis on collaborative learning techniques. Training related to virtual teaching has also been widely attended, with 26 educators (72.22%) participating, reflecting the necessity for skills in digital instruction, likely driven by recent trends toward online learning environments.
Professional development sessions in general have been attended by 25 teachers (69.44%), showing a commitment to ongoing educational growth. Classroom management training has been completed by 23 educators (63.89%), underscoring the importance of effective classroom control and student engagement strategies. Training on Effective Practice and Strategies in Teaching was attended by 20 teachers (55.56%), and seminars specifically tailored to their fields of specialization were attended by 18 teachers (50%), highlighting targeted professional development to enhance subject-specific teaching skills. Training related to Special Education was attended by 14 teachers (38.89%), which is significant, though smaller relative to other training, pointing to specialized support for educators working with diverse learning needs. Far fewer educators have engaged in training on integrating Information and Communication Technology (ICT) in the teaching-learning process, with only 5 attendees (13.89%), suggesting a lesser focus on this area. Lastly, guidance and counseling training was attended by the fewest, with just 2 educators (5.56%), indicating a very limited exposure to this important area of student support.

Table 6 evaluates a variety of teaching strategies used during virtual instruction, based on their effectiveness as rated by a weighted mean score. The table presents a list of fifteen strategies, with an overall

average weighted mean of 2.49, indicating that the general effectiveness of these strategies is considered to be "Effective."

Table 6. Teachers' Best Practices and Strategies During the Virtual Instructions

Teachers' Strategies		Weighted Mean	Description
1	Crossover Learning	2.22	Effective
2	Learning Through Argumentation	2.06	Effective
3	Context-Based Learning	2.64	Moderately Effective
4	Computational Thinking	2.11	Effective
5	Learning by Doing	3.17	Moderately Effective
6	Embodied Learning	2.08	Effective
7	Adaptive Teaching	2.72	Moderately Effective
8	Think, Pair, Share	2.67	Moderately Effective
9	Round Robin	2.17	Effective
10	Small Group Discussion thru a Break Room	2.53	Moderately Effective
11	Peer Feedbacking	2.36	Effective
12	Let's Do Together	2.50	Effective
13	Video Modeling	2.75	Moderately Effective
14	Brain Breaks	2.75	Moderately Effective
15	Task Analysis (Chunking Concepts)	2.64	Moderately Effective
Average Weighted Mean		2.49	Effective

Table 6 evaluates a variety of teaching strategies used during virtual instruction, based on their effectiveness as rated by a weighted mean score. The table presents a list of fifteen strategies, with an overall average weighted mean of 2.49, indicating that the general effectiveness of these strategies is considered to be "Effective." Specifically, strategies such as "Crossover Learning," "Learning Through Argumentation," "Computational Thinking," "Embodied Learning," "Round Robin," "Peer Feedbacking," and "Let's Do Together" have been rated as "Effective," with weighted means ranging from 2.06 to 2.22. These strategies likely reflect methods that actively engage students, encourage interaction, and utilize digital platforms effectively for learning. On the other hand, strategies like "Context-Based Learning," "Learning by Doing," "Adaptive Teaching," "Think, Pair, Share," "Small Group Discussion through a Break Room," "Video Modeling," "Brain Breaks," and "Task Analysis (Chunking Concepts)" are considered "Moderately Effective," with weighted means from 2.53 to 2.75. These moderate ratings may indicate challenges in fully translating these practices into virtual formats or the need for more specialized training to optimize their effectiveness in an online setting. Overall, the data suggests a positive reception of diverse and interactive learning strategies in virtual education environments. However, the variance in effectiveness ratings highlights the potential need for refining certain approaches to enhance their impact in online teaching.

Table 7. Teachers' Practices Used During the Virtual Instructions

Teachers' Strategies		Weighted Mean	Description
1	Creates a parent-teacher partnership to promote good working relationship during the virtual instructions.	2.78	Moderately Used
2	Sending out home learning packet for those who have issues with internet dysconnectivity.	2.53	Moderately Used
3	Sending out home the content coverage and unit plans for the quarter.	1.86	Somehow Used
4	Schedules zoom/teams meeting to parent and student for support.	2.89	Moderately Used
5	Provides recorded lecture to support and enhance students' understanding on the topic.	2.42	Somehow Used
6	Go extra mile to support students.	3.22	Moderately Used
7	Interests and joy in exploring new technologies that have potential value for virtual school environments.	3.14	Moderately Used
8	Teachers' flexibility with time.	3.33	Always Used
9	Deep understanding of the varying learning styles of their students.	3.17	Moderately Used
10	Establishes good rapport to motivate students.	3.47	Always Used
11	Use of multiple strategies to assess student learning.	3.53	Always Used
12	Use of multiple strategies to form relationships that support rich interactions with the students and family.	3.22	Moderately Used
13	Engages in students' conversations about content and non-content related topics to establish relationship.	3.25	Moderately Used
14	Monitors student progress closely and interact with students to determine where gaps in knowledge may exist.	3.36	Always Used
15	Provides students with quick feedback to maintain their motivation for completing assignments.	3.31	Always Used
Average Weighted Mean		3.03	Moderately Used

Table 7 evaluates the usage of various teaching practices during virtual instruction, with an average weighted mean of 3.03, indicating that these practices are generally "Moderately Used". Certain practices are notably more frequently implemented. Based on the data "Teachers' flexibility with time," "Establishes good rapport to motivate students," "Use of multiple strategies to assess student learning," "Monitors student progress closely," and "Provides students with quick feedback" are strategies with weighted means ranging from 3.31 to 3.53, all categorized as "Always Used." These practices suggest a proactive and responsive approach to teaching that prioritizes communication, assessment, and feedback, crucial for maintaining student engagement

and learning in a virtual setting. Conversely, strategies like "Sending out home the content coverage and unit plans for the quarter" and "Provides recorded lectures" are less utilized, with weighted means of 1.86 and 2.42 respectively, and described as "Somehow Used." This could reflect limitations in resources, technology, or perhaps a need for more training in these areas to enhance their application. Other practices such as "Creates a parent-teacher partnership," "Schedules Zoom/Teams meetings with parents and students," "Sending out home learning packets for those with internet connectivity issues," and "Going the extra mile to support students" have weighted means between 2.53 and 3.22, falling under "Moderately Used." These strategies emphasize the importance of support and interaction with students and parents, reflecting efforts to overcome the barriers posed by virtual learning environments. Moreover, data suggests a commitment to adaptive and supportive teaching practices in virtual instruction, with a particular focus on personalized feedback, assessment, and fostering strong relationships. However, it also highlights areas that could benefit from increased usage or further development to fully support student learning in an online format.

Table 8. Test of Significant Relationship between the Profile of the Respondents and the Extent of the Practices and Strategies Implemented by the Teachers

Test of Significant Relationship	(df)	Computed x2 Value (Average)	Critical x2 Value	Decision	Remarks
Respondents' Age	6	5.01	12.59	Accept H0	Insignificant
Respondents' Gender	3	3.10	7.81	Accept H0	Insignificant
Respondents' Highest Educational Attainment	9	10.79	16.92	Accept H0	Insignificant
Respondents' Length of Professional Service in Teaching	15	21.38	25.00	Accept H0	Insignificant
Respondents' Professional Teacher Licenses	6	5.64	12.59	Accept H0	Insignificant
Respondents' Field of Specialization	9	14.30	16.92	Accept H0	Insignificant
Respondents' Seminars and Trainings Attended	15	24.62	25.00	Accept H0	Insignificant

The data presented in Table 8 explores the significant relationship between various demographic and the extent of practices and strategies implemented by teachers. Each characteristic was tested using the chi-squared test, and the decision to accept or reject the null hypothesis (H0) was based on comparing the computed average chi-squared value to a critical value. The results indicate that for all characteristics tested

age, gender, highest educational attainment, length of professional service in teaching, professional teacher licenses, field of specialization, and seminars and trainings attended the computed chi-squared values were lower than the corresponding critical values. As a result, the null hypothesis was accepted in each case, suggesting that there is no significant relationship between these respondent profiles and the practices and strategies they implement as teachers. This uniformly leads to the conclusion that the demographic and professional profiles of the respondents do not significantly influence the extent of their teaching practices and strategies, as all outcomes were deemed insignificant. This insight could suggest that factors outside of these basic demographics and professional attributes may be more critical in influencing teaching practices and strategies.

Conclusion

The analysis across various tables indicates diverse aspects of teacher demographics, educational attainment, and professional development engagement, as well as the effectiveness and usage of specific teaching practices. The significant gender disparity and a strong representation of experienced and highly educated teachers suggest a seasoned workforce with substantial academic credentials. Despite the varied educational backgrounds and lengths of service, the Chi-square tests show no significant correlation between these demographic factors and the extent of the practices and strategies implemented, indicating that such practices are uniformly adopted regardless of personal or professional differences among the teachers. This uniformity could suggest that the educational institution has a standardized approach to teaching practices or that these practices are widely recognized and adopted across different demographic and professional backgrounds within the educational sector. The findings underscore the importance of continuous professional development and the need to adapt teaching strategies to effectively cater to a changing educational environment.

References

Ali, W., & Kaur, M. (2020). Mediating educational challenges amidst Covid-19 pandemic. Asia Pac. J. Contemp. Educ. Commun. Technol, 6(2), 40-57.

Bashir, A., Bashir, S., Rana, K., Lambert, P., & Vernallis, A. (2021, August). Post-COVID-19 adaptations; the shifts towards online learning, hybrid course delivery and the implications for biosciences

courses in the higher education setting. In Frontiers in education (Vol. 6, p. 711619). Frontiers Media SA.

Bozkurt, A., Jung, I., Xiao, J., Vladimirschi, V., Schuwer, R., Egorov, G., ... & Paskevicius, M. (2020). A global outlook to the interruption of education due to COVID-19 pandemic: Navigating in a time of uncertainty and crisis. Asian Journal of Distance Education, 15(1), 1-126.

Brown, M., & Green, T. (2020). The Essentials of Instructional Design.

Dempsey, T., & Mestry, R. (2023). Teachers' Perceptions and Experiences of Navigating Continuing Professional Development during the COVID-19 Pandemic. Education Sciences, 13(9), 933.

Gauci, H., Robson, J., Golding, J., & Wallace, J. (2022). Practical or data-based projects? Types of undergraduate capstone projects chosen by distance-learning biology and environmental science students at the Open University.

Guppy, N., Verpoorten, D., Boud, D., Lin, L., Tai, J., & Bartolic, S. (2022). The post-COVID-19 future of digital learning in higher education: Views from educators, students, and other professionals in six countries. British Journal of Educational Technology, 53(6), 1750-1765.

Harris, D. N., et al. (2020). Education Research in the Wake of the COVID-19 Pandemic.

Jolly, L., Vyas, A., Raut, S., & Mishra, B. K. (2021). Innovation in online Evaluation for authentic assessment. Journal of Engineering Education Transformations, 27-34.

Johnson, N., et al. (2022). Online Learning and Educational Equity During a Pandemic. Educational Theory.

Lee, K. (2022). Effective Teaching Online: Harnessing Technology for Enhanced Learning.

Martinez, R., et al. (2020). Learning Online: Where do we go from here?.

Moşteanu, N. R. (2021). Teaching and learning techniques for the online environment. how to maintain students' attention and achieve learning outcomes in a virtual environment using new technology. International Journal of Innovative Research and Scientific Studies, 4(4), 278-290.

Murphy, M. P. A. (2021). COVID-19 and emergency eLearning: Consequences of the securitization of higher education for post-pandemic pedagogy. Contemporary Security Policy.

Porter, S. G., Greene, K., & Esposito, M. K. (2021). Access and inclusion of students with disabilities in virtual learning environments:

Implications for post-pandemic teaching. International Journal of Multicultural Education, 23(3), 43-61.

Schleicher, A. (2020). The Impact of COVID-19 on Education Insights from Education at a Glance 2020. OECD.

Siegel, A. A., Zarb, M., Alshaigy, B., Blanchard, J., Crick, T., Glassey, R., ... & Williams, D. (2021). Teaching through a global pandemic: educational landscapes before, during and after COVID-19. In Proceedings of the 2021 Working Group Reports on Innovation and Technology in Computer Science Education (pp. 1-25).

Smith, J., & Doh, L. (2020). General guidelines for transitioning from classroom to online instruction.

Thompson, C., et al. (2021). Virtual teaching and strategies: Transitioning from teaching traditional classes to online.

UNESCO. (2021). Education in a post-COVID world: Nine ideas for public action.

