

A Systematic Literature Review on the Historical Aspects and Implications of Psycho-Pedagogy for Teacher Education Perspectives

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INTRODUCTION

Definitionally, psycho-pedagogy represents a sophisticated interdisciplinary domain, meticulously integrating the foundational tenets of psychology with the art and science of pedagogy (Huang & Zheng, 2022). Psycho-pedagogy, as a multifaceted discipline, intricately weaves psychological understanding with pedagogical practices, thereby profoundly shaping the landscape of teacher education (Shuell, 1996). A systematic exploration of its historical evolution reveals a dynamic interplay of philosophical, psychological, and educational theories that have progressively informed and transformed the ways in which teachers are trained and how they approach the art and science of teaching (Vääätäjä & Ruokamo, 2021). Understanding the historical trajectory of psycho-pedagogy provides critical insights into the foundational principles that underpin contemporary teacher education programs, enabling educators to critically evaluate and adapt their practices to meet the ever-evolving needs of diverse learners. This exploration necessitates a deep dive into the theoretical underpinnings of psycho-pedagogy, tracing its roots from early philosophical inquiries into the nature of learning and the human mind to the emergence of distinct psychological schools of thought that have significantly impacted educational practices (Hinduja et al., 2021). Furthermore, examining the historical context in which psycho-pedagogy has evolved allows for a nuanced understanding of the social, cultural, and political influences that have shaped its development, thereby informing current debates and future directions in teacher education. The integration of social justice and equity within teacher preparation programs highlights the crucial role of psycho-pedagogy in fostering inclusive and equitable learning environments (Wiedeman, 2002).

Historical Roots and Theoretical Foundations

The historical roots of psycho-pedagogy can be traced back to the classical philosophical inquiries into the nature of knowledge, learning, and the human mind, with thinkers like Plato and Aristotle laying the groundwork for understanding the cognitive and developmental processes involved in education (Wood & Bennett, 1998). Johann Herbart is considered the father of educational psychology ("History of Educational Psychology," 2013). The emergence of psychology as a distinct scientific discipline in the late 19th century marked a pivotal moment in the development of psycho-pedagogy, as researchers began to apply empirical methods to investigate the psychological principles underlying learning and instruction. Figures like Wilhelm Wundt, considered the founder of experimental psychology, and William James, who explored the practical applications of psychology, paved the way for the integration of psychological insights into educational theory and practice. The early 20th century witnessed the rise of various schools of thought in psychology, each offering unique perspectives on learning and human behavior, with significant implications for education. Behaviorism, with its emphasis on observable behaviors and the role of environmental stimuli in shaping learning, profoundly influenced instructional design and classroom management techniques (McInerney, 2005). Cognitive psychology, emerging as a response to the limitations of behaviorism, focused on the mental processes involved in learning, such as memory, attention, and problem-solving, leading to the development of cognitive-based instructional strategies aimed at enhancing students' cognitive skills.

Psycho-pedagogy in the Context of Teacher Education

The integration of psycho-pedagogy into teacher education programs has been a gradual but transformative process, reflecting the evolving understanding of the complexities of teaching and learning. Early teacher

training models often focused on rote memorization of content and the transmission of knowledge from teacher to student, with little emphasis on the psychological dimensions of learning or the individual needs of learners. However, as psycho-pedagogical theories gained prominence, teacher education programs began to incorporate courses on educational psychology, child development, and learning theories, aiming to equip teachers with the knowledge and skills necessary to understand and address the diverse needs of their students. The shift towards more student-centered and constructivist approaches to teaching has further emphasized the importance of psycho-pedagogy in teacher education, as teachers are now expected to create learning environments that foster active engagement, critical thinking, and problem-solving skills. William James and John Dewey's philosophical ideas can be traced to the emphasis on creative and investigative teaching through problem-solving approaches in the history of modern education ([Nozari & Siamian, 2014](#)). The emphasis on culturally responsive teaching and differentiated instruction reflects a growing recognition of the importance of addressing the diverse cultural backgrounds, learning styles, and individual needs of students in the classroom.

Implications for Contemporary Teacher Education

Psycho-pedagogy's historical evolution holds profound implications for contemporary teacher education, underscoring the need for teacher preparation programs to equip educators with a deep understanding of the psychological principles that underpin effective teaching and learning. By understanding the historical context in which psycho-pedagogy has evolved, teacher educators can critically evaluate the strengths and limitations of different theoretical approaches and adapt their programs to meet the ever-changing needs of students and schools. Teacher education programs globally share similarities, such as psychology, sociology and pedagogy, courses that enhance content knowledge, pedagogical content knowledge, classroom management principles, understanding students, educational context knowledge, and educational aims ([Hinduja et al., 2021](#)). Teachers should be prepared for the challenges they face in the world and have the ability to adapt according to the context ([Hinduja et al., 2021](#); [Plessis et al., 2024](#)). Furthermore, a historical perspective on psycho-pedagogy can help teacher educators avoid the pitfalls of adopting trendy but unsubstantiated pedagogical practices, encouraging them to ground their approaches in evidence-based research and sound theoretical frameworks.

The Role of Continuous Professional Development

Continuous Professional Development plays a pivotal role in ensuring that teachers remain current with the latest advancements in psycho-pedagogy and are equipped to effectively address the evolving needs of their students ([Vadivel et al., 2021](#)). Effective professional development programs should provide teachers with opportunities to deepen their understanding of key psycho-pedagogical concepts, such as learning theories, cognitive development, motivation, and classroom management, and to translate this knowledge into practical strategies for improving their teaching practice ([Ekanayake et al., 2020](#)). In the context of colleges of education, the trainers of teachers themselves need to be continuously updated on the latest trends and developments in the field ([Benedicta, 2021](#)). Moreover, continuing education can boost teachers' confidence and promote quality teaching and learning, contributing to the growth of educational institutions ([Bhaskar & Dayalan, 2021](#)). Teachers must develop and enhance educational competencies and skills by carrying out professional duties to continue in the same direction as the development of science and technology and art ([Yusnawati et al., 2021](#)). In fact, they need to teach in-service instructors how to assess their pedagogical knowledge and reflect on their instructional practices, which are critical for their professional growth ([Zeng, 2023](#)). Professional development programs should also emphasize the importance of reflective practice, encouraging teachers to critically examine their own beliefs, assumptions, and practices in light of psycho-pedagogical principles and research findings ([Smetanina et al., 2020](#)).

By encouraging teachers to become lifelong learners and reflective practitioners, teacher education programs can cultivate a culture of continuous improvement that ultimately benefits both teachers and students. Professional development ensures that learning is ongoing and that professionals continuously upgrade their skills throughout their careers ([Dayagbil & Alda, 2024](#)). Continuous professional development enhances teachers' subject mastery, teaching skills, and positive attitudes in the classroom ([Saleem et al., 2021](#)). Professional development directly relates to workers' daily activities and should be a part of a broader continuous learning process ([Muratha et al., 2020](#)). A paradigm shift has occurred, moving away from traditional professional development methods and toward more comprehensive strategies to enhance teachers'

understanding of subject matter, pedagogy, and student thinking ([Havea & Mohanty, 2020](#)). Robust and systematic teacher preparation and development is increasingly important ([Gupta & Lee, 2020](#)).

Historical Aspects of Psycho-Pedagogy

Psycho-pedagogy is a multidisciplinary field that integrates psychological principles and pedagogical practices to enhance teaching and learning.

The historical roots of psycho-pedagogy can be traced back to the late 19th and early 20th centuries, with the emergence of educational psychology as a distinct field of study ([Muir et al., 2021](#)).

Pioneering psychologists such as William James, John Dewey, and Edward Thorndike laid the groundwork for psycho-pedagogy by exploring the psychological processes involved in learning and instruction.

Psycho-pedagogy has been shaped by various theoretical perspectives, including behaviorism, cognitivism, constructivism, and humanism, each offering unique insights into the nature of learning and how to promote it effectively.

Behaviorism, with its emphasis on observable behaviors and conditioning, influenced early psycho-pedagogical practices, leading to the development of instructional methods based on reinforcement and reward.

The Cognitive Revolution

The cognitive revolution of the mid-20th century shifted the focus of psycho-pedagogy from external behaviors to internal mental processes, highlighting the importance of memory, attention, problem-solving, and metacognition in learning.

Cognitive theories, such as information processing theory and schema theory, provided a framework for understanding how learners acquire, store, and retrieve knowledge, informing the design of instructional strategies that promote meaningful learning and cognitive development.

Constructivism, which emerged as a dominant perspective in the late 20th century, further emphasized the active role of learners in constructing their own knowledge through experience, reflection, and social interaction ([Efgivia et al., 2021](#)).

Constructivist approaches to psycho-pedagogy prioritize student-centered learning, collaborative activities, and authentic assessment, fostering deeper understanding and critical thinking skills.

The theories developed by Piaget and Vygotsky offer learning theories with a significant difference, but still impacting on understanding cognitive development ([Huang, 2021](#)). Vygotsky's theories stress the fundamental role of social interaction in the development of cognition, and places its belief strongly that community plays a central role in the process of "making meaning" ([Negi, 2020](#)). Vygotsky's psychology is an application of Marx's theories into learning, providing a framework whereby the sociocultural roots of thought become internalised in the individual ([Luong, 2022](#)). His social theory consists of three principles: social interaction plays a key role in the acquisition of knowledge, some aspects of cognitive development are limited to a specific developmental periods, and that the process rather than the product of learning must be assessed for humans to fully

learn and understand ([Choi & Lee, 2021](#)).

Humanistic psychology, with its emphasis on the holistic development of individuals and their potential for self-actualization, contributed to psycho-pedagogy by highlighting the importance of motivation, emotions, and interpersonal relationships in learning.

Humanistic approaches to teaching emphasize creating a supportive and caring classroom environment that fosters students' self-esteem, autonomy, and intrinsic motivation, promoting their overall well-being and academic success.

Implications for Teacher Education Perspectives

The historical evolution of psycho-pedagogy has profound implications for teacher education, shaping the knowledge, skills, and dispositions that teachers need to be effective in today's diverse and dynamic classrooms.

Teacher education programs must provide pre-service teachers with a solid foundation in psychological principles and theories, equipping them with the knowledge and understanding necessary to make informed instructional decisions based on research and evidence-based practices.

It is essential for teachers to understand how children's attachment styles can promote development by establishing positive teacher-child relationships ([Siraj et al., 2023](#)).

Furthermore, teacher education should emphasize the development of pedagogical skills that align with psycho-pedagogical principles, such as differentiated instruction, formative assessment, and classroom management techniques that promote student engagement, motivation, and learning.

Teacher education programs should also promote reflective practice, encouraging pre-service teachers to critically examine their own beliefs, assumptions, and practices, and to continuously seek out new knowledge and strategies to improve their teaching effectiveness.

Moreover, teacher education should cultivate teachers' ability to create inclusive and equitable learning environments that address the diverse needs of all students, including those with disabilities, cultural and linguistic differences, and varying learning styles.

Globalized teachers heighten their professionalism by stipulating a wide range of proactive actions impacting the educational qualities ([Wijaya, 2022](#)). The new approach to teacher education includes the need for teachers to have a better understanding of education in a global context. .

Inclusive teachers recognize differences and adopt a pedagogy that includes everyone, seeking to provide a differentiated teaching, and they organize the activities and interactions in such a way that each one is often confronted with enriching situations according to his or her personal characteristics and needs ([Fernandes et al., 2021](#)).

Teacher education providers should attract students with high academic potential and work with them to meet the demands of learning and teaching in the 21st century ([Dubash et al., 2020](#)). . Teaching practice is crucial to teacher development, and an effective teacher education program must improve individual teachers' growth and evolution as humans ([Nazhafah & Muslim, 2021](#)). It is the responsibility of the university to continuously develop better standards to ensure quality teacher education ([Dubash et al., 2020](#)).

By integrating psycho-pedagogical principles into teacher education, we can empower teachers to create transformative learning experiences that foster students' cognitive, social, emotional, and academic development, preparing them to thrive in a rapidly changing world ([Fessehatsion & Peng, 2020](#); [Macabenta et al., 2023](#); [Pozas et al., 2021](#); [Shih et al., 2020](#)).

The quality of education relies on the quality of teachers, and teachers' professional development is closely linked to teaching effectiveness and student learning outcomes ([Wang & Shih, 2022](#)).

Reflective teaching practices, such as peer observation, self-reporting, journal writing, and lesson recording, can support teachers' professional growth ([Baluchzada, 2023](#)).

Furthermore, the incorporation of information and communication technologies into teacher education has become increasingly important in today's digital age ([Guillén-Gámez et al., 2021](#)). As technology continues to reshape the educational landscape, it is essential for teachers to develop the skills and knowledge necessary to effectively integrate technology into their teaching practices ([Hipol et al., 2020](#); [Molina et al., 2021](#)). Rather than simply focusing on basic technological skills, the main emphasis has been on the knowledge and skills associated with the pedagogical use of technology ([Kaminskienė et al., 2022](#)).

Teacher education programs should strive to prepare teachers who are not only proficient in using technology but also able to leverage technology to enhance student learning and engagement ([Kaminskienė et al., 2022](#)).

In order to increase teachers' competencies in incorporating technology into the delivery of lessons, teacher preparation is essential ([Arhin et al., 2023](#)).

Technology integration can improve student teachers' and the educational system's competence; nevertheless, this opportunity is still mostly unequal and unexplored ([Amaniampong & Hartmann, 2023](#)). For students to think critically, actively solve problems, and be digitally literate, teachers should create lessons that teach content knowledge and help students develop 21st-century skills while taking into account the TPACK model ([Amaniampong & Hartmann, 2023](#)).

Continuous professional development programs should provide teachers with ongoing opportunities to learn about new technologies, explore innovative pedagogical approaches, and share best practices with their peers.

These initiatives should be designed to support teachers in integrating technology in meaningful ways, aligning technology use with curriculum goals, and creating engaging and effective learning experiences for all students ([Caner & Aydın, 2021](#); [Indalecio, 2022](#); [Love et al., 2020](#)).

The evolution of psycho-pedagogy highlights the need for teacher education programs to address not only the cognitive aspects of learning but also the social and emotional dimensions of teaching and learning ([Rakhman et al., 2020](#)) ([Gayyur, 2021](#)).

By fostering teachers' understanding of the social and emotional factors that influence student learning, we can empower them to create more supportive and nurturing classroom environments where all students feel valued, respected, and empowered to succeed ([Howorth et al., 2024](#)).

In conclusion, the historical evolution of psycho-pedagogy has had a profound impact on teacher education, shaping our understanding of how teachers can best support student learning and development. By embracing the principles of psycho-pedagogy and integrating them into teacher education programs, we can equip teachers with the knowledge, skills, and dispositions necessary to create transformative learning experiences that foster students' cognitive, social, emotional, and academic growth.

Current Research Trends in Psycho-Pedagogy

The field of psycho-pedagogy is constantly evolving, with new research emerging that sheds light on the complexities of the learning process and its implications for educational practice.

Current research trends in psycho-pedagogy reflect a growing interest in understanding the role of cognitive, social, emotional, and cultural factors in shaping student learning and development. ([Correia, 2023](#); [Dyson et al., 2023](#); [Greenberg, 2023](#)).

Researchers are exploring the use of technology to enhance learning, such as incorporating social media into formal learning environments ([Lai et al., 2021](#)).

One prominent trend in psycho-pedagogy research is the increasing focus on the role of cognitive processes in learning.

Researchers are investigating how students acquire, process, and retain information, as well as the cognitive strategies that can be used to improve learning outcomes.

For example, studies have examined the effectiveness of different teaching methods on student attention, memory, and problem-solving skills.

One particular area of interest is the study of metacognition, which refers to the ability to reflect on and regulate one's own thinking processes.

Metacognitive strategies, such as self-monitoring and self-evaluation, have been shown to improve student learning and academic performance.

Furthermore, research is exploring the potential of virtual reality, augmented reality, and mixed reality technologies to enhance teacher education by creating immersive and interactive learning environments ([Wang & Li, 2024](#)).

Another important trend in psycho-pedagogy research is the growing recognition of the role of social and emotional factors in learning.

Research suggests that students' social and emotional well-being can have a significant impact on their academic performance, motivation, and engagement.

Studies have shown that students who feel safe, supported, and connected to their school community are more likely to succeed academically and develop positive social and emotional skills.

In addition, researchers are exploring the effectiveness of interventions designed to promote students' social and emotional development, such as mindfulness-based practices and social skills training ([Trinidad-Velasco & Cárdenas, 2020](#)).

Researchers are also examining the role of cultural factors in shaping student learning and development.

It is imperative to improve the skills of students in a dynamic world ([Khahro & Javed, 2022](#)).

Educational technology can be highly flexible and convenient, enhancing the learning experience through context, communication, and purposeful activity ([Panicker, 2020](#)).

Additionally, studies have examined the impact of culturally responsive teaching practices on student engagement, motivation, and academic achievement.

The use of digital tools, multimedia resources, and interactive platforms has revolutionized the learning process, fostering student engagement, critical thinking, and problem-solving skills ([Kalyani, 2024](#)).

In conclusion, current research trends in psycho-pedagogy reflect a growing recognition of the complexities of the learning process and the importance of considering cognitive, social, emotional, and cultural factors in educational practice. This body of research underscores the need for a multidimensional, holistic approach to teaching and learning that addresses the diverse needs and experiences of students. By accounting for these various factors, teacher education programs can better prepare future educators to create inclusive, supportive, and responsive learning environments that empower all students to reach their full potential.

Gaps in the Literature and Future Directions

Despite the significant advancements in psycho-pedagogy research, there are still notable gaps in the literature that need to be addressed to further enhance our understanding of the teaching and learning process.

One gap is the limited research on the long-term impact of psycho-pedagogical interventions on student outcomes.

While many studies have demonstrated the effectiveness of interventions in improving students' academic performance and social-emotional well-being in the short term, few studies have examined whether these effects persist over time.

Long-term studies are needed to determine the lasting impact of psycho-pedagogical interventions on students' academic trajectories, career paths, and overall life success. Counselor educators and researchers need to reflect on the experiences of students as they undergo transformation as a result of the pandemic and technological advances ([Abkhezzr & Bath, 2023](#)).

Another gap in the literature is the lack of research on the implementation and scalability of psycho-pedagogical interventions in real-world educational settings.

While many interventions have been developed and tested in controlled research environments, few studies have examined the feasibility and effectiveness of implementing these interventions in diverse and complex educational contexts.

Future research should focus on developing and evaluating implementation strategies that can facilitate the successful adoption and integration of psycho-pedagogical interventions into routine educational practice.

Moreover, there is a need for more research on the role of technology in promoting personalized and adaptive learning experiences for students.

While technology has the potential to transform education, research is needed to determine how to effectively leverage technology to meet the individual needs of learners.

Further exploration is needed to determine the most successful features of intervention programs ([Hassani & Schwab, 2021](#)).

Studies should examine the use of artificial intelligence, machine learning, and data analytics to create personalized learning pathways, provide targeted feedback, and monitor student progress.

Additionally, research is needed to examine the ethical and social implications of using technology in education, such as issues related to data privacy, algorithmic bias, and digital equity ([Azzam & Charles, 2024](#)).

Future research directions in psycho-pedagogy should prioritize interdisciplinary collaborations that bring together experts from diverse fields, such as education, psychology, neuroscience, computer science, and sociology.

By integrating insights and perspectives from multiple disciplines, researchers can gain a more comprehensive understanding of the complex interplay of factors that influence student learning and development.

Given the diversity of student populations in educational settings, there is a critical need for more in-depth research that examines the effectiveness of psycho-pedagogical interventions for students from a wide range of cultural, socioeconomic, and learning backgrounds. It is essential to understand how these various factors may influence the implementation and outcomes of psycho-pedagogical approaches, in order to develop more inclusive and equitable educational practices. This research should explore the unique perspectives, needs, and experiences of marginalized or underrepresented student groups, with the goal of ensuring that all learners have access to learning environments and support systems that foster their academic, social, and emotional growth. By expanding the scope of psycho-pedagogical research to encompass diverse student populations, educators can gain valuable insights to inform the design and delivery of interventions that are tailored to the specific needs of their students.

Synthesis and Conclusions

Psycho-pedagogy, as a field, has significantly evolved from its historical roots to become a multifaceted and interdisciplinary approach to understanding and enhancing education.

The historical analysis reveals a shift from traditional, teacher-centered models of instruction to more student-centered, personalized approaches that consider the cognitive, social, emotional, and cultural dimensions of learning.

This evolution has been shaped by key theoretical frameworks, research findings, and societal influences that have contributed to a deeper understanding of how people learn and develop.

The implications of psycho-pedagogy for teacher education are profound, as it underscores the need for educators to be equipped with the knowledge, skills, and dispositions to create effective and inclusive learning environments that promote student success.

Teacher education programs must integrate psycho-pedagogical principles and practices into their curriculum to prepare future teachers to address the diverse needs of learners, foster their motivation and engagement, and create supportive and challenging learning experiences ([Leckie & De, 2020](#)).

Psycho-pedagogy is closely intertwined with educational interventions, with its research history tracing back to the early 20th century ([Gao et al., 2021](#)).

In conclusion, this systematic literature review has highlighted the historical aspects of psycho-pedagogy and its implications for teacher education perspectives.

Psycho-pedagogy has evolved from its historical roots to become a multifaceted and interdisciplinary field that seeks to understand and enhance education ([Azrak, 2020](#)).

The historical analysis reveals a shift from traditional, teacher-centered models of instruction to more student-centered, personalized approaches that consider the cognitive, social, emotional, and cultural dimensions of learning ([Cook-Sather & Cook-Sather, 2023](#)).

The review of literature suggests that a significant area of focus should be the development of teachers' general pedagogical knowledge, which encompasses an understanding of educational contexts, curriculum design, and student learning processes ([Leijen et al., 2022](#)). In the context of inclusive education, psycho-pedagogy emphasizes the importance of considering the individual needs of all students, promoting a broader perspective that recognizes the plurality of differences in the school environment ([Kafia et al., 2023](#)).

The insights from ecological psychology, particularly the theories of affordances, provide valuable frameworks for designing learning environments that are attuned to the potential for learning by engaging with the surrounding spaces ([Phillips & Finn, 2020](#)). Moving forward, psycho-pedagogy must continue to evolve to address the challenges and opportunities of contemporary education.

Teacher education programs should equip teachers with the knowledge and skills to create inclusive and equitable learning environments that promote the academic, social, and emotional development of all students ([Salehi et al., 2021](#)).

This includes fostering critical thinking skills, promoting collaboration and communication, and leveraging technology to personalize learning experiences.

The importance of integrating theory and practice in teacher education is highlighted by the need for teachers to apply theoretical knowledge to real-world classroom situations ([Kafia et al., 2023](#)). It has been demonstrated unequivocally that teachers with extensive preparation in pedagogy and practice teaching achieve significantly higher levels of certification ([Mukelabai et al., 2020](#)). In addition, counselors are expected to play a facilitative role in fostering communication among students and teachers, thereby enabling educators to gain psychodynamic insights into individual cases and manage hostile feelings toward students with special needs ([Suparno et al., 2022](#)).

Inclusive pedagogy is highly prioritized in educational policies across different countries, with teachers expected to manage increasing learner diversity and promote equal opportunities and social inclusion in classrooms ([Tai, 2021](#)). Teacher attitudes towards inclusion is a widely published topic that emphasizes the importance of accommodating for all students ([Woodcock et al., 2023](#)).

Psycho-pedagogy serves as a fundamental framework in shaping transformative educational practices that are deeply attuned to the diverse cognitive, emotional, and sociocultural landscapes of students. By fostering learning environments that prioritize personalized experiences and tailored support structures, psycho-pedagogy empowers each learner to thrive and reach their full academic, social, and personal potential. This comprehensive

approach recognizes the multifaceted nature of the learning process, addressing not only the intellectual dimensions but also the social, emotional, and cultural factors that influence student development and achievement. Through its interdisciplinary lens, psycho-pedagogy encourages educators to adopt holistic, learner-centered methodologies that cultivate a nurturing, inclusive, and intellectually stimulating atmosphere where all students can actively engage, explore, and grow. Ultimately, the integration of psycho-pedagogical principles into teacher education and classroom practices holds the promise of creating equitable and enriching educational experiences that unleash the boundless potential within every learner. ([Forbes, 2021](#)).

REFERENCES

1. Abkhezr, P., & Bath, D. (2023). Voices of Australian Mature-Age Bachelor of Counselling Students: Telling Stories of Learning and Teaching Transitions. *International Journal for the Advancement of Counselling*, 45(3), 493. <https://doi.org/10.1007/s10447-023-09508-1>
2. Amaniampong, A., & Hartmann, H. (2023). Factors Affecting Technology Integration in Colleges of Education. *International Journal of Studies in Education and Science*, 4(2), 176. <https://doi.org/10.46328/ijses.69>
3. Arhin, J., Boateng, F. O., Akosah, E. F., & Gyimah, K. N. G. N. (2023). Perceptions and readiness of high school mathematics teachers for integration of ICT tools in the teaching and learning of mathematics. *Pedagogical Research*, 9(1). <https://doi.org/10.29333/pr/14032>
4. Azrak, A. (2020). El discurso psicológico en el campo educativo: una revisión crítica de su configuración histórica y su devenir actual. *Foro de Educación*, 18(2), 149. <https://doi.org/10.14516/fde.716>
5. Azzam, A., & Charles, T. (2024). A Review of Artificial Intelligence in K-12 Education [Review of A Review of Artificial Intelligence in K-12 Education]. *Open Journal of Applied Sciences*, 14(8), 2088. Scientific Research Publishing. <https://doi.org/10.4236/ojapps.2024.148137>
6. Baluchzada, S. (2023). Effectiveness of Reflective Teaching on Professional Development of English as Foreign Language (EFL) Teachers. *Mextesol Journal*, 47(3), 1. <https://doi.org/10.61871/mj.v47n3-6>
7. Benedicta, A. A. (2021). Challenges in organisation of college-based departmentalised continuous professional development in colleges of education for academic staff: A case study in selected colleges of education in the Volta Region. *International Journal of Educational Administration and Policy Studies*, 13(2), 109. <https://doi.org/10.5897/ijeaps2021.0719>
8. Bhaskar, P., & Dayalan, P. (2021). CAREER GROWTH AND DEVELOPMENT: ROLE OF CONTINUING EDUCATION AMONG TEACHERS. *BUSINESS EXCELLENCE AND MANAGEMENT*, 11(3). <https://doi.org/10.24818/beman/2021.11.3-07>
9. Cabrera-Murcia, E. P. (2021). How Leadership Should Be Exercised in Early Childhood Education? *Magis Revista Internacional de Investigación En Educación*, 14, 1. <https://doi.org/10.11144/javeriana.m14.hlsb>
10. Caner, M., & Aydın, S. (2021). SELF EFFICACY BELIEFS OF PRE-SERVICE TEACHERS ON TECHNOLOGY INTEGRATION. *Turkish Online Journal of Distance Education*, 79. <https://doi.org/10.17718/tojde.961820>
11. Choi, S. E., & Lee, S. (2021). Applying Constructivism in Neurodiverse Classrooms. *Review of Educational Theory*, 4(4), 6. <https://doi.org/10.30564/ret.v4i4.3876>
12. Cook-Sather, A., & Cook-Sather, M. (2023). From Reporting to Removing Barriers: Toward Transforming Accommodation Culture into Equity Culture. *Education Sciences*, 13(6), 611. <https://doi.org/10.3390/educsci13060611>
13. Correia, M. (2023). Socioemotional competencies and behaviour management at school: An exploratory socio-educational intervention. *Pedagogi Jurnal Ilmu Pendidikan*, 23(1), 48. <https://doi.org/10.24036/pedagogi.v23i1.1524>
14. Darling-Hammond, L., Flook, L., Schachner, A., Wojcikiewicz, S. K., Cantor, P., & Osher, D. (2022). Educator Learning to Enact the Science of Learning and Development. <https://doi.org/10.54300/859.776>
15. Dayagbil, F. T., & Alda, R. (2024). Continuing professional development opportunities: Teachers' motivation and perceived effectiveness. *International Journal of Education and Practice*, 12(3), 584. <https://doi.org/10.18488/61.v12i3.3733>
16. Dubash, C. J., Arshad, M., & Khan, A. H. (2020). A Comparative Review of National and International Practices in Teacher Education Accreditation [Review of A Comparative Review of National and

- International Practices in Teacher Education Accreditation]. *South Asian Research Journal of Humanities and Social Sciences*, 2(5), 438. <https://doi.org/10.36346/sarjhss.2020.v02i05.013>
17. Dyson, B., Shen, Y., Howley, D., & Baek, S. (2023). Social emotional learning matters: Interpreting educators' perspectives at a high-needs rural elementary school. *Frontiers in Education*, 8. <https://doi.org/10.3389/educ.2023.1100667>
18. Efgivia, M. G., Rinanda, R. Y. A., Suriyani, Hidayat, A., Maulana, I., & Budiarto, A. (2021). Analysis of Constructivism Learning Theory. *Advances in Social Science, Education and Humanities Research/Advances in Social Science, Education and Humanities Research*. <https://doi.org/10.2991/assehr.k.211020.032>
19. Ekanayake, K., Shukri, M., Khatibi, A., & Azam, S. (2020). Global Citizenship Education Practices and Teacher Education: A Review of Literature [Review of Global Citizenship Education Practices and Teacher Education: A Review of Literature]. *Journal of Education Society and Behavioural Science*, 36. <https://doi.org/10.9734/jesbs/2020/v33i630234>
20. Fernandes, P. R. S., Jardim, J., & Lopes, M. C. de S. (2021). The Soft Skills of Special Education Teachers: Evidence from the Literature. *Education Sciences*, 11(3), 125. <https://doi.org/10.3390/educsci11030125>
21. Fessehatsion, P. W., & Peng, P. (2020). Exploring Teachers' Retention and Attrition in Middle and Secondary Schools in Eritrea: Perspectives of Currently Serving Teachers. *International Journal of Research in Education and Science*, 7(1), 227. <https://doi.org/10.46328/ijres.1532>
22. Forbes, L. K. (2021). The Process of Playful Learning in Higher Education: A Phenomenological Study. *Journal of Teaching and Learning*, 15(1). <https://doi.org/10.22329/jtl.v15i1.6515>
23. Frank, C. M. L., & Bogard, T. (2021). Developing Cultural Competencies in Pre-Service Teachers Through Humanity Centered Design and Community-Based Learning. *International Journal of Educational Reform*, 31(2), 187. <https://doi.org/10.1177/10567879211030485>
24. Gao, H., Ou, Y., Zhang, Z., Ni, M., Zhou, X., & Liao, L. (2021). The Relationship Between Family Support and e-Learning Engagement in College Students: The Mediating Role of e-Learning Normative Consciousness and Behaviors and Self-Efficacy. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.573779>
25. Garrido, M. C. D., Cabezas, A. R., Domínguez, M. C. M., Dueñas, M. C. L., Navío, E. P., & Rivilla, A. M. (2020). Teachers' Training in the Intercultural Dialogue and Understanding: Focusing on the Education for a Sustainable Development. *Sustainability*, 12(23), 9934. <https://doi.org/10.3390/su12239934>
26. Gayyur, T. S. (2021). Exploring TPACK skills of prospective teachers and challenges faced in digital technology integration in Pakistan. *Journal of Development and Social Sciences*, 2, 226. [https://doi.org/10.47205/jdss.2021\(2-iv\)19](https://doi.org/10.47205/jdss.2021(2-iv)19)
27. Greenberg, M. T. (2023). Evidence for Social and Emotional Learning in Schools. <https://doi.org/10.54300/928.269>
28. Guillén-Gámez, F. D., Mayorga-Fernández, M. J., & Contreras-Rosado, J. A. (2021). Incidence of Gender in the Digital Competence of Higher Education Teachers in Research Work: Analysis with Descriptive and Comparative Methods. *Education Sciences*, 11(3), 98. <https://doi.org/10.3390/educsci11030098>
29. Gupta, A., & Lee, G. L. (2020). The Effects of a Site-based Teacher Professional Development Program on Student Learning. *International Electronic Journal of Elementary Education*, 12(5), 417. <https://doi.org/10.26822/iejee.2020562132>
30. Hassani, S., & Schwab, S. (2021). Social-Emotional Learning Interventions for Students With Special Educational Needs: A Systematic Literature Review. *Frontiers in Education*, 6. <https://doi.org/10.3389/educ.2021.808566>
31. Havea, P. H., & Mohanty, M. (2020). Professional Development and Sustainable Development Goals. In *Encyclopedia of the UN sustainable development goals* (p. 654). Springer International Publishing. https://doi.org/10.1007/978-3-319-95870-5_53
32. Heydarnejad, T., Fatemi, A. H., & Ghonsooly, B. (2021). The Relationship between Critical Thinking, Self-regulation, and Teaching Style Preferences among EFL Teachers: A Path Analysis Approach. *Journal of Language and Education*, 7(1), 96. <https://doi.org/10.17323/jle.2021.11103>

33. Hinduja, P., Hussain, A., & Noor, S. (2021). What Should We Learn from New Trends in Teacher Education. *Sir Syed Journal of Education & Social Research (SJESR)*, 4(2), 459. [https://doi.org/10.36902/sjesr-vol4-iss2-2021\(459-465\)](https://doi.org/10.36902/sjesr-vol4-iss2-2021(459-465))
34. Hipol, A. I., Cabahug, R., & Bongon, R. (2020). Impact of blended learning instruction in academic performance of grade 10 students in a selected private high school in San Juan City, Philippines. *Journal of Physics Conference Series*, 1470(1), 12052. <https://doi.org/10.1088/1742-6596/1470/1/012052>
35. History of Educational Psychology. (2013). In Routledge eBooks (p. 992). Informa. <https://doi.org/10.4324/9780203053874-41>
36. Howorth, S. K., Marino, M. T., Flanagan, S., Cuba, M. J., & Lemke, C. (2024). Integrating emerging technologies to enhance special education teacher preparation. *Journal of Research in Innovative Teaching & Learning*. <https://doi.org/10.1108/jrit-08-2024-0208>
37. Huang, C., & Zheng, Q. (2022). How teaching style influences learning effectiveness through learning motivation. *International Journal of Research in Business and Social Science* (2147-4478), 11(6), 468. <https://doi.org/10.20525/ijrbs.v11i6.1933>
38. Huang, Y.-C. (2021). Comparison and Contrast of Piaget and Vygotsky's Theories. *Advances in Social Science, Education and Humanities Research/Advances in Social Science, Education and Humanities Research*. <https://doi.org/10.2991/assehr.k.210519.007>
39. Indalecio, R. (2022). Western Pacific Teachers' Perceptions of Implementing Technology in the Classroom. *International Journal of Social Science and Human Research*, 5(1). <https://doi.org/10.47191/ijsshr/v5-i1-09>
40. Kafia, E., Ibrahim, S., & Ibrahim, E. (2023). Inclusive education and its fundamental characteristics: A reflection on the evidence-based approach. *Journal of Pharmacy And Bioallied Sciences*, 15(1), 9. https://doi.org/10.4103/jpbs.jpbs_82_23
41. Kalyani, L. K. (2024). The Role of Technology in Education: Enhancing Learning Outcomes and 21st Century Skills. *International Journal of Scientific Research in Modern Science and Technology*, 3(4), 5. <https://doi.org/10.59828/ijrmst.v3i4.199>
42. Kaminskienė, L., Järvelä, S., & Lehtinen, E. (2022). How does technology challenge teacher education? *International Journal of Educational Technology in Higher Education*, 19(1). <https://doi.org/10.1186/s41239-022-00375-1>
43. Khahro, S. H., & Javed, Y. (2022). Key Challenges in 21st Century Learning: A Way Forward towards Sustainable Higher Educational Institutions. *Sustainability*, 14(23), 16080. <https://doi.org/10.3390/su142316080>
44. Lai, W. Y. W., Yang, C., & Chu, S. K. W. (2021). Applying Social Media to Scaffold University Students' Inquiry Group Project Work – Theoretical and Practical Implications. *Journal of Information Technology Education Research*, 20, 61. <https://doi.org/10.28945/4703>
45. Leckie, A., & De, M. B. (2020). The power of an intersectionality framework in teacher education. *Journal for Multicultural Education*, 14(1), 117. <https://doi.org/10.1108/jme-07-2019-0059>
46. Leijen, Ä., Malva, L., Pedaste, M., & Mikser, R. (2022). What constitutes teachers' general pedagogical knowledge and how it can be assessed: A literature review [Review of What constitutes teachers' general pedagogical knowledge and how it can be assessed: A literature review]. *Teachers and Teaching*, 28(2), 206. Taylor & Francis. <https://doi.org/10.1080/13540602.2022.2062710>
47. Love, M., Simpson, L. A., Golloher, A., Gadus, B., & Dorwin, J. (2020). Professional Development to Increase Teacher Capacity for the Use of New Technologies. *Intervention in School and Clinic*, 56(2), 115. <https://doi.org/10.1177/1053451220914886>
48. Luong, P. A. (2022). Applying the Concepts of "Community" and "Social Interaction" from Vygotsky's Sociocultural Theory of Cognitive Development in Math Teaching to Develop Learner's Math Communication Competencies. *Vietnam Journal of Education (Online)/Vietnam Journal of Education/Giáo Dục*, 6(3), 209. <https://doi.org/10.52296/vje.2022.243>
49. Macabenta, J. M., Manubag, C. V., Tabanag, J. C., Villegas, N. B., Villegas, T. M., & Cabanilla, A. Jr. (2023). Inclusive Education: Lived Experiences of 21st century Teachers in the Philippines. *International Journal for Research in Applied Science and Engineering Technology*, 11(4), 454. <https://doi.org/10.22214/ijraset.2023.48982>

50. Markey, K., Brien, B. O., Kouta, C., Okantey, C., & Donnell, C. O. (2021). Embracing classroom cultural diversity: Innovations for nurturing inclusive intercultural learning and culturally responsive teaching. *Teaching and Learning in Nursing*, 16(3), 258. <https://doi.org/10.1016/j.teln.2021.01.008>
51. McChesney, K., & Cross, J. (2023). How school culture affects teachers' classroom implementation of learning from professional development. *Learning Environments Research*, 26(3), 785. <https://doi.org/10.1007/s10984-023-09454-0>
52. McInerney, D. M. (2005). Educational Psychology – Theory, Research, and Teaching: A 25-year retrospective. *Educational Psychology*, 25(6), 585. <https://doi.org/10.1080/01443410500344670>
53. Molina, G. M., Coronado, M. L. F., Falcón, C. F., Rivera-Zamudio, J., & Lira, L. A. N. (2021). Digital teaching skills: comparative study in higher education. *Revista Tempos e Espaços Em Educação*, 14(33). <https://doi.org/10.20952/revtee.v14i33.15527>
54. Muir, T., Deed, C., Thomas, D. P., & Emery, S. (2021). Achieving Teacher Professional Growth Through Professional Experimentation and Changes in Pedagogical Practices. *The Australian Journal of Teacher Education*, 46(9), 22. <https://doi.org/10.14221/ajte.2021v46n9.2>
55. Mukelabai, M., Siakalima, D., Simalalo, M., Muleya, G., Kaputa, T. M., & Simui, F. (2020). International Perspectives on Preparing Pre-Service Teachers for Inclusive Education Pedagogies: Implications for Developing Countries. *American Journal of Educational Research*, 8(12), 885. <https://doi.org/10.12691/education-8-12-1>
56. Muratha, S. R., Gesimba, P., & Gichuhi, D. (2020). Influence of Policy Implementation Practices on Employee Development in the Eastern Region of the Presbyterian Church of East Africa, Kenya. *Journal of Philosophy, Culture and Religion*. <https://doi.org/10.7176/jpcr/50-07>
57. Nazhafah, V. S. N., & Muslim, A. B. (2021). Indonesian Pre-Service Teachers' Intercultural Awareness in SEA Teacher Project. *Advances in Social Science, Education and Humanities Research/Advances in Social Science, Education and Humanities Research*. <https://doi.org/10.2991/assehr.k.211119.107>
58. Negi, S. (2020). Constructivist approach of Vygotsky for innovative trends in learning and teaching. *International Journal of Advanced Academic Studies*, 2(1), 349. <https://doi.org/10.33545/27068919.2020.v2.i1f.662>
59. Nozari, A., & Siamian, H. (2014). The Effects of Problem-Solving Teaching on Creative Thinking among District 2 High School Students in Sari City. *Materia Socio Medica*, 26(6), 360. <https://doi.org/10.5455/msm.2014.26.360-363>
60. Ober, T. M., Lehman, B., Gooch, R., Oluwalana, O., Solyst, J., Phelps, G., & Hamilton, L. S. (2023). Culturally Responsive Personalized Learning: Recommendations for a Working Definition and Framework. *ETS Research Report Series*, 2023(1), 1. <https://doi.org/10.1002/ets2.12372>
61. Panicker, P. (2020). Exploring cultural challenges to implementing Educational Technology in the higher education sector in India. *arXiv (Cornell University)*. <https://doi.org/10.48550/arxiv.2005.11020>
62. Phillips, L. G., & Finn, R. (2020). Learning with environments: Developing an ecological psychology inspired relational pedagogy. *Pedagogies An International Journal*, 17(1), 18. <https://doi.org/10.1080/1554480x.2020.1781639>
63. Plessis, A. E. D., Küng, E., & Plessis, D. (2024). Challenges for Pedagogical Effectiveness in an Ever-Changing Education Landscape: Conceptualisation of Pedagogical Mobility and Flexibility as a Context-Consciousness. *Education Sciences*, 14(4), 349. <https://doi.org/10.3390/educsci14040349>
64. Pozas, M., Letzel, V., Lindner, K.-T., & Schwab, S. (2021). DI (Differentiated Instruction) Does Matter! The Effects of DI on Secondary School Students' Well-Being, Social Inclusion and Academic Self-Concept. *Frontiers in Education*, 6. <https://doi.org/10.3389/feduc.2021.729027>
65. Rakhman, M. M., Dalle, J., & Suhaimi. (2020). Analysis of the Effect of ICT Education and Training, Professionalism and Performance of Elementary Teachers on the Quality of Learning in the KKG Group in Telawang, Banjarmasin. *Journal of K6 Education and Management*, 3(3), 279. <https://doi.org/10.11594/jk6em.03.03.01>
66. Saleem, A., Gul, R., & Dogar, A. A. (2021). Effectiveness Of Continuous Professional Development Program As Perceived By Primary Level Teachers. *İlköğretim Online*, 20(3). <https://doi.org/10.17051/ilkonline.2021.03.06>
67. Salehi, S., Ballen, C. J., Trujillo, G., & Wieman, C. (2021). Inclusive Instructional Practices: Course Design, Implementation, and Discourse. *Frontiers in Education*, 6. <https://doi.org/10.3389/feduc.2021.602639>

68. Shih, Y.-H., CHEN, S.-F., & Ye, Y.-H. (2020). Taiwan's "White Paper on Teacher Education": Vision and Strategies. *Universal Journal of Educational Research*, 8(11), 5257. <https://doi.org/10.13189/ujer.2020.081126>
69. Shuell, T. J. (1996). The role of educational psychology in the preparation of teachers. *Educational Psychologist*, 31(1), 5. https://doi.org/10.1207/s15326985ep3101_1
70. Siraj, I., Melhuish, E., Howard, S. J., Neilsen-Hewett, C., Kingston, D., Rosnay, M. de, Huang, R., GARDINER, J. S., & Luu, B. (2023). Improving quality of teaching and child development: A randomised controlled trial of the leadership for learning intervention in preschools. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.1092284>
71. Smetanina, M. Yu., Bobrovskaya, N. A., Abubakarova, E. V., Zherdeva, O. N., & Kozina, O. V. (2020). Development of Reflexive Thinking as Important Motivational Potential for Teaching Activity. <https://doi.org/10.2991/assehr.k.200723.071>
72. Suparno, S., Hermanto, H., Sukinah, S., Prabawati, W., Sarwendah, A. P., Dewi, G. R., Barotuttaqiyah, D., & Mumpuniarti, M. (2022). Handling behavior problems of children with special educational needs based on teacher analysis. *Journal of Education and Learning (EduLearn)*, 16(4), 484. <https://doi.org/10.11591/edulearn.v16i4.20484>
73. Tai, K. W. H. (2021). Translanguaging as Inclusive Pedagogical Practices in English-Medium Instruction Science and Mathematics Classrooms for Linguistically and Culturally Diverse Students. *Research in Science Education*, 52(3), 975. <https://doi.org/10.1007/s11165-021-10018-6>
74. Trigueros, R., Aguilar-Parra, J. M., López-Liria, R., Cangas, A. J., González, J. J., & Hernández, J. Á. (2020). The Role of Perception of Support in the Classroom on the Students' Motivation and Emotions: The Impact on Metacognition Strategies and Academic Performance in Math and English Classes. *Frontiers in Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.02794>
75. Trinidad-Velasco, R., & Cárdenas, F. R. (2020). Exploring Chemistry Teachers' General Pedagogical Knowledge through Teachers' Self-reflection. *Science Education International*, 31(3), 263. <https://doi.org/10.33828/sei.v31.i3.5>
76. Vääätäjä, J., & Ruokamo, H. (2021). Conceptualizing dimensions and a model for digital pedagogy. *Journal of Pacific Rim Psychology*, 15. <https://doi.org/10.1177/1834490921995395>
77. Vadivel, B., Namaziandost, E., & Saeedian, A. (2021). Progress in English Language Teaching Through Continuous Professional Development—Teachers' Self-Awareness, Perception, and Feedback. *Frontiers in Education*, 6. <https://doi.org/10.3389/feduc.2021.757285>
78. Wang, Q., & Li, Y. (2024). How virtual reality, augmented reality and mixed reality facilitate teacher education: A systematic review [Review of How virtual reality, augmented reality and mixed reality facilitate teacher education: A systematic review]. *Journal of Computer Assisted Learning*, 40(3), 1276. Wiley. <https://doi.org/10.1111/jcal.12949>
79. Wang, R.-J., & Shih, Y.-H. (2022). Improving the quality of teacher education for sustainable development of Taiwan's education system: A systematic review on the research issues of teacher education after the implementation of 12-year national basic education [Review of Improving the quality of teacher education for sustainable development of Taiwan's education system: A systematic review on the research issues of teacher education after the implementation of 12-year national basic education]. *Frontiers in Psychology*, 13. *Frontiers Media*. <https://doi.org/10.3389/fpsyg.2022.921839>
80. Wiedeman, C. R. (2002). Teacher Preparation, Social Justice, Equity: A Review of the Literature [Review of Teacher Preparation, Social Justice, Equity: A Review of the Literature]. *Equity & Excellence in Education*, 35(3), 200. Taylor & Francis. <https://doi.org/10.1080/713845323>
81. Wijaya, K. F. (2022). INVESTIGATING INDONESIAN EFL TEACHERS' PERCEPTIONS ON THEIR SELF-EFFICACY. *ETERNAL (English Teaching Learning and Research Journal)*, 8(1), 1. <https://doi.org/10.24252/eternal.v8i1.2022.a1>
82. Wood, E., & Bennett, N. (1998). Teachers' Theories of Play: Constructivist or Social Constructivist? *Early Child Development and Care*, 140(1), 17. <https://doi.org/10.1080/0300443981400103>
83. Woodcock, S., Gibbs, K., Hitches, E., & Regan, C. (2023). Investigating Teachers' Beliefs in Inclusive Education and Their Levels of Teacher Self-Efficacy: Are Teachers Constrained in Their Capacity to Implement Inclusive Teaching Practices? *Education Sciences*, 13(3), 280. <https://doi.org/10.3390/educsci13030280>

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84. Yusnawati, Kristiawan, M., & Puspita, Y. (2021). The Influence of School Environment and Teacher Work Motivation on Teacher Professionalism. *Advances in Social Science, Education and Humanities Research/Advances in Social Science, Education and Humanities Research*. <https://doi.org/10.2991/assehr.k.210716.139>
 85. Zeng, J. (2023). A theoretical review of the role of teacher professional development in EFL students' learning achievement [Review of A theoretical review of the role of teacher professional development in EFL students' learning achievement]. *Heliyon*, 9(5). Elsevier BV. <https://doi.org/10.1016/j.heliyon.2023.e15806>