SECONDARY SCHOOL MATHEMATICS TEACHERS' UTILIZATION OF DERIVED LEARNINGS FROM THE WEBINARS ATTENDED DURING THE PANDEMIC: BASIS FOR DESIGNING AN ONLINE LEARNING AND DEVELOPMENT

Apple J. Nicolas

Saint Mary's University Philippines

Abstract

COVID-19 has affected how teachers participate in various learning and development programs. This phenomenon has caused educational institutions to organize webinars to equip the teachers with the necessary knowledge and skills needed in teaching during the pandemic. This study evaluated the webinars initiated by the Division of Nueva Vizcaya and participated in by 173 secondary school mathematics teachers (SSMT) of the Schools Division Office of Nueva Vizcaya. These webinars with foci based on the domains of the Philippine Professional Standards for Teachers (PPST) were participated in for the school year 2020-2021. Kirkpatrick's training evaluation model focused on the first and third levels namely reaction and behavior was used. The mixed-methods approach, particularly explanatory sequential mixed method design was utilized with survey questionnaire, interviews and document review as data gathering tools. The study revealed that SSMTs considered the activities in the webinars as useful and relevant based on evidences obtained related to the Kirkpatrick's Training Evaluation Model with reaction and behavior. Derived learnings of the SSMT were applied for the purpose of improving the learners' performances; however, knowledge and skills gained in ICT-related strategies and online teaching were not utilized. The Project ARTIST (Assessment and Reporting Tools and Innovative Strategies in Teaching Diverse Learners) focusing on the domains on diversity of learners and assessment and reporting may be used by DepEd Nueva Vizcaya and actualization of these derived learnings should be shared and monitored for the purpose of the "return of investment".

Keywords : Behavior, derived learnings, Kirkpatrick's evaluation model, PPST

Introduction

Teachers, as the backbone of the education sector, must engage in continual professional Learning and Development (L&D) since it has become highly relevant, particularly in coping with the changing demands of the teaching profession (Diaz, 2020). According to Boholano and Jamon (2021), various activities such as seminars, training, workshops, and conferences are vital for teachers to develop and improve their teaching method, technological, and subject expertise. These are important initiatives aimed at increasing education quality in the Philippines, with the idea that well-equipped teachers can offer high-quality instruction and develop internationally competitive students.

But then COVID-19 has affected how teachers participate in various learning and development programs. This phenomenon has caused educational institutions to organize webinars to equip the teachers with the necessary knowledge and skills needed in teaching during pandemic (Dizon et al., 2021; Gottlieb et al., 2020; Obana, 2020; Tadese & Muluye, 2020; Toquero & Talidong, 2020).

Nevertheless, nowadays, digital technologies are increasingly utilized for training and human resource development (Ahrens et al., 2016; Liu et al., 2016; Nicklen et al., 2016). Webinars are a common choice among digital tools and infrastructures for training in distance education and blended learning programs. Webinars include virtual lectures, e-conferences, web-based seminars, and etc. In 1998, Eric Kolb coined the term "webinar" by combining the terms "web" and "seminar". Researchers define webinars as online learning tools wherein participants gather, present, or exchange information and ask questions or clarify queries (Tanucan & Uytico, 2021; Prasetyono & Christian, 2020; Nambi, et al., 2020; Gegenfurtner & Ebner, 2019; Avila et al., 2017 Ahrens et al., 2016; and Schmelzer et al., 2016). It is a technological tool that is utilized to execute professional learning and development in the form of seminars (McKinney, 2017), and with the aid of audio and video, and exchange of information though its participants are located

in various places (Gegenfurtner, et al., 2020; Mihai, 2014; and Leiser, et al., 2018). The primary purpose of webinars is to help the audience enhance their knowledge and update their skills by inputting the latest techniques and methods learned related to their respective fields (Rao, 2019 and Lapada, et al., 2020).

Webinar is also regarded as cost-effective way to improve the participants' pedagogical abilities (Mohalik & Poddar, 2020; Nambi, 2020; Alshahrani, 2019; Ebner & Gegenfurtner, 2019; Gegnefurtner & Ebner, 2019; Knipfer et al., 2019; Smirnova et al., 2019; Thul-Sigler & Colozzi, 2019; Malik et al., 2017; Nguyen, 2015). It is also worth noting how resources were saved during the epidemic since travel, hotel, and meal expenditures were no longer necessary because participants had to stay at home during webinars (Jarvis et al., 2020; Ebner & Gegenfurtner, 2019). One of the advantages of webinars is that they save participants' time by minimizing the need to attend in-person training sessions (Toquero, 2020; Toquero & Talidong, 2020; and Alshaharani, 2019). Audio-visual systems such as Zoom, Cisco Webex, GoToMeeting, Google Hangout, and Google Meet were popular online platforms (Rundle et al., 2020).

However, in conducting professional development programs, it is necessary to determine if participants are utilizing what they have learned from the program because assessing the change in the participant's behavior will make it possible to figure out if the knowledge, skills, or mindset taught in the program are being used or applied by the participants (James, 2016). Kirkpatrick's evaluation model has been utilized by researchers to assess the efficacy of web-based training for teachers revealing that using Kirkpatrick's form of evaluation was suitable to evaluate web-based training and various researchers; as such, they have recommended the use of the said evaluation model (Alsalamah & Callinan, 2021; Diaz, 2020; Ebner and Gegenfurtner, 2019; Eugenio & De Garcia, 2019; Piryani et al., 2018; Zheng et al., 2013; Farjad, 2012). This particular evaluation model focuses on 4 main areas: reaction, learning, behavior, and results. The first level assesses participants' satisfaction with the training program. Level two evaluates trainees' knowledge increases, abilities, and attitude improvements. Level three focuses on whether students can use information and skills obtained during training in their daily jobs. The last level focuses on trainees' final organizational improvements. However, this study only utilized the first and third levels of the Kirkpatrick's evaluation model, in which the researcher assessed the participants' reactions, particularly their satisfaction with the training, and whether the trainees applied the knowledge and skills they have gained throughout the webinar program.

The researcher believes that one of the many approaches to accomplishing the goals of mathematics education despite the numerous challenges delivered by this pandemic is thru the exposure of teachers to continuing professional learning and development with the help of digital technology. The very aim of the professional endeavors of teachers, such as attending webinars, is to help them cope with the new normal situation and to promote the quality of teaching to learners that will improve their performance. Virtual conferences and webinars provide teachers with possibilities for learning and training, but their impacts and efficacy must be determined. It is still unclear if teachers actually learn from them or like participating in virtual activities or webinars. Based on a thorough assessment of the literature and research, no study has detailed how webinar participants apply what they learned in their present job. Evaluation of how participants apply the acquired learning from attending such events to their present job is one approach to assessing the efficacy of a particular activity. Also, no studies have tried to classify the webinars' content with the professional training standards. Instead, topics of professional L&D conducted face-to-face or even in virtual mode were required to be aligned with the specific standards of professional training since the Philippines has adopted and strictly implemented a precise standard for professional learning and development.

This study focused on exploring the various webinars initiated by DepEd Nueva Vizcaya during the COVID-19 pandemic. Specifically, it determined the description of the webinars in terms of organizational aspects, applications used by the provider, tools used by the participants, webinars' classifications in terms of the PPST domains, efficiency of the resource persons and instructional design and delivery. It also explored the experiences of the secondary school mathematics teachers who participated in the Division's webinars and determined the utilization and reasons for non-utilization of the learning acquired from the webinars in their professional careers.

Materials and Methods

This investigation was conducted in the Schools Division of Nueva Vizcaya that involved 173 secondary school mathematics teachers who have participated in webinars conducted by the DepEd division of Nueva Vizcaya and secondary schools in the Division of Nueva Vizcaya.

Mixed methods of research, particularly explanatory sequential mixed method design was utilized in order to provide a comprehensive analysis of the research problems. The study utilized an online survey questionnaire and a researcher-made interview guide questionnaire. Ten (10) SSMTs were interviewed. The researcher conducted document review for better results of the study and to support the findings. Descriptive statistics such as mean, and standard deviation were used. Document review was done. Axial and open coding systems were used to determine the extent of utilization as well as the reason of not utilizing the knowledge learned from the webinars.

Throughout the conduct of the study, ethical considerations were strictly followed. It is to protect the rights and identity of each respondent and inter-rater of this study. The communication letters such as, permit to conduct a study in the Schools Division of Nueva Vizcaya, permit to conduct document scanning, and permit to conduct interview with the SSMTs were sent and addressed to the concerned people. The researcher explained the research goals and objectives through a letter of communication addressed to the Superintendent of SDO-Nueva Vizcaya. The target respondents, the systematics research techniques and procedures, as well as the intended outcomes of the study were all presented. After the approval letter, the researcher began to gather the necessary data. Since the researcher was only permitted to conduct data gathering through online communication, she discussed the research goals to the respondents through a consent form in Google Form. After they agreed and filled up the consent form to participate, they were asked to share information about the webinars they have attended. Afterwards, another letter was sent to them asking if they were willing to participate in the interview session in determining the utilization and reason for non-utilization of the knowledge gained from the webinars attended. After they agreed, a schedule was set for the interview session. Confidentiality of the data was maintained through assigning codes to the respondents' profile, responses to the questionnaire, and interview questions. The researcher declares that there is no conflict of interest regarding the conduct of the study. There was no risk imposed to the participants as their participation is completely voluntary and confidential.

Results and Discussions

The findings of the study are divided into 3 sections. The first section pertains to the different webinars attended by the secondary mathematics teachers in preparation for the new normal in terms of organizational aspect, efficiency of resource persons, instructional design and delivery, personal experiences, and PPST domains. The second section presents the personal experiences of the secondary mathematics teachers in the webinars attended in the new normal and the reasons of utilizations and non-utilizations of the gained knowledge and skills from the webinars. Meanwhile, the third section shows the proposed plan for a webinar for the SSMTs. This section was carefully developed based on the analysis of the findings presented in the first and second sections.

Table 1. Summary of Findings for Sections 1 and 2

	Determining webinars in terms of:	Findings
	Organizational aspect	
	a.1 Duration	Most of the webinars were conducted in 2 days
	a.2 Category	Most of the webinars were categorized as Division level
	a.3 Resources	Majority of the webinars were HRTD- funded
	a.4 Provider of the webinar	Most of the webinars were provided by the DepEd Division of Nueva Vizcaya
SECTION 1	a.5 Application used	Most of the webinar providers used Google Meet but used other applications as backup in accommodating other participants
	a.6 Tools used	Most of the participants utilized their phones in attending the webinars
	Efficiency of the resource persons	All the webinars were rated high marks as to the session facilitator
	Instructional design and delivery	The instructional design and delivery were rated to be outstanding

	PPST Domains	All the webinars were conducted along personal growth and professional development, curriculum and planning, learning and environment, and community linkages and professional development. The SSMTs have limited participation in webinars that dwell on the content and pedagogy, diversity of learners, and assessment and reporting.
SECTION 2	*Personal experiences of the SSMTs*	The SSMTs were taught various topics, including knowledge acquisition, skills integration, and affective development. Based on their experience, they considered the topics useful in teaching-learning process and school operations.
	Reasons for utilizations and non-utilizations of the acquired knowledge from the webinars	The teachers found the webinar useful, but generally they are not able to utilize the knowledge learned, particularly on the ICT-related topic demonstrated by the speaker.

Based on the findings, the webinars attended by the secondary mathematics teachers of the Schools Division of Nueva Vizcaya were conducted in two (2) days which is equivalent to 16 hours and most of the webinars initiated by the DepEd-Nueva Vizcaya were conducted at the division level and majority of them were HTRD-funded. A big percentage of the provider with a greater number is in the Division Office, DepEd Nueva Vizcaya. The webinar organizer or provider utilized Google Meet (GM) as a primary application and used other application as back up in accommodating other participants. Mobile phones are the most common device used by the SSMTs in attending the webinars. All the webinars were rated with high marks- outstanding as to the session facilitators' knowledge and skills. Also, program management and operations and the evaluation on program were rated to be of "outstanding". The activities of these webinars were conducted along personal growth and professional development, curriculum and planning, content and pedagogy, learning environment and community linkages and professional engagement. The SSMTs have limited participation in webinars that dwell on the diversity of learners, assessment and reporting, and content and pedagogy. The SSMTs were taught various topics, including knowledge acquisition, skills integration, and affective development. Based on their experience, they considered the topics useful in teaching-learning process and school operations. Lastly, the teachers found the webinar useful, but generally they are not able to utilize the knowledge learned, particularly on the ICT-related topic demonstrated by the speaker.

These findings serve as a springboard for the researcher in designing and planning a webinar for the SSMTs. It was also found out that most of the 18 webinars considered domains 2,4,6, and 7, and only two considered domain 3 (diversity of learners), three considered domain 5 (assessing and reporting), and only seven considered domain 1 (content and pedagogy). Because of this apparent result, learning action cell (LAC) sessions on teaching strategies with intellectual discussions to improve teaching strategies that respond to the learners' diversity needed to be the core of mathematics teachers. Further, this L&D-webinar was designed to address the needs of mathematics teachers in the Nueva Vizcaya division based on this study's result.

A webinar entitled 2022 Division Webinar on Project ARTIST (Assessment and Reporting Tools and Innovative Strategies in Teaching Diverse Learners) was designed with the purpose of addressing the needs of mathematics teachers in the Nueva Vizcaya division (See Appendix X) in order to strengthen the utilization of the webinars in their professional careers.

Based on the table 2 presented, the duration of the webinar on ARTIST is 3 days to cater all the topics prepared that are relevant to Domain 1 (content and pedagogy), domain 3 (innovative strategies in teaching diverse learners) and domain 5 (assessment and reporting) since in the previous webinars conducted in the Division, these 3 domains were poorly captured. This webinar is categorized as Division level and open to all SSMTs in the Division. Resources of the webinar will be charged against school MOOE subject to the usual budgeting, accounting, and auditing rules and regulation. The provider of the webinar will be the DepEd Division of Nueva Vizcaya. The application to be used will be Google Meet as a primary application and other applications as a backup in accommodating other participants. The participants are encouraged to use laptop, personal computers or mobile phones. The webinar requires speakers who are experts in Interim Guidelines for Assessment and Grading in Light of BELCP; Interactive Discussion and Assessment through Classpoint; Written Assessment through Google Forms Introducing the 4-Part Mathematics Framework and connect these to the content areas of mathematics and strategies for teaching culturally diverse

students. Instructional design and delivery will be evaluated after the session through a survey among the participants. To enhance the experiences of the participants of the webinar, several activities that involve their active participation were included. the PPST domains that are addressed in this webinar are Domain 1 (content and pedagogy), Domain 3 (assessment and reporting tools), and Domain 5 (innovative strategies in teaching diverse learners).

Table 2. Summary of Topics in the Proposed Webinar and its Expected Utilization

	Proposed Topic	Utilization (Who will use and how they may use the knowledge to be acquired)	Modality of the Proposed Topic
Day 1	Topic 1. *Interim Guidelines for Assessment and Grading in Light of BELCP*	The knowledge that teachers will gain in this topic will serve as a guide in assessing their students' learning and developing a grading scheme in light of the BELCP based on DO 31 s. 2020.	Virtual
	Topic 2. *Interactive Discussion and Assessment through Classpoint*	The knowledge and skills that the teachers may obtain from this topic will help them build a strong, live engagement with their students during discussion. It may also assist them to assess the students' capabilities and improve their learning outcomes.	Virtual
	Topic 3. *Written Assessment through Google Forms*	Teachers may use the obtained knowledge in the discussion of this topic in gathering information from the learners, particularly in assessing their learning. They may use Google forms for self-grading quizzes and tests for their learners.	Virtual
Day 2	Topic 1. *Introducing the 4-Part Mathematics Framework and Connecting it to the different Content areas of Mathematics*	The knowledge and skills they will learn from this webinar will help the teachers leverage visuals to make connections with the different mathematics content areas by incorporating the 4-Part Math Framework into their lessons. This particular framework explores specific real word examples related to the content areas of mathematics. Teachers may utilize it to make the lesson more realistic.	Virtual
Day 3	Topic 1. *Strategies for Teaching Culturally Diverse Students* *1.1 Variety of instructional strategies* *1.2 Communication Strategies* *1.3 Content Mastery*	Knowledge gained from this topic will help the teachers determine what the appropriate teaching strategies are for a certain learner or group of learners from indigenous groups. It will also help them appreciate and accommodate the similarities and differences among students' cultures, encourage them to build relationships with their learners, as well as assist them focus on the ways students learn and observe students identify their task orientations.	virtual

The knowledge and skills as well as different strategies to be acquired from different proposed topics indicated in Table 2 are expected to be utilized by the SSMTs in their professional careers, whether during virtual/online or face-to-face teaching. Those topics are carefully chosen by the researcher to help and assist the SSMTs respond to the learners' diversity needed to be the core of mathematics teachers in the Nueva Vizcaya division. The SSMTs may also be required to submit a re-entry action plan to ensure the utilization of the knowledge, skills, and strategies gained from the proposed webinar.

Conclusion

In light of the findings, the following conclusions were arrived at:

1. The webinar activities attended by the secondary school mathematics teachers have provided them with learning ways for their professional growth. They were equipped with concrete understanding of the content

and pedagogy needed in the new normal but they need to be equipped on PPST domains on content and pedagogy, assessment and reporting, and diversity of learners.

2.   The SSMTs found the webinar useful but generally they are not able to utilize them because such cannot be applied in their context due to unavailability of ICT gadgets and/or no possibilities for online teaching.

3.   A proposed webinar activity entitled Project ARTIST is recommended based on the findings along the PPST domain such as on content and pedagogy, diversity of learners, and assessment and reporting.

Acknowledgement

References

Ahrens, A., Zascerinska, J., Ramar, H., & Andreeva, N. (2016). Educators' opinion on webinars in higher education. Society integration education, 1,. Doi: http://dx.doi.org/10.17770/sei2016vol1.1488

Alsalamah, A., & Callinan, C. (2021). Adaptation of Kirkpatrick's four-level model of training criteria to evaluate training programs for head teacher. Education Sciences, 11(3):116. https://doi.org/10.3390/educsci11030116

Al-Shahrani I. (2019). Orienting Faculty and Students with Online Teaching Webinar Experiences in Saudi Arabia. Ann Med Health Sci Res. 9:443-447

Avila, C., Quinn, V., Geiger, A., Kerby, T., Charles, M., & Clough-Gorr, K., (2011). Webinar training: An acceptable, feasible and effective approach for multi-site medical record abstraction: The BOWII experiences. BMC Research Notes, 4(430). Doi:10.118611756-0500-4-430

Boholano, H., Merin, J., & Dapat, L. (2021) The lived experiences of Basic Education Teachers during Virtual Conferences. Solid State Technology 64(2), http://10.13140/RG.2.2.26690.50882

Diaz, H. (2020). Impact of professional learning and development activities participated in by secondary school mathematics teachers through Kirkpatrick's evaluation levels [Unpublished research, Saint Mary's University].

Dizon, R., De Guzman, M., & Orge, N. (2021). Training needs on learning delivery modalities of senior high school teachers of Zambales, Philippines: Response to the changes in the basic education during the pandemic. EAS Journal of Humanities and Cultural Stud, 3(1), 43-50. https://doi.org/10.1080/08923647.2019.1663082.

Ebner, C., & Gegenfurtner, A. (2019). Learning and satisfaction in webinar, online, and face-to-face instruction: A meta-analysis. Frontiers Media S.A. https://doi.org/10.3389/feduc.2019.00092

Eugenio, M. & De Gracia, R. (2019) Learning and development of SDO Nueva Vizcaya through Kirkpatrick's model: An organizational analysis. (Unpublish Research). SDO Nueva Vizcaya.

Farjad, S. (2012). The evaluation effectiveness of training courses in university by Kirkpatrick model [Case study, Islamshahr University]. Procedia-Social and Behavioral Sciences, 46, 2837-2841.

Gegenfurtner, A., & Ebner, C. (2019). Webinars in higher education professional training: A meta-analysis systematic review of randomized controlled trials. Educ. Res. Rev. 10.1016/j.edurev.2019.100293

Gegenfurtner A., Zitt, A., & Ebner, C. (2020). Evaluating webinar-based training: a mixed methods study of trainee reactions toward digital web conferencing. International Journal of   Training and   Development. 24(1), 5-21. https://doi.org:10.1111/ijtd.12167

Gottlieb, M., Landry, A., Egan, D., Shappell, E., Bailitz, J., & Horowtz, R. (2020). Rethinking residency conferences in the era of COVID-19. AEM Education and Training A global Journal of Emergency Care 4(3), https://doi.org/10.1002/aet2.10449.

James, O. (2016). Analyzing learning effectiveness. Retrieved from https://www.mindtools.com/pages/article/kirkpatrick.htm

Jarvis, T., Weiman, S., & Johnson, D. (2020). Reimagining scientific conferences during the pandemic and beyond. Science Advances, 6(38). DOI: 10.1126/sciadv.abe5815

Knipfer, C., Wagner, F., Knipfer, K., Millesi, G., Acero, J., Hueto, J., & Nkenki, E. (2019). Learners' acceptance of a webinar for continuing medical education. International Journal of Oral and Maxillofacial Surgery, 48(6), 841-846. doi.org/10.1016/j.ijom.2018.11010

Lapada, A., Miguel, F., Robledo, D., & Alam, Z. (2020). Teachers' Covid19 awareness, distance learning education experiences and perceptions towards institutional readiness and challenges. International Journal of Learning, Teaching and Educational Research, 19(6), 127–144. https://doi.org/10.26803/ijlter.19.6.8

Lieser, P., Taf, S., & Murphy-Hagan, A. (2018). The Webinar Integration Tool: A Framework for Promoting Active Learning in Blended Environments. Journal of Interactive Media in Education. 2018(1). DOI: https://doi.org/10.5334/jime.453

Liu, Q., Peng, W., Zhang, F., Hu, R., Li, Y., & Yan, W. (2016). The effectiveness of blended learning in health professions: Systematic review and meta-analysis', Journal of Medical Internet Research, 18 e2. https://doi.org/10.2196/jmir.4807

Malik, M., Umar, F., Salbani, A., & Yahaya, W., (2015). The acceptance of webinars as a training tool among engineers. Procedia-Social and Behavioral Sciences, 197,1759-1766. https://doi.org/10.1016/j.sbspro.2015.07233

McKinney, W. (2017). Assessing the evidence for the educational efficacy of webinars and related internet-based instruction. Pedagogy in Health Promotion: The Scholarship of Teaching and Learning,   3,   375-515. http://doi.org/10.1177/2373379917700876

Mihai A. (2014). The virtual classroom: Teaching European studies through webinars. European Political Science. 1(13),4- 11. doi:10.1057/eps.2013.31. https://link. springer.com/article/10.1057/eps.2013.31

Mohalik, R., & Poddar, S. (2020). Effectiveness of webinars and online workshops during COVID-19 pandemic. Available at SSRN: https://ssrn.com/abstract=3691590 or http://dx.doi.org/10.2139/ssrn.3691590

Nambi, G., Abdelbasset, W., Abodonya, A., Saleh, A., & Khanam, H. (2020). Effects of webinar-based teaching program on therapists' attitude and satisfaction of LBP patients. Arch Pharma Pract, 11(1):122-8. https://doi.org/10.3389/feduc.2019.00092

Nguyen, T. (2015). The effectiveness of online learning: Beyond no significant difference and future horizons. MERLOT The Journal of Online Teaching and Learning. 11. 309-319.

Nicklen, P., Keating, J., Paynter, S., Storr, M., & Maloney, S. (2016). Remote–online case–based learning: A comparison of remote–online and face–to–face, case– based learn-ing –a randomized controlled trial. Education for Health, 29, 195–202.   https ://doi.org/ 10.4103/1357-6283.204213

Obana, J. (2020). What will schools look like under the „new normal"? The Manila Times. P&A Grant Thornton. https://www.manilatimes.net/2020/05/13/business/ columnists-business/what-will-schools-look-likeunder-the-new-normal/724556/

Patel, R., Babady, E., Theel, E., Storch, G., Pinsky, B., St George, K., Smith, T., & Bertuzzi, S. (2020). Report from the American Society for Microbiology COVID-19 International Summit, 23 March 2020: Value of Diagnostic Testing for SARS–CoV-2/COVID-19. ASM Journals 11(2), https://doi.org/10.1128/mBio.00722-20

Piryani, R., Dhungana, G., Piryani, S., & Neupane, M. (2018). Evaluation of teachers training workshop at Kirkpatrick's level 1 using retro-pre questionnaire. Advances in Medical Evaluation and Practice, 9, 453-457. Doi:10.2147/AMEP.S154166

Prasetyono, T., & Andreas, C. (2020). Multiscreen to webinar for education beyond boarder: A review. Annual of Medicine and Surgery 59, 237-241. https://doi.org/10.1016/j.amsu.2020.09.041

Rao, P. (2019). The influence of webinars in developing teaching skills of the English language teachers: A comprehensive study in ELT. Research Journal of English Language and Literature (RJELAL), 7(4), Doi: 10.33329/rjelal.74.370

Rundle, C., Husayn, S., & Dellavalle, R. (2020). Orchestrating a virtual conference amidst the COVID-19 pandemic. Dermatology online journal, 26(7).

Schmelzer, R., Gessler, M., Kanova, I., Pokorny, I., Kovacs, Z., Kohlrusz, G., Szeili, K., Castellan, A., Corbatto, G., Gino, M., Pacifico, J., Ramos, M., Jesus, S., & Jack, R. (2016). Pedagogy of multinational realtime online trainings (webinars) for blended learnings. Hungarian Educational Research Journal, 6(3), 107-123. Doi:10.14413/HERJ.2016.03.11

Smirnova, Z., Kamenez, N., Vaganova, O., Kutepova, L., & Vezetiu, E. (2019). The experience of using the webinar in the preparation of engineering specialists. Amazonia Investiga, 8(18), 279-287. https://amazoniainvestiga.info/index.php/amazonia/article/view/307

Tadesse, S., & Muluye, W. (2020) The impact of COVID-19 pandemic on education system in developing countries: A review. Open Journal of Social Sciences, 8, 159-170. Doi: 10.4236/jss.2020.810011.

Tanucan, J., & Uytico, B. (2021). Webinar-Based Capacity Building for Teachers: "Lifeblood in Facing the New Normal of Education". Pertanika J. Soc. Sci. & Hum. 29 (2): 1035 -1053 (2021). DOI: https://doi.org/10.47836/pjssh.29.2.16

Toquero, C. (2020). Challenges and Opportunities for Higher Education amid the COVID-19 pandemic: The Philippine context. Pedagogical Research, 5(4), em0063. https://doi.org/10.29333/pr/7947

Toquero, C., & Talidong, K. (2020). Webinar technology: Developing teacher training programs for emergency remote teaching amid COVID-19. Interdiscip J Virtual Learn Med Sci., 11(3), 200-203. Doi: 10.30476/ijvlms.2020.86889.1044

Thul-Sigler, A., & Colozzi, E. (2019). Using values-based webinars interventions to facilitate career-life exploration and planning. The Career Development Quarterly, 67(3), 271-278. Doi:10.1002/cdq.12.196

Zheng, L., Huang, R., & Yu, J. (2013). Evaluation of the effectiveness of e-training: A case study on in-service teachers' training. International Conference on Advance Learning Technologies. Doi:10.1109/ICAALT.2013.71