EFL teachers' attitudes toward online teaching (ATOT): A theoretical review

Neda Kianinezhad[1*] ID

[1] English Department, Mashhad Branch, Islamic Azad University, Mashhad, Iran.

Article Info

Abstract

The emergence of online teaching has sparked significant scholarly interest, particularly regarding English as a Foreign Language (EFL) teachers' attitudes toward online teaching (ATOT). This review comprehensively examines educators' attitudes toward online teaching, focusing on EFL contexts globally and within Iran. Drawing upon theoretical frameworks such as the Technology Acceptance Model (TAM), the review emphasizes the pivotal role of educators' attitudes in integrating technology into virtual learning environments. It highlights the influence of internal factors, such as beliefs about technology, and external factors, such as infrastructure and training. Additionally, the review identifies key constructs—knowledge, appreciation, proficiency, and responsiveness—derived from Martin et al. (2019), which underpin educators' readiness for online education. Studies underscore the importance of comprehensive training, support, and policies to enhance educators' digital competencies for effective technology integration. In the Iranian context, research reveals gender disparities and the impact of variables such as education level, work environment, experience, and age on attitudes, guiding targeted strategies for technology integration (Kianinezhad, 2023). This review contributes to understanding educators' attitudes toward online teaching and offers implications for enhancing technology integration in education through tailored professional development and supportive policies. It also suggests avenues for further research to explore emerging trends and address ongoing challenges in the dynamic landscape of online education.

1 Introduction

Education, a cornerstone of personal growth, evolves alongside remarkable technological advancements (Raja & Nagasubramani, 2018; Sungur & Ateş, 2023). In an era of rapid technological advancement, the traditional education landscape is undergoing a dynamic transformation fueled by the internet's pervasive influence and digital innovation. The internet has had a widespread impact recently, catalyzing a profound digital shift in global education. Technology has become a potent tool for enhancing teaching efficiency and effectiveness (Lateef & Alaba, 2013; Taghizadeh & Basirat, 2022). In today's world, where digital natives, particularly millennials, are deeply immersed in technology, educators have a prime opportunity to enhance their digital competencies (Kalanda, 2005).

* ✉ Contact: kianinezhad.neda@gmail.com

Over the past decade, online education has gained significant traction in higher education, sparking discussions within the teaching community. While some view technology as a solution to accessibility challenges, others question its ability to entirely replace traditional teaching (Bryant, 2016; Merikko & Kivimäki, 2022; Yang et al., 2024). Besides, many educators advocate for integrating technology to enhance student performance, recognizing its paramount importance alongside digital literacy (Costley, 2014; Kianinezhad, 2023). Blended learning and online education are pivotal in higher education (Singh & Thurman, 2019).

Educators' attitudes significantly influence their preparedness for online instruction (Martin et al., 2019). The successful integration of information and communication technology (ICT) into classrooms hinges on educators' attitudes toward ICT (Taghizadeh & Basirat, 2022). Similarly, the success of online courses depends on factors such as the learning environment and students' attitudes toward ICT (Wasserman & Migdal, 2019). Understanding educators' acceptance of online teaching is crucial for equitable access to quality education (Hung, 2016; Kebritchi et al., 2017). Thus, online teaching performance relies on educators' attitudes (Wasserman & Migdal, 2019).

The attitudes of English as a Foreign Language (EFL) teachers toward online teaching garner attention as the field adapts to evolving language education (Ng et al., 2023; Rakıcıoğlu-Söylemez et al., 2019). Thus, recent research emphasizes the role of online platforms in nurturing learner autonomy and fostering self-directed learning among EFL students (Han, 2021; Pham, 2023; Yu, 2022).

Attitude, a multifaceted psychological construct, is pivotal in technology adoption (Krishnakumar & Rajesh, 2011). Various factors shape educators' attitudes toward online education, including knowledge, willingness to learn, comfort level, beliefs, and the external environment (Gardner et al., 1993; Nair & Das, 2012; Papp, 1998). Educators with positive attitudes are often more adept at adapting to new technologies (Gregory et al., 2015).

Despite favorable attitudes toward e-learning, integrating technology in classrooms remains relatively infrequent (Khukalenko et al., 2022; Suri & Sharma, 2017). Accordingly, this study aims to conduct a comprehensive theoretical review focusing on EFL teachers' attitudes toward online teaching. Drawing upon literature from international and Iranian contexts, this review synthesizes theoretical frameworks and empirical findings to elucidate the multifaceted nature of EFL teachers' attitudes toward online pedagogy.

2.1 Theoretical framework for understanding EFL teacher attitudes toward online teaching

This section explores the theoretical and conceptual framework surrounding English as a Foreign Language (EFL) teacher attitudes toward online teaching, highlighting the necessity of comprehending these attitudes for designing effective online teaching programs. That is, the rise of online teaching has revolutionized education, offering benefits like flexibility and accessibility while also presenting challenges, particularly for EFL educators.

The framework considers various factors influencing EFL teachers' attitudes toward online teaching, including internal factors like beliefs and external factors like technical support and infrastructure. Drawing on theories such as the Technology Acceptance Model (TAM) (Davis, 1986), it also discusses tools available for measuring attitudes toward technology in education (Jones & Clarke, 1994; Kay, 1993; Kisanga & Ireson, 2016; Metin et al., 2012; Teo, 2010).

Research indicates that attitudes and beliefs significantly impact how teachers integrate technology into their teaching, with concerns including insufficient planning time, technical support, and training (Allen & Seaman, 2007; Gerlich, 2005; Keengwe & Kidd, 2010). Online instructors face challenges such as workload management, communication issues, and resource limitations (Brogden & Couros, 2002; Grosse, 2004; Matsom, 2006).

Additionally, educators may lack awareness of the latest technologies and struggle with their effective integration (Hanson-Smith, 2016; Kessler, 2006). Addressing these challenges requires providing educators with appropriate training, support, and technological infrastructure investments (Lambert & Gong, 2010).

Teachers' attitudes toward online education are shaped by constructs like knowledge, appreciation, proficiency, and responsiveness (Limjuco et al., 2017; Martin et al., 2019; Mikovits, 2021; Zagzebski, 2017). Acquiring knowledge is crucial for developing proficiency and appreciation, while technical skills are essential for effective online teaching (Darabi et al., 2006; Varvel, 2007). Recognizing that attitude development is an ongoing process influenced by various factors, scholars like Eagly and Chaiken (2007) and Fazio (2007) emphasize that knowledge, feelings, and past experiences shape attitudes.

Studies have highlighted the significant correlation between online learning attitude and factors such as computer efficacy, technology attitude, and computer anxiety (Alanazy, 2017). Categorizing factors influencing teachers' attitudes into internal and external factors, Teo (2009) emphasizes that internal factors include teachers' beliefs about technology, while external factors encompass technical aspects like complexity, organizational support, infrastructure, and training (Chien et al., 2014; Rogers, 2003; Teo, 2009; Weller, 2007).

In fact, Davis' Technology Acceptance Model (TAM) (1986) identifies four constructs influencing technology acceptance: external variables, perceived usefulness, perceived ease of use, and attitude toward e-learning. Various measurement tools like "The Computer Attitude Measure" (Kay, 1993) and "The Computer Attitudes Scale for Secondary Students" (Jones & Clarke, 1994) assess attitudes towards technology; hence, Teo (2010) developed the "E-learning Acceptance Measure (EIAM)" based on factors like tutor quality, perceived usefulness, and facilitating conditions.

Furthermore, Kisanga and Ireson (2016) created the TeLRA scale to assess teachers' e-learning attitudes, focusing on four factors. Martin et al. (2019) developed a faculty readiness instrument that considers faculty attitudes toward the importance of online learning and their confidence in teaching online. Overall, this conceptual framework integrates internal and external factors influencing teachers' attitudes towards technology and online learning, drawing from established models like TAM and incorporating various measurement tools to assess teachers' attitudes in educational contexts comprehensively.

2 Methodology

The methodology employed a comprehensive review approach (Papaioannou et al., 2016), utilizing prominent academic databases such as Google Scholar, ERIC, and Web of Science. Keywords including "online teaching," "EFL teachers," "attitudes," and "Iran" guided the systematic search. Identified studies underwent rigorous critical analysis to elucidate key theoretical frameworks, influential factors, and contextual nuances impacting educators' perceptions of digital learning. Adherence to established systematic literature review guidelines

(Moher et al., 2009) ensured methodological rigor, incorporating clear inclusion/exclusion criteria, meticulous assessment of study quality, and synthesis of findings via thematic analysis (Taylor et al., 2015). The review aimed to comprehensively understand trends and contextual complexities surrounding educators' attitudes toward online teaching by integrating international and Iranian studies.

2.1 Researcher's roles and rationale for Iran as the context

The decision to focus on Iran stemmed from a deep understanding of its educational landscape and identified research gaps. As a native Iranian scholar with extensive experience in English language education, the researcher provided unique insights into the cultural, institutional, and educational context and the policy-related nuances shaping EFL teachers' attitudes in Iran. Recent studies (Kianinezhad, 2023, 2024) further enriched our understanding of the challenges and opportunities faced by Iranian EFL teachers in digital learning.

Moreover, the decision to focus on Iran was justified by the critical research gap in English language education within the Iranian context. There is a notable absence of meticulously translated, validated, and culturally adapted assessment instruments. This gap was identified through a comprehensive literature review, highlighting the pressing need for instruments that align with the intricacies of the Iranian educational landscape. In response to this urgent need, the researcher built upon Sangwan et al.'s (2021) foundational work, crafting bespoke instruments tailored explicitly for Iran. This underscores the imperative for further research to develop contextually appropriate assessment tools crucial for capturing EFL teachers' attitudes toward online teaching in Iran.

3 Related studies

3.1 International studies on educators' attitudes toward online teaching

International research extensively examines educators' attitudes toward integrating technology into language teaching, providing valuable insights into challenges and opportunities in this area. These studies emphasize the pivotal role of educators' beliefs and perceptions in shaping their readiness to adopt innovative teaching methods, highlighting the importance of adequate support and training to enhance technological proficiency and foster positive attitudes towards technology integration.

Prior studies underscore the significance of educators' attitudes in effectively incorporating technology into virtual learning environments. Gill and Dalgarno (2008) revealed that educators' beliefs significantly influence their readiness to adopt information and communication technology (ICT) in classrooms, while Kavanoz et al. (2015) found that pre-service instructors' positive views on web-based training enhance their competencies in integrating technology into teaching practices.

Moreover, innovative approaches such as teaching public speaking via Skype conference calls (Correa, 2014) and investigating user acceptance of applications like WeChat (Mei et al., 2013) shed light on diverse strategies and factors influencing technology integration. Studies by Canals and Al-Rawashdeh (2018), Gönen (2019), and Erarslan and Zehir Topkaya (2017) further explore educators' readiness and attitudes toward online courses, presenting both optimism and mixed perceptions. Additionally, students' preferences for face-to-face classes over online courses (Wright, 2017) and their attitudes toward specific learning platforms (Manowong, 2016;

Srichanyachon, 2014) reflect the complex interplay between technology and pedagogy. Besides that, recent studies in Indonesia (Anjung & Utomo, 2021; Oraif & Elyas, 2021) and Pakistan (Adnan & Anwar, 2020) underscore the importance of supportive teaching approaches and contextual factors in shaping students' perceptions of online learning.

Furthermore, investigations into educators' preparedness and training programs reveal significant gaps and challenges. Kessler (2006) and Turkmen et al. (2007) highlight dissatisfaction among pre-service teachers and a lack of awareness about the benefits of educational technology, emphasizing the need for improved training programs. Also, similar findings in Turkey (Koc & Bakir, 2010; Aydin, 2013) underscore the importance of guidance and professional development initiatives for educators.

Moreover, studies in Indonesia (Rasmitadila et al., 2020; Lestiyanawati & Widyantoro, 2020) and Bangladesh (Ramij & Sultana, 2020) emphasize collaborative efforts and effective teaching strategies in facilitating technology integration, particularly during crises such as the COVID-19 pandemic. Additionally, research in Italy (Giovannella, 2020) and South Korea (Lee & Kim, 2021) highlights the need for professional development and addressing technological challenges to enhance educators' digital competencies.

International studies offer comprehensive insights into educators' attitudes toward technology integration in language teaching. Addressing challenges such as inadequate training, technological barriers, and contextual factors is crucial for fostering positive attitudes and enhancing educators' proficiency in utilizing technology effectively. By bridging the gap between theory and practice and promoting collaborative initiatives, stakeholders can optimize teaching practices and enrich students' learning experiences in the digital age. Finally, through synthesizing these findings and implementing targeted interventions, educators and policymakers can create a supportive environment conducive to effective technology integration in language teaching.

3.2 Iranian studies on EFL teachers' attitudes toward online teaching

Amidst the global transition to remote learning, the rise of online teaching has captured considerable attention from researchers, particularly concerning English as a Foreign Language (EFL) teachers' perspectives. Numerous studies in Iran have examined various facets of online learning, exploring its efficacy, challenges, and impact on educators and students. For instance, Erfani and Ghapanchi (2019) investigated students' perceptions of e-learning, highlighting its advantages, such as flexibility and efficiency, while addressing obstacles like technological constraints and teacher readiness. Similarly, Mahmoodi Shahrebabaki (2014) identified barriers to e-learning in Iran, including limited awareness, internet connectivity issues, and sanctions, proposing solutions to overcome these challenges.

Furthermore, studies like those by Yaghoubi et al. (2008) and Heirati and Alashti (2015) examined factors influencing students' preference for e-learning, stressing the significance of computer literacy and awareness of educational limitations. Raygan and Moradkhani (2020) focused on EFL instructors, underlining the importance of teachers' positive attitudes towards technology for effective integration into language teaching. More recently, Kianinezhad (2024) investigated the impact of educational backgrounds and workplace contexts on Iranian EFL teachers' attitudes towards online teaching. The study revealed a strong correlation between advanced degrees and favorable perceptions of online teaching among Iranian EFL educators. Additionally, it identified a trend indicating greater enthusiasm among school-based teachers than in institutes and

universities. These findings underscore the importance of targeted professional development initiatives and supportive institutional policies in enhancing educators' digital skills and fostering inclusivity in language learning amid evolving digital landscapes.

However, international studies, such as Aslan and Zhu's (2016) research, underscore external challenges pre-service teachers face when integrating technology into their teaching methods, including limited resources and technical support. These issues were further elaborated in studies by Hedayati and Marandi (2014) and Fathi and Ebadi (2020), highlighting concerns like inadequate facilities and teachers' lack of confidence and competence in utilizing technology effectively. Overall, these studies offer valuable insights into the complexities surrounding online teaching in the EFL context, addressing challenges and proposing solutions to enhance its efficacy. Nevertheless, they also emphasize the need for further research and support, both pedagogically and technically, to fully harness the potential of online teaching in EFL education. Finally, Kianinezhad (2023) uncovered gender disparities in Iranian EFL teachers' attitudes toward online teaching, with males exhibiting a more positive outlook. Moreover, the study identified a troubling trend of diminishing enthusiasm for online teaching among experienced and older educators. Addressing these challenges requires tailored training, robust support systems, and ongoing professional development to cultivate a positive attitude toward technology integration among teachers, thereby facilitating effective online teaching methodologies (Kianinezhad, 2023).

4 Conclusion, implications, and recommendations

In conclusion, the synthesis of the literature on educators' attitudes toward online teaching underscores the pivotal role of theoretical frameworks in shaping perceptions and guiding strategies for enhanced technology integration in education. Internationally, factors such as perceived usefulness, ease of use, knowledge acquisition, proficiency, and responsiveness consistently emerge as influential constructs shaping educators' attitudes. The adapted theoretical framework for teachers' responsiveness provides a structured approach to understanding educators' readiness for online education, incorporating essential elements like knowledge, appreciation, proficiency, and responsiveness. Both internal factors, such as beliefs about technology, and external factors, like technical infrastructure, significantly influence educators' attitudes. Research conducted in Iran delves into nuanced aspects such as gender disparities, educational level, work environment, experience, and age, offering valuable insights for tailored strategies and policies aimed at enhancing digital competencies among educators. The implications drawn from this synthesis underscore the need for better-tailored professional development, supportive policy frameworks, continuous assessment mechanisms, and an inclusive approach that considers diverse contexts (Kianinezhad, 2023, 2024).

The recommendations for further studies encompass a variety of research methodologies aimed at enriching our understanding of attitudes toward digital learning environments. Firstly, longitudinal research is advocated to meticulously track the evolution of attitudes over time, providing invaluable insights into the constancy and fluctuations in individuals' perceptions and behaviors regarding digital learning. Secondly, comparative studies across diverse educational systems are proposed to illuminate the cultural, institutional, and policy-related factors shaping attitudes toward digital learning. Effective strategies for cultivating positive attitudes can be discerned by scrutinizing contextual variances and commonalities. Thirdly, intervention studies are recommended to assess strategies to enhance attitudes towards digital learning rigorously. This entails the implementation of targeted interventions or programs and meticulously evaluating

their impact on individuals' attitudes and perceptions. Additionally, qualitative inquiry is suggested to gain deeper insight into the underlying rationales behind attitudes towards digital learning. Through methodologies such as interviews, focus groups, and observations, researchers can explore individuals' experiences, beliefs, and perspectives more nuancedly. Lastly, delving into the impact of innovative pedagogies on attitudes towards digital learning is underscored. This encompasses investigating how novel teaching approaches, technologies, and instructional methods influence individuals' attitudes and perceptions of digital learning environments. By addressing these implications and meticulously pursuing the recommended research pathways, stakeholders—including educators, policymakers, and researchers—can effectively contribute to nurturing inclusive and more efficacious digital learning environments. This holistic research approach will facilitate informed decision-making and formulating evidence-based strategies to bolster positive attitudes towards digital learning.

Furthermore, in future research endeavors, i.e., investigations going forward, it is essential to probe how individual characteristics influence attitudes towards online language learning, particularly among English as a Foreign Language (EFL) teachers. Factors such as motivation, learning style, and personality traits may significantly influence these attitudes. Next, exploring the relationship between demographic variables and attitudes toward online language learning can yield valuable insights into whether specific subgroups of EFL teachers demonstrate heightened receptivity to virtual learning environments. Also, to delve deeper into these findings, researchers can employ innovative methodologies, notably neuroscientific techniques, to garner insights into the cognitive processes underpinning EFL teachers' attitudes toward online language learning. One promising method is functional magnetic resonance imaging (fMRI), which enables observing neural activation patterns associated with attitudes toward online teaching. By crafting tasks that simulate online language learning scenarios and scrutinizing brain activity, researchers can pinpoint specific brain regions and networks correlated with positive or negative attitudes. Utilizing such advanced methodologies enhances understanding and underscores the significance of rigorous scientific inquiry in elucidating the intricacies of attitudes toward online language learning. Ultimately, this research can inform the development of tailored interventions and instructional approaches to optimize the effectiveness of online language learning platforms for EFL teachers and learners alike.

References

Akaslan, D., & Law, E. L. (2011, April). Measuring teachers' readiness for e-learning in higher education institutions associated with the subject of electricity in Turkey. In *2011 IEEE Global Engineering Education Conference (EDUCON)* (pp. 481-490). IEEE. https://doi.org/10.1109/EDUCON.2011.5773180

Buhl-Wiggers, J., Kjærgaard, A., & Munk, K. (2023). A scoping review of experimental evidence on face-to-face components of blended learning in higher education. *Studies in Higher Education*, *48*(1), 151-173. https://doi.org/10.1080/03075079.2022.2123911

Chien, S. P., Wu, H. K., & Hsu, Y. S. (2014). An investigation of teachers' beliefs and their use of technology-based assessments. *Computers in Human Behavior*, *31*, 198-210. https://doi.org/10.1016/j.chb.2013.10.037

Costley, K. C. (2014). *The positive effects of technology on teaching and student learning.* Online submission.

Dos Santos, L. M. (2024). Experiences and sense-making processes of online teaching internship: A master of teaching programme. *International Journal of Instruction*, *17*(1), 23-42. Retrieved from https://e-iji.net/ats/index.php/pub/article/view/493

Enayati, T., Modanloo, Y., & Kazemi, F. S. M. (2012). Teachers' attitudes towards the use of technology in education. *Journal of Basic and Applied Scientific Research*, *2*(11), 010958-010963.

Erarslan, A., & Topkaya, E. Z. (2017). EFL student's attitudes towards e-learning and effect of an online course on students success in English. *The Literacy Trek*, *3*(2), 80-101.

Erfani, M., & Ghapanchi, Z. (2019). Attitudes toward E-learning in Ferdowsi University of Mashhad: Case of English and Engineering Students. *Quarterly of Iranian Distance Education Journal*, *2*(1).

Fathi, J., & Ebadi, S. (2020). Exploring EFL pre-service teachers' adoption of technology in a CALL program: Obstacles, motivators, and maintenance. *Education and Information Technologies*, *25*, 3897–3917. https://doi.org/10.1016/j.compedu.2004.06.002

Finbråten, H. S., Wilde-Larsson, B., Nordström, G., Pettersen, K. S., Trollvik, A., & Guttersrud, Ø. (2018). Establishing the HLS-Q12 short version of the European Health Literacy Survey Questionnaire: latent trait analyses applying Rasch modelling and confirmatory factor analysis. *BMC health services research*, *18*(1), 1-17.

Gardner, D. G., Dukes, R. L., & Discenza, R. (1993). Computer use, self-confidence, and attitudes: A causal analysis. *Computers in human behavior*, *9*(4), 427-440. https://doi.org/10.1016/0747-5632(93)90033-O

Ghavifekr, S., & Rosdy, W. A. W. (2015). Teaching and learning with technology: Effectiveness of ICT integration in schools. *International journal of research in education and science*, *1*(2), 175-191.

Gill, L., & Dalgarno, B. (2008). Influences on pre-service teachers" preparedness to use ICTs in the classroom. Accepted paper for'Hello! Where are you in the landscape of educational technology?'. In *25th annual conference of the Australasian Society for Computers in Learning in Tertiary Education (ASCILITE)*.

Heirati, J. K., & Alashti, L. A. (2015). Attitudes toward using the Internet for language learning: A case of Iranian English teachers and learners. *International Journal of Research Studies in Educational Technology*, *4*(1).

Hung, M. L. (2016). Teacher readiness for online learning: Scale development and teacher perceptions. *Computers & Education*, *94*, 120-133.

Jovanova-Mitkovska, S. (2010). The need of continuous professional teacher development. *Procedia-Social and Behavioral Sciences*, *2*(2), 2921-2926.

Kebritchi, M., Lipschuetz, A., & Santiague, L. (2017). Issues and challenges for teaching successful online courses in higher education: A literature review. *Journal of Educational Technology Systems*, *46*(1), 4-29. https://doi.org/10.1177/0047239516661713

Khukalenko, I. S., Kaplan-Rakowski, R., An, Y., & Iushina, V. D. (2022). Teachers' perceptions of using virtual reality technology in classrooms: A large-scale survey. *Education and Information Technologies*, *27*(8), 11591-11613. https://doi.org/10.1007/s10639-022-11061-0

Kianinezhad, N. (2023) *Examining Iranian EFL Teachers' Attitudes Toward Online Teaching* (Unpublished MA Thesis). Islamic Azad University of Mashhad.

Kianinezhad, N. (2023). Attitudes towards Online Teaching: Gender, Experience, and Age among Iranian English Language Teaching Teachers. *TESOL and Technology Studies*, *4*(2), 15-26.

Kianinezhad, N. (2023). Effective methods of teaching foreign languages online: A global view. *TESOL and Technology Studies*, *4*(1), 45-59.

Kianinezhad, N. (2023). Teacher Development in Technology-Enhanced Language Teaching: Book Review. *Journal of Language and Education*, *9*(4), 175-179.

Kianinezhad, N. (2024). Educational Background and Workplace Context: Shaping Iranian EFL Teachers' Attitudes Towards Online Teaching. *Studies in Humanities and Education, 5*(1), 29-43.

Kisanga, D., & Ireson, G. (2016). Test of e-Learning Related Attitudes (TeLRA) scale: Development, reliability and validity study. *International Journal of Education and Development using ICT*, *12*(1).

Krishnakumar, R., & Rajesh, K. M. (2011). Attitude of Teachers' of Higher Education towards E-learning. *Journal of Education and Practice*, *2*(4).

Lambri, A., Mahamod, Z., Zakaria, N., Baharum, H., & Hanapi, Z. (2019). Validity and Reliability of the Malay Social Traits Instrument Using Rasch Measurement Model. *International Journal of Academic Research in Business and Social Sciences*, *9*(7), 225-232. http://dx.doi.org/10.6007/IJARBSS/v9-i7/6111

Lateef, A. R., & Alaba, S. O. (2013). Influence of gender and attitude of pre-service teachers towards on-line instruction in a selected university in South-Western Nigeria. *Asian Social Science*, *9*(4), 84. http://dx.doi.org/10.5539/ass.v9n4p84

Martin, F., Budhrani, K., & Wang, C. (2019). Examining faculty perception of their readiness to teach online. *Online Learning*, *23*(3), 97-119. http://dx.doi.org/10.24059/olj.v23i3.1555

Metin, M., Yilmaz, G. K., Coskun, K., & Birisci, S. (2012). Developing an Attitude Scale towards Using Instructional Technologies for Pre-Service Teachers. *Turkish Online Journal of Educational Technology-TOJET*, *11*(1), 36-45.

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & PRISMA Group*, T. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Annals of internal medicine*, *151*(4), 264-269.

Nair, I., & Das, V. M. (2012). Using Technology Acceptance Model to assess teachers' attitude towards use of technology as teaching tool: A SEM Approach. *International Journal of Computer Applications*, *42*(2), 1-6.

Ng, D. T. K., Leung, J. K. L., Su, J., Ng, R. C. W., & Chu, S. K. W. (2023). Teachers' AI digital competencies and twenty-first century skills in the post-pandemic world. Educational technology research and development, 71(1), 137-161. https://doi.org/10.1007/s11423-023-10203-6

Ningsih, S. K., Mulyono, H., Ar Rahmah, R., & Fitriani, N. A. (2021). A Rasch-based validation of EFL teachers' received online social support scale. *Cogent Education*, *8*(1), 1957529. http://dx.doi.org/10.1080/2331186X.2021.1957529

Papaioannou, D., Sutton, A., & Booth, A. (2016). Systematic approaches to a successful literature review. *Systematic approaches to a successful literature review*, 1-336.

Papp, R. (1998). Student Perception & Knowledge about Information Technology: A" Computer Attitude and Experience Survey" To Measure Changes. *Journal of Education for MIS*, *5*(1), 54-62.

Petty, R. E., & Krosnick, J. A. (1995). Antecedents and consequences.

Philip, G., Altbach, L., Reisberg, L., & Rumbley, E. (2009). Trends in global higher education: Tracking an academic revolution. In a report prepared for the UNESCO 2009 world conference on higher education.

Raja, R., & Nagasubramani, P. C. (2018). Impact of modern technology in education. *Journal of Applied and Advanced Research*, *3*(1), 33-35.

Rogers, E. M., Singhal, A., & Quinlan, M. M. (2014). Diffusion of innovations. In *An integrated approach to communication theory and research* (pp. 432-448). Routledge.

Salmon, G. (2012). *E-moderating: The key to online teaching and learning*. Routledge.

Sang, G., Valcke, M., Van Braak, J., & Tondeur, J. (2010). Student teachers' thinking processes and ICT integration: Predictors of prospective teaching behaviors with educational technology. *Computers & Education*, *54*(1), 103-112.

Schwarz, N. (2007). Attitude construction: Evaluation in context. *Social cognition*, *25*(5), 638-656.

Singh, V., & Thurman, A. (2019). How many ways can we define online learning? A systematic literature review of definitions of online learning (1988-2018). *American Journal of Distance Education*, *33*(4), 289-306.

Stickler, U., Hampel, R., & Emke, M. (2020). A developmental framework for online language teaching skills. *Australian Journal of Applied Linguistics*, *3*(1), 133-151.

Sungur Gül, K., & Ateş, H. (2023). An examination of the effect of technology-based STEM education training in the framework of technology acceptance model. *Education and Information Technologies*, *28*(7), 8761-8787.

Suri, G., & Sharma, S. (2016). Investigation of Teacher's attitude towards e-learning-a case study of Panjab University, Chandigarh, India. *Gian Jyoti E-Journal*, *6*(3), 1-10.

Taylor, S. J., Bogdan, R., & DeVault, M. L. (2015). *Introduction to qualitative research methods: A guidebook and resource*. John Wiley & Sons.

Teo, T. (2009). Modelling technology acceptance in education: A study of pre-service teachers. *Computers & education*, *52*(2), 302-312.

Trivedi, S. K., & Yadav, M. (2018). Predicting online repurchase intentions with e-satisfaction as mediator: a study on Gen Y. *VINE Journal of Information and Knowledge Management Systems*, *48*(3), 427-447.

Trivedi, S. K., & Yadav, M. (2018). Predicting online repurchase intentions with e-satisfaction as mediator: a study on Gen Y. *VINE Journal of Information and Knowledge Management Systems*, *48*(3), 427-447. https://doi.org/10.1108/VJIKMS-10-2017-0066

Uzunboylu, H. (2007). Teacher attitudes toward online education following an online inservice program. *International Journal on E-learning*, *6*(2), 267-277.

Uzunboylu, H. (2007). Teacher attitudes toward online education following an online inservice program. *International Journal on E-learning*, *6*(2), 267-277.

Wasserman, E., & Migdal, R. (2019). Professional Development: Teachers' Attitudes in Online and Traditional Training Courses. *Online Learning*, *23*(1), 132-143.

Wasserman, E., & Migdal, R. (2019). Professional Development: Teachers' Attitudes in Online and Traditional Training Courses. *Online Learning*, *23*(1), 132-143. https://doi.org/10.24059/olj.v23i1.1299

Weller, M. (2007). *Virtual learning environments: Using, choosing and developing your VLE*. Routledge.

Wells, P., De Lange, P., & Fieger, P. (2008). Integrating a virtual learning environment into a second - year accounting course: determinants of overall student perception. *Accounting & Finance*, *48*(3), 503-518.

Wright, B. M. (2017). Blended learning: Student perception of face-to-face and online EFL lessons. *Indonesian journal of applied linguistics*, *7*(1), 64-71. http://dx.doi.org/10.17509/ijal.v7i1.6859

Xodabande, I. (2017). The effectiveness of social media network telegram in teaching English language pronunciation to Iranian EFL learners. *Cogent education*, *4*(1), 1347081.

Yaghoubi, J., Malek Mohammadi, I., Iravani, H., Attaran, M., & Gheidi, A. (2008). Virtual Students' Perceptions of e-Learning in Iran. *The Turkish Online Journal of Educational Technology*, *7*(3).

Yang, M., Duha, M. S. U., Kirsch, B. A., Glaser, N., Crompton, H., & Luo, T. (2024). Universal design in online education: A systematic review. *Distance Education*, *45*(1), 23-59. https://doi.org/10.1080/01587919.2024.2303494

Yosintha, R., & Yunianti, S. S. (2021). Learner autonomy in EFL online classes in Indonesia: Students' voices. *Langkawi: Journal of The Association for Arabic and English*, *7*(1), 119-133. http://dx.doi.org/10.31332/lkw.v7i1.2154