

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

THE TRIALS AND TRIUMPHS OF MATHEMATICS TEACHERS IN ONLINE
DISTANCE LEARNING

A Thesis Presented to the
Faculty of the Graduate School
College of Education
West Visayas State University
La Paz, Iloilo City

In Partial Fulfilment
of the Requirements for the Degree
Master of Arts in Education
(Mathematics)

by

Dibralyn F. Laserna

April 2024

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

APPROVAL SHEET

A Thesis for the Degree
Master of Arts in Education
(Mathematics)

by

Dibralyn F. Laserna

Approved by the Research Committee:

SYBEL JOY F. LABIS, PhD, Chairperson

SALVADOR P. BACIO Jr., PhD, Member

JEENA A. AMOTO, PhD, Outside Expert

ROBERTO G. SAGGE, JR., PhD, Adviser

LOREY F. TANALEON, PhD, FHEA
Dean

April 2024

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

Laserna, Dibrilyn F. "*The Trials and Triumphs of Mathematics Teachers in Online Distance Learning.*" Unpublished Thesis, Master of Arts in Education (Mathematics), College of Education Graduate School, West Visayas State University, Iloilo City, April 2024

Abstract

The abrupt implementation of Online Distance Learning has transformed mathematics pedagogy, compelling teachers to adapt to technological advancements. This study sought to determine the trials and triumphs experienced by mathematics teachers in online distance learning and its implication to mathematics education. To address this problem, qualitative phenomenological methodology was used. The researcher utilized purposive sampling to choose the six (6) informants of the study who were Junior High School Mathematics Teachers in one (1) of the public schools in Iloilo and taught in an online distance learning, specifically, using live synchronous instruction in the new normal. Data were collected and analyzed based on the sequence of activities stated in Groenewald's (2004), and Hycner's (1999) phenomenological research procedure. Three (3) major themes emerged from the analysis of the data: The Stormy Sea: Trials of Online Teaching, A Mountain's Peak: Triumphs of the Cyber Classroom, and A Digital Archipelago: Implications to Education. Results of the study showed that the trials were internet connection and power issues, poor student engagement, exhausting workloads, mental health issues and classroom management glitches. However, the triumphs included learning new skills, developing resourcefulness, creating engaging and motivating activities, and promoting individual initiatives and collaboration.

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

Practical findings from the study suggest that teaching in online distance learning requires comprehensive training for teachers, use of interactive teaching methods, contingency plans for internet or power disruptions, and continuous exploration and collaboration among teachers. It is recommended that teachers should engage in ongoing professional development, learners should prioritize self-motivation and time-management, other stakeholders must support schools in acquiring technology, and other researchers should explore emerging technologies and best practices in online learning.

Keywords: online distance learning, new normal, trials, triumphs, mathematics, technology, Mathematics.

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

TABLE OF CONTENTS

	Page
Title Page	i
Approval Sheet	ii
Acknowledgment	iii
Abstract	vi
Table of Contents	ix
List of Figures	xi
List of Appendices	xii
Chapter	
1 INTRODUCTION TO THE STUDY	1
<i>Background of the Study</i>	2
Epistemology and Theoretical Research Perspective	4
Statement of the Problem	8
Assumptions of the Study	8
Definition of Terms	10
Significance of the Study	12
2 REVIEW OF RELATED LITERATURE	14
Mathematics Education in the New Normal	15
Teachers' Teaching Experiences of Teachers in the New Normal	18

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

Online Distance Learning	23
Phenomenology	36
Summary	39
3 METHODOLOGY	42
Methodological Perspective	42
Context of the Study	44
Procedures	47
Data Collection and Analysis	47
Data Gathering Method	48
Ethical Considerations	52
4 PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA	53
Theme 1: The Stormy Sea: Trials of Online Teaching	54
Theme 2: A Mountain's Peak: Triumphs of the Cyber Classroom	69
Theme 3: A Digital Archipelago: Implications to Education	80
5 SUMMARY, IMPLICATIONS AND RECOMMENDATION	91
Summary of Findings	91
Implications of the Study	92
Recommendations	97
REFERENCES	100
APPENDICES	127

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

LIST OF FIGURES

Figure		Page
1	The Elements of Social Research	7
2	<i>The research procedure</i>	51
3	The Themes and Subthemes	54

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

LIST OF APPENDICES

Appendix		Page
A	Letter to validators	128
B	Letter to the Schools Division Superintendent	132
C	Letter to the Principal	134
D	Interview Guide	136
E	Letter for Informants	139
F	Consent Form	141

References

- Adamma, O. N., Ekwutosim, O. P., & Unamba, E. C. (2018). Influence of extrinsic and intrinsic motivation on pupils academic performance in mathematics. Online Submission. <https://doi.org/10.5281/zenodo.1405857>
- Adedoyin, O. B., & Soykan, E. (2023). Covid-19 pandemic and online learning: The challenges and opportunities. *Interactive Learning Environments, 31(2)*, 863-875. <https://www.tandfonline.com/doi/full/10.1080/10494820.2020.1813180>
- Afolabi, F., & Olufemi Olajuyigbe. (2022). Resilience in Teaching and Learning for Academic Continuity During Disruption for Sustainable Development. Tenth Pan-Commonwealth Forum on Open Learning. <https://doi.org/10.56059/pcf10.9008>
- Ahmadon, F., Ghazalli, H. I. M., & Rusli, H. M. (2020). Studying during pandemic: A review of issues from online learning in the middle of COVID-19. In 6th international conference on interactive digital media (ICIDM 2020) (pp. 27–30). <https://doi.org/10.1109/ICIDM51048.2020.9339644>
- Alshwiah, A.A. (2021). Barriers to online learning: Adjusting to the 'New Normal' in the time of COVID-19. *Turkish Online Journal of Distance Education, 22(4)*, 212-228. <https://eric.ed.gov/?id=EJ1316914>
- American Psychological Association (2017). Ethical principles of psychologists and code of conduct. <https://www.apa.org/ethics/code>

- An, Y., Kaplan-Rakowski, R., Yang, J., Conan, J., Kinard, W., & Daugherty, L. (2021). Examining K-12 teachers' feelings, experiences, and perspectives regarding online teaching during the early stage of the COVID-19 pandemic. *Education Tech Research Dev* 69, 2589–2613.
<https://link.springer.com/article/10.1007/s11423-021-10008-5>
- Annida, S. & Intaglia Harsanti. (2019). Challenge at Work: Innovative Work Behavior among Teachers. <https://doi.org/10.2991/icosihess-19.2019.33>
- APA Dictionary of Psychology (2022). <https://dictionary.apa.org/coping-strategy>
- Armstrong, P.B. (2005). *Phenomenology*. Johns Hopkins Guide for Literary Theory and Criticism.
https://www.brown.edu/Departments/Joukowsky_Institute/courses/architecturebodyperformance/1065.html
- Baburajan, P. K., Silishi N., Faisal, T., & Awawdeh, M. (2022). Online teaching and learning: Effectiveness and challenges. 2022 Advances in Science and Engineering Technology International Conferences (ASET).
<https://doi.org/10.1109/aset53988.2022.9734851>
- Bagaskara, A.H., Tajudin Nur, & Yayat Herdiana. (2022). TEACHER'S STRATEGY IN IMPROVING STUDENT'S LEARNING MOTIVATION. *Al-Ibda: Jurnal Pendidikan Guru Madrasah Ibtidaiyah*,2(02),34–40.
<https://doi.org/10.54892/jpgmi.v2i02.245>

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

103

- Bafuyos, G., & Clarin, A.R. (2021). Experiences of instructors in online teaching: A phenomenological study. *EduLine: Journal of Education and Learning Innovation*, *1*(2), 99-117. <https://doi.org/10.35877/454RI.eduline542>
- Baquero, A. & Escortell, R. (2022). Blended learning: A new trend in education. 4484-4491. 10.21125/iceri.2022.1080.
- Barberos, M.T., Gozalo, A., & Padayogdog, E. (2024). The effect of the teacher's teaching style on students' motivation. <https://steinhardt.nyu.edu/departments/teaching-and-learning/research/practitioner-action-research/effect-teachers-teaching>
- Barr, B. (2014). Identifying and addressing the mental health needs of online students in higher education. *Online Journal of Distance Learning Administration*, *17*(2), 35-40. <https://eric.ed.gov/?id=EJ1036730>
- Baumber, A., Allen, L., Key, T., Kligyte, G., Melvold, J., & Pratt, S. (2021). Teaching resilience: Enabling factors for effective responses to COVID-19. *Student Success*, *12*(2). <https://doi.org/10.5204/ssj.1773>
- Bhandari, P. (2022). *A Guide to Ethical Considerations in Research*. Scribbr. <https://www.scribbr.com/methodology/research-ethics/>
- Biwer, F. (2020). Fostering effective learning strategies in higher education – A mixed-methods study. *Journal of Applied Research in Memory and Cognition*, *9*(2), 186–203. <https://doi.org/10.1016/j.jarmac.2020.03.004>
- Blumer, H. (1969). *Symbolic interactionism perspective and method*. Prentice-Hall, Inc.

- Bobley, L. & Best, R. (2021). Teacher preparation during COVID-19: A shift from face-to-face to remote field experiences and student teaching. *INTED2021*, 15th Annual International Technology, Education and Development Conference. IATED Academy, Spain.
https://touro scholar.touro.edu/cgi/viewcontent.cgi?article=1137&context=gse_publications
- Bradley, V. M. (2021). Learning management system (LMS) use with online instruction. *International Journal of Technology in Education*, 4(1), 68-92.
<https://doi.org/10.46328/ijte.36>
- Braun, V. & Clarke, V. (2013) Teaching thematic analysis: Overcoming challenges and developing strategies for effective learning. *The Psychologist*, 26(2), 120-123.
<https://uwe-repository.worktribe.com/output/937596>
- Bringula, R., Reguyal, J. J., Tan, D. D., & Ulfa, S. (2021). Mathematics self-concept and challenges of learners in an online learning environment during COVID-19 pandemic. *Smart Learning Environments*, 8(1). <https://doi.org/10.1186/s40561-021-00168-5>
- Bukas (2021). 7 online platforms that make online classes happen.
<https://bukas.ph/online-platforms-for-online-classes/>
- Butler, R. (2020). *Teaching in the Age of Compassion: Cultivating the Heart of a Pedagogical Practice*. Teachers College Press.

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

105

- Cassiba, R., Ferrarello, D., Mammana, M.F., Musso, P., Pennisi, M., Taranto, E. (2021). Teaching mathematics at distance: a challenge for universities. *Educ. Sci.*, *11*(1).
<https://dx.doi.org/10.3390/educsci11010001>
- Castelo, M. (2020). Factors to consider when preparing for e-learning.
<https://edtechmagazine.com/k12/article/2020/03/factors-consider-when-preparing-e-learning-perfcon>
- Chan, M. C. E., Sabena, C., & Wagner, D. (2021). Mathematics education in a time of crisis—a viral pandemic. *Educational Studies in Mathematics*.
<https://doi.org/10.1007/s10649-021-10113-5>
- Chin, K. E., Jiew, F. F., & Al Jupri. (2022). Mathematics teachers' online teaching experience in times of school closures: the case of Malaysia. *Malaysian Journal of Learning and Instruction*, *19*(1), 59-84. <https://doi.org/10.32890/mjli2022.19.3>
- Chirinda, B., Ndlovu, M., & Spangenberg, E. (2021). Teaching mathematics during the COVID-19 lockdown in a context of historical disadvantage. *Education Sciences*, *11*(4), 177. <https://doi.org/10.3390/educsci11040177>
- Chisadza, C., Clance, M., Mthembu, T., Nicholls, N., & Yitbarek, E. (2021). Online and face-to-face learning: Evidence from students' performance during the Covid-19 pandemic. *African Development Review*, *33*(1). <https://doi.org/10.1111/1467-8268.12520>

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

106

- Chisadza, C., Clance, M., Mthembu, T., Nicholls, N., & Yitbarek, E. (2021). Online and face-to-face learning: Evidence from students' performance during the Covid-19 pandemic. *African Development Review*, *33*(1). <https://doi.org/10.1111/1467-8268.12520>
- CliffsNotes (2020). *Sociology*. Houghton Mifflin Harcourt.
<https://www.cliffsnotes.com/study-guides/sociology>
- Co, G., Xu, Z., Sgarbi, G., Cheng, S., Xu, Z., D'Entremont, A., Abelló, J., Mohaghegh Harandi, N., & Verrett, J. (2019). Student submission patterns in online homework and relationships to learning outcomes: A pilot study. *Proceedings of the Canadian Engineering Education Association (CEEA)*.
<https://doi.org/10.24908/pceea.vi0.13725>
- Cobo-Rendón R., Bruna Jofre C., Lobos K, Cisternas San Martin N. and Guzman E. (2022). Return to university classrooms with blended learning: A possible post-pandemic COVID-19 scenario. *Front. Educ.* 7:957175. doi: 10.3389/feduc.2022.957175
- Çoklar, A. N., Efiltili, E., Sahin, Y. L., & Akçay, A. (2016). Investigation of techno-stress levels of teachers who were included in technology integration processes. Online Submission. <https://eric.ed.gov/?id=ED575012>
- Collins . (n.d.) Triumph. In *CollinsDictionary.com*.
<https://www.collinsdictionary.com/dictionary/english/triumph>

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

107

- Const. (1987), art. XIV (Phil.) <https://www.officialgazette.gov.ph/constitutions/the-1987-constitution-of-the-republic-of-the-philippines/the-1987-constitution-of-the-republic-of-the-philippines-article-xiv/>
- Cortez, C. P. (2020). Blended, Distance, Electronic and Virtual-Learning for the New Normal of Mathematics Education: A Senior High School Student's Perception. *European Journal of Interactive Multimedia and Education*, 1(1), e02001. <https://doi.org/10.30935/ejimed/8276>
- Creswell, J. W. (2013). *Qualitative inquiry & research design*. United States of America: Sage. <https://us.sagepub.com/en-us/nam/qualitative-inquiry-and-research-design/book246896>
- Crotty, M. (2003). *The foundations of social research: Meaning and perspective in the research process*. Thousand Oaks, CA: SAGE Publications Inc. <https://us.sagepub.com/en-us/nam/the-foundations-of-social-research/book207972>
- David, L. (2015). *E-learning Theory (Mayer, Sweller, Moreno)*. Learning Theories. <https://www.learning-theories.com/e-learning-theory-mayer-sweller-moreno.html>.
- Denzin, N.K. & Lincoln, Y.S. (2005). *The discipline and practice of qualitative research*.p.3-4. <https://psycnet.apa.org/record/2005-07735-001>
- Department of Education (2016). *K to 12 curriculum guide in mathematics*.p.2-5.
- Department of Education. (2020). *Learning opportunities shall be available*. https://www.deped.gov.ph/wp-content/uploads/2020/07/DepEd_LCP_July3.pdf

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

108

- Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems*, 49(1):5-22. doi:10.1177/0047239520934018
- Doctolero, A., & Guira, G. (2022). Lived experiences of teachers implementing online learning: Springboard to quality basic education. *E-Dawa: An International Multidisciplinary Research Journal*, 2(1). <https://doi.org/10.56901/cavg1584>
- Doo, M. Y., Bonk, C., & Heo, H. (2020). A meta-analysis of scaffolding effects in online learning in higher education. *International Review of Research in Open and Distributed Learning*, 21(3), 60-80. <https://doi.org/10.19173/irrodl.v21i3.4638>
- Engelbrecht, J., Llinares, S. & Borba, M.C. (2020). Transformation of the mathematics classroom with the internet. *ZDM Mathematics Education* 52, 825–841
<https://doi.org/10.1007/s11858-020-01176-4>
- Fraenkel, J. R., & Wallen, N. E. (2009). How to design and evaluate research in education(7th Edition). McGraw-Hill Companies.
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. (2012). How to design and evaluate research in education(8th Edition). McGraw-Hill Companies.
from http://www.itdl.org/Journal/Jan_05/article01.htm
- Gellens, S., & Wachtel, L. (2021). Online Teaching Needs Ongoing Student Engagement. *Advances in Mobile and Distance Learning Book Series*, 39–56.
<https://doi.org/10.4018/978-1-7998-7653-3.ch003>

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

109

Giffett-Swan, J. (2017). The challenges of online learning: Supporting and engaging the isolated learner. *Journal of Learning Design*, *10*(1), 20-30. 10. 20.

10.5204/jld.v9i3.293.

Ginting, D. (2021). Student engagement and factors affecting active learning in English language teaching. *VELES (Voices of English Language Education Society)*, *5*(2),

215-228. <http://dx.doi.org/10.29408/veles.v5i2.3968>

Gray, D. (2014). *Doing research in the real world*. Sage

<https://www.sagepub.com/sites/default/files/upm->

[binaries/58626_Gray__Doing_Research_in_the_Real_World.pdf](https://www.sagepub.com/sites/default/files/upm-binaries/58626_Gray__Doing_Research_in_the_Real_World.pdf)

Groenewald, T. (2004). A phenomenological research design illustrated. *International Journal of Qualitative Methods*. 42-55.

<http://dx.doi.org/10.1177/160940690400300104>

Handal, B., Campbell, C., Cavanagh, M., Petocz, P., & Kelly, N. (2016). Technological pedagogical content knowledge of secondary mathematics teachers.

Contemporary Issues in Technology And Teacher Education Journal. *13*(1).

<https://citejournal.org/volume-13/issue-1-13/mathematics/technological-pedagogical-content-knowledge-of-secondary-mathematics-teachers>

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

110

- Hernando-Malipot, M. (2020) . 93 percent of public schools already received online gadgets-depEd. *Manila Bulletin*. <https://mb.com.ph/2020/08/25/93-percent-of-public-schools-already-received-online-gadgets-deped/#:~:text=93%20percent%20of%20public%20schools%20already%20received>
- Hidalgo, J. (2023). Three billion people have no internet access: Why teaching programs work better than subsidies - EPoS economic research center reports. <https://www.businesswire.com/news/home/20230912349294/en/3-Billion-People-have-No-Internet-Access-Why-Teaching-Programs-Work-Better-than-Subsidies---EPoS-Economic-Research-Center-Reports>
- Hinson, J. M., & LaPrairie, K. N. (2005). Learning to Teach Online: Promoting Success through Professional Development. *Community College Journal of Research and Practice*, 29(6), 483–493. <https://doi.org/10.1080/10668920590934198>
- Hollister, B., Nair, P., Hill-Lindsay, S., & Chukoskie, L. (2022). Engagement in online learning: student attitudes and behavior during COVID-19. In *Frontiers in education* 7. Frontiers Media SA. <https://doi.org/10.3389/feduc.2022.851019>
<http://dx.doi.org/10.31149/ijie.v4i3>
- Huah, G. L. (2021). Reflective practice and teacher research: Catalysts for teacher growth. *Universal Journal of Educational Research*, 9(6), 1306–1315. <https://doi.org/10.13189/ujer.2021.090620>

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

111

- Huang, X., Lam, S. M., Wang, C., & Xu, P. (2023). Striving for personal growth matters: The relationship between personal growth initiative, teacher engagement and instructional quality. *British Journal of Educational Psychology*, *93*(3), 658-675.
<https://doi.org/10.1111/bjep.12583>
- Hycner, R. H. (1999). Some guidelines for the phenomenological analysis of interview data. In A. Bryman & R.G. Burgess (Eds.), *Qualitative research 3*, 143-164. London: Sage.
<https://www.scirp.org/reference/referencespapers?referenceid=3400601>
- Ignacio, A.E. (2021). Online classes and learning in the Philippines during the Covid-19 pandemic. *International Journal on Integrated Education*, *4*(1), 1-6.
- Irfan, M. , Kusumaningrum, B. , Yulia, Y. & Widodo, S.A. (2020). Challenges during the pandemic: use of e-learning in mathematics learning in higher education. *STKIP SILIWANGI Journals*, *9*(2). <http://e-journal.stkipsiliwangi.ac.id/index.php/infinity/article/view/1830>
- Islam, M. Z. (2022). The issues with online classes from the point of view of undergraduate students in Bangladesh. Available at SSRN 4053955.
<http://dx.doi.org/10.2139/ssrn.4053955>
- Ismail, N. S., Bakar, N. M. A., & Wafa, S. W. W. S. S. T. (2020). Online learning challenges during pandemic COVID-19 in Malaysian higher learning institution. *Universal Journal of Educational Research*, *8*(12), 7151–7159.
<https://doi.org/10.13189/ujer.2020.081282>

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

112

Jamon, B.E. & Boholano, H. (2021). Teachers lived experiences in the new normal in Philippine public schools: A phenomenology. *International Journal of Research*, 8, 773-782.

https://www.researchgate.net/publication/350276047_Teachers_Lived_Experiences_In_The_New_Normal_In_Philippine_Public_Schools_A_Phenomenology

Johnson, N., Veletsianos, G., & Seaman, J. (2020). US faculty and administrators' experiences and approaches in the early weeks of the COVID-19 pandemic. *Online Learning*, 24(2), 6-21. <https://doi.org/10.24059/olj.v24i2.2285>

Jorm, A. F., Kitchener, B. A., Fischer, J. A., & Cvetkovski, S. (2010). Mental health first aid training by e-learning: A randomized controlled trial. *Australian & New Zealand Journal of Psychiatry*, 44(12), 1072-1081.
<https://doi.org/10.3109/00048674.2010.516426>

Kadiresan, V., Sujin, J., Ab Rahim, H., & Rasu, F. (2021). Motivating factors influencing online learning among university students: A study of a private university in Malaysia. *Journal of Social Science Studies*, 8(2), 88.
<https://ideas.repec.org/a/mth/jss88/v8y2021i2p88.html>

Kandola, A. (2020). *Coronavirus cause: origin and how it spreads*. MedicalNewsToday.
<https://www.medicalnewstoday.com/articles/coronavirus-causes>

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

113

- Karaoglu, B., & Yalçın, I. (2020). Relationship between learned resourcefulness and academic procrastination in students studying in sports departments. *International Education Studies*, *13*(7), 88-94.
<https://doi.org/10.5539/ies.v13n7p88>
- Kelly, K. (2022). Building on students' perspectives on moving to online learning during the COVID-19 pandemic. *The Canadian Journal for the Scholarship of Teaching and Learning*, *13*(1). <https://doi.org/10.5206/cjsotlrcacea.2022.1.10775>
- Khaled, A., A., W., & Evelyn, M. (2022). Challenges of online ducation for teachers and parents in the emirati school system. *European Journal of Educational Research*, *11*(4), 2345–2355. <https://doi.org/10.12973/eu-jer.11.4.2345>
- Khanal, P. (2020). Lived experience of online teaching during the COVID-19 pandemic: Implications for curriculum and teaching. *Interdisciplinary Research in Education*, *5*(1-2), 89-102. <https://doi.org/10.3126/ire.v5i1&2.34738>
- Khirwadkar, A. , Khan, S.I. , Mgombelo, J. , Obradović-Ratković, S. & Forbes, W.A. (2020). Reimagining mathematics education during the covid-19 pandemic. *A journal of educational research and practice*, *29* (2), 42-46.
<https://journals.library.brocku.ca/brocked>
- Khoi, M.N., & Anh, T. (2021). TEACHING DURING THE COVID-19 CRISIS AS REFLECTED AND SHARED ON FACEBOOK. *37*(6). <https://doi.org/10.25073/2525-2445/vnufs.4780>

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

114

- Kim, J. (2013). Influence of group size on students' participation in online discussion forums. *Computers & Education, 62*, 123-129.
<https://doi.org/10.1016/j.compedu.2012.10.025>
- Kola, A. J., & Abdulwasiu, A. A. (2023). Teachers' effective use of educational resources and their effect on students' learning. *ÜniversiteparkBülten, 12(2)*: 83-98.
<https://dx.doi.org/10.22521/unibulletin.2023.122.4>
- Kumar, K. L., & Owston, R. (2016). Evaluating e-learning accessibility by automated and student-centered methods. *Educational Technology Research and Development, 64*, 263-283. <https://eric.ed.gov/?id=EJ1094524>
- Lee, K. (2017). Rethinking the accessibility of online higher education: A historical review. *The Internet and higher education, 33*, 15-23.
<https://doi.org/10.1016/j.iheduc.2017.01.001>
- Legault, L. (2020). Intrinsic and extrinsic motivation. *Encyclopedia of personality and individual differences, 2416-2419*.
- Lester, S. (1999). An introduction to phenomenological research. Stan Lester
Developments.
https://www.researchgate.net/publication/255647619_An_introduction_to_phenomenological_research

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

116

- Marevci, F., Salihu, A. (2023). The effect of strengths/opportunities and weaknesses/challenges on online learning during the COVID-19 pandemic. *International Journal of Emerging Technologies in Learning (IJET)*, *18*(17), pp. 168–183. <https://doi.org/10.3991/ijet.v18i17.39517>
- Mateo, J. (2023). Private schools may still implement blended, full distance learning. <https://www.philstar.com/headlines/2023/08/06/2286576/private-schools-may-still-implement-blended-full-distance-learning>
- Mcber, H. (2000). *Research into teacher effectiveness*. Report for the Department of Education and Employment, UK.
- McKeithan, G. K., Rivera, M. O., Mann, L. E., & Mann, L. B. (2021). Strategies to Promote Meaningful Student Engagement in Online Settings. *Journal of Education and Training Studies*, *9*(4), 1. <https://doi.org/10.11114/jets.v9i4.5135>
- Melgaard, J., Monir, R., Lasrado, L. A., & Fagerstrøm, A. (2022). Academic procrastination and online learning during the COVID-19 pandemic. *Procedia computer science*, *196*, 117-124. <https://doi.org/10.1016/j.procs.2021.11.080>
- Meric, E. (2023). Patience as a predictor of teachers' classroom management skills. *International Online Journal of Education and Teaching (IOJET)*, *10*(2), 959-982. doi:10(2):959-982
- Merriam-Webster. (n.d.). In *Merriam-Webster.com dictionary*. <https://www.merriam-webster.com/dictionary/trial>

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

117

- Mishra, P., & Shah, T. (2022). Exploring the impact of math app exploration program on teachers' technology integration and students' learning outcomes. *Journal of Computer Assisted Learning*, *38*(6), 659-673.
- Moerschbach, M., & Hiebert, J. (2014). Blended learning in mathematics: Balancing the virtual with the real. *ZDM Mathematics Education*, *46*(5), 507-519.
<https://doi.org/10.1007/s11858-014-0620-0>
- Moreno-Guerrero, A.-J., Aznar-Díaz, I., Cáceres-Reche, P., & Alonso-García, S. (2020). E-learning in the teaching of mathematics: an educational experience in adult high school. *Mathematics*, *8*(5), 840. MDPI AG.
<http://dx.doi.org/10.3390/math8050840>
- Morrow, R., Rodriguez, N., & King, N. (2015). Colaizzi's descriptive phenomenological method. *The Psychologist*, *28*(8).
https://eprints.hud.ac.uk/id/eprint/26984/1/Morrow_et_a
- Mosleh, S. M., Kasasbeha, M. A., Aljawarneh, Y. M., Alrimawi, I., & Saifan, A. R. (2022). The impact of online teaching on stress and burnout of academics during the transition to remote teaching from home. *BMC Medical Education*, *22*(1), 475.
<https://doi.org/10.1186/s12909-022-03496-3>
- Muir, T., Deed, C., Thomas, D., & Emery, S. (2021). Achieving Teacher Professional Growth Through Professional Experimentation and Changes in Pedagogical Practices. *Australian Journal of Teacher Education*, *46*(9), 22–38.
<https://doi.org/10.14221/ajte.2021v46n9.2>

- Mufenga, E. M. & Marban, J.M. (2020). Prospective teachers' online learning mathematics activities in the age of covid-19: a cluster analysis approach. *Modestum*, 16(9), 1872. <https://doi.org/10.29333/ejmste/8345>
- Nasir, M., Mydin, A. A., & Abdullah, A. G. K. (2023). The influence of teacher collaboration on the teaching effectiveness in the Maldives. *Journal of Islamic*, 8(56), 86-100. doi: 10.55573/JISED.085609
- Ni Fhloinn, E., & Fitzmaurice, O. (2021). Challenges and opportunities: experiences of mathematics lecturers engaged in emergency remote teaching during the COVID-19 Pandemic. *Mathematics*, 9(18), 2303. <https://doi.org/10.3390/math9182303>
- Nortey, S., & Bodjawah, E. (2015). Submission of art studio-based assignments: Students experience. *Journal of Science and Technology (Ghana)*, 34(3), 88. <https://doi.org/10.4314/just.v34i3.10>
- Nurohmat N., Ingratubun, A., & Suminta, D. (2023). online learning and its impacts on teachers' workloads. *JEELL (Journal of English Education, Linguistics and Literature) English Department of STKIP PGRI Jombang/*JEELL (Journal of English Education, Linguistics and Literature) English Departement of STKIP PGRI Jombang, 10(1), 34–34. <https://doi.org/10.32682/jeell.v10i1.3188>
- Oliveira, A. W., & Lathrop, R. (2022). Toward a curiosity mindset: Reframing the problem of student disengagement from classroom instruction. *The European Educational Researcher*, 313–317. <https://doi.org/10.31757/euer.535>

Oxford's Learner's Dictionaries. (2021). Oxford University Press.

https://www.oxfordlearnersdictionaries.com/definition/american_english/challenge_1

Ozdamli, F., & Karagozlu, D. (2022). Online education during the pandemic: A systematic literature review. *International Journal of Emerging Technologies in Learning (IJET)*, *17*(16), 167–193. <https://doi.org/10.3991/ijet.v17i16.32287>

Ozkara, B. Ö., & Cakir, H. (2018). Participation in online courses from the students' perspective. *interactive learning environments*, *26*(7), 924–942.
<https://doi.org/10.1080/10494820.2017.1421562>

Patrinós, H.A. , Vegas, E. & Carter-Rau, R. (2022). An analysis of COVID-19 student learning loss.
<https://education4resilience.iiep.unesco.org/index.php/resources/2022/analysis-covid-19-student-learning-loss>

Pinatil, L. L., & Ramos, A. (2023). Theory of Adaptation of Educators Teaching Technology-Based Courses. *Recoletos Multidisciplinary Research Journal*, *11*(1), 103–118. <https://doi.org/10.32871/rmrj2311.01.08>

Polkinghorne, D.E. (1989). *Phenomenological research methods*. In R.S. Valle & S. Halling (Eds.), *Existential-phenomenological perspectives in psychology*, 41-60. New York: Plenum. https://www.sagepub.com/sites/default/files/upm-binaries/13421_Chapter4.pdf

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

120

- Ramadani, A. & Xhaferi, B. (2020). Teachers' experiences with online teaching using the zoom platform with EFL teachers in high schools in Kumanova. *SEEU Review*, 15(1), 142-155. <https://doi.org/10.2478/seeur-2020-0009>
- Ramolobe, K. S., Malatji, M., & Mavuso, S. (2024). An evaluation of venue capacity constraints on teaching and learning in higher education. *Transformation in Higher Education*, 10.4102/the.v9i0.328. <https://doi.org/10.4102/the.v9i0.328>
- Ratnasari, D., & Haryanto, H. (2019). Analysis of utilization of gadgets as effective learning media in innovation education to improve student learning achievement. *KnE Social Sciences*, 460-467.
<http://dx.doi.org/10.18502/kss.v3i17.4671>
- Rehman, A.A. & Alharthi, K. (2016). An introduction to research paradigms. *International Journal of Educational Investigations*, 3(8), 51-59.
<http://www.ijeionline.com/attachments/article/57/IJEI.Vol.3.No.8.05.pdf>
- Reiter, P., & Tatlock, J. C. (2020). Enhancing Student Engagement Online. *Advances in Educational Technologies and Instructional Design Book Series*, 170–188.
<https://doi.org/10.4018/978-1-7998-2132-8.ch010>
- Richards, K., & Thompson, B. (2023). Challenges and instructor strategies for transitioning to online learning during and after the COVID-19 pandemic: a review of literature. *Frontiers in Communication*, 8.
<https://doi.org/10.3389/fcomm.2023.1260421>

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

121

- Rizvi, Y.S. & Nabi, A. (2021). Transformation of learning from real to virtual: an exploratory descriptive analysis of issues. *Journal of Research in Innovative Teaching, 14(1)*, 5-17. <https://doi.org/10.1108/JRIT-10-2020-0052>
- Rosales, R.J. & Pagsuyoin, J.C. (2021). Entering a new academic year: the problem faced in online learning amid COVID-19 pandemic. *Journal of Public Health, 44(3)*, e463-e464. <https://doi.org/10.1093/pubmed/fdab299>
- Santelli, B., Robertson, S. N., Larson, E. K., & Humphrey, S. (2020). Procrastination and Delayed Assignment Submissions: Student and Faculty Perceptions of Late Point Policy and Grace. *Online Learning, 24(3)*. <https://doi.org/10.24059/olj.v24i3.2302>
- Sawchuck, S. & Sparks S.D. (2020). What research says about Covid-19 and math learning loss. *Educ. Week, 40(15)*, 3-5.
https://ew.edweek.org/nxtbooks/epe/ew_12022020/index.php?startid=3#/p/2
- Schwieb, R. A., & Misra, S. (2022). Visually engaging learning experiences: Principles and best practices. *International Journal of Educational Technology, 23(1)*, 3-19.
- Shadiev, R., & Liu, J. (2023). Review of research on applications of speech recognition technology to assist language learning. *ReCALL, 1-15*.
[doi:10.1017/S095834402200012X](https://doi.org/10.1017/S095834402200012X)
- Siemens, G. (2005). Connectivism: A learning theory for the digital age.
https://www.itdl.org/Journal/Jan_05/article01.htm
- Simonson, M. and Berg, Gary A. (2016). *Distance learning. Encyclopedia Britannica*.
<https://www.britannica.com/topic/distance-learning>

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

122

- Skaalvik, E. M., & Skaalvik, S. (2019). Motivating students in online learning environments: A review of the literature. *International Journal of Educational Technology in Higher Education*, *16*(1), 13.
- Smith, K., Jones-Johnson, G., True-Funk, A., Poleacovschi, C., Feinstein, S., & Luster-Teasley, S. (2021). Intersectional engineers: Diversity of gender and race microaggressions and their effects in engineering education. *Journal of Management in Engineering*, *37*(3), 04021002.
[http://dx.doi.org/10.1061/\(ASCE\)ME.1943-5479.0000889](http://dx.doi.org/10.1061/(ASCE)ME.1943-5479.0000889)
- Smith, L., Gardner, B., Aggio, D., & Hamer, M. (2015). Association between participation in outdoor play and sport at 10 years old with physical activity in adulthood. *Preventive medicine*, *74*, 31-35. <https://doi.org/10.1016/j.ypmed.2015.02.004>
- Sprott, R. A. (2019). Factors that foster and deter advanced teachers' professional development. *Teaching and Teacher Education*, *77*, 321–331.
<https://doi.org/10.1016/j.tate.2018.11.001>
- Ștefan, E. G. (2019). Utilizarea tehnologiilor informaționale în dezvoltarea competențelor cadrelor didactice. *Revistă de Științe Socio-Umane = Journal of Social and Human Sciences*, *42*(2), 95–101. <https://doi.org/10.46727/jshs.2019.v42.i2.p95-101>

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

123

- Stone, C. (2017). Opportunity through online learning: Improving student access, participation and success in higher education. https://www.ncsehe.edu.au/wp-content/uploads/2022/06/CathyStone_EQUITY-FELLOWSHIP-FINAL-REPORT-1.pdf
- Subedi, K.R. (2021). Determining the sample in qualitative research. *Scholars' Journal*, 4, 1-13. <https://files.eric.ed.gov/fulltext/ED618228.pdf>
- Tacy, J. W. (2016). Technostress: A concept analysis. *On-Line Journal of Nursing Informatics*, 20(2).
https://www.researchgate.net/publication/316504681_Technostress_A_concept_analysis
- Tamah, S. M., & Wirjawan, J. V. (2021). Teachers' response to a challenge to change: A portrait of teacher resilience to a professional development program. *Power and Education*, 175774382110526. <https://doi.org/10.1177/17577438211052647>
- Teacher Certification Degrees (2021). *Math Teacher Career Guide*.
<https://www.teachercertificationdegrees.com/careers/math-teacher/>
- Teachers Guide for Teachers in Using the MELCs in MATH - education - Studocu. (n.d.)*.
Studocu. <https://www.studocu.com/ph/document/makato-integrated-school/education/teachers-guide-for-teachers-in-using-the-melcs-in-math/62803513>

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

124

- Tiamzon, A.L. (2021). Mathematics in the new normal.
<https://www.pressreader.com/philippines/sunstar-pampanga/20210503/281621013197552>
- Todd, C., & Carver, L. (2017). ONLINE STUDENT RESPONSIBILITIES AND INSTITUTIONAL VALUES. EDULEARN Proceedings.
<https://doi.org/10.21125/edulearn.2017.0785>
- Tomaszewski, W., Xiang, N., Huang, Y., Western, M., McCourt, B., & McCarthy, I. (2022). The Impact of Effective Teaching Practices on Academic Achievement When Mediated by Student Engagement: Evidence from Australian High Schools. *Education Sciences*, *12*(5), 358. <https://doi.org/10.3390/educsci12050358>
- Ubabuddin. (2020). A study review of active learning strategy in improving students' learning motivation. *IJGIE (International Journal of Graduate of Islamic Education)*, *1*(1), 8–15. <https://doi.org/10.37567/ijgie.v1i1.19>
- VanLone, J., Pansé-Barone, C., & Long, K. (2022). Teacher preparation and the COVID-19 disruption: Understanding the impact and implications for novice teachers. *International Journal of Educational Research Open*, *3*, 100120. <https://doi.org/10.1016/j.ijedro.2021.100120>
- Varela, D.G. & Fedynich, L.C. (2021). Teaching from a social distance: Teacher experiences in the age of COVID-19. *Research in Higher Education Journal*, *39*, 1-20. <https://eric.ed.gov/?id=EJ1293887>

- Wang, X., Zhao, Y., & Yuan, X. (2023). Understanding pre-service teachers' development of online pedagogies during COVID-19: A thematic analysis. *Educational Technology Research and Development*, *71*(1), 33-54.
- Wayan Maba, Ida Bagus Nyoman Mantra, & Ida Ayu Made Sri Widiastuti. (2023). TEACHERS OF 21ST CENTURY: TEACHERS' ROLES, STRATEGIES INNOVATION AND CHALLENGES. *International Journal of Social Science*, *2*(6), 2405–2412. <https://doi.org/10.53625/ijss.v2i6.5473>
- Wen, J. (2023). Challenges of Online Teaching During COVID-19 in the Context of Higher Education: From Teachers Perspectives. *Lecture Notes in Education Psychology and Public Media*, *8*(1), 291–298. <https://doi.org/10.54254/2753-7048/8/20230160>
- Wenning, C. J., & Vieyra, R. E. (2020). Professional Practice and Growth. 1–16. https://doi.org/10.1063/9780735422056_013
- Whiter, K. A. (2020). Strategies for Engaging Students in the Online Environment. *Advances in Educational Technologies and Instructional Design Book Series*, 305–326. <https://doi.org/10.4018/978-1-7998-0119-1.ch017>
- World Health Organization. (2021). *Coronavirus*. https://www.who.int/health-topics/coronavirus#tab=tab_1

WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

126

Zafun, J. G. (2023). The teachers' utilization of the most essential learning competencies (MELCS) and its relation to the learning development of grade six pupils in a public school in the Philippines: basis for a proposed program. *International Journal of Multidisciplinary: Applied Business and Education Research*, 4(6), 1888–1903. <https://doi.org/10.11594/ijmaber.04.06.15>