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How Formal and Nonformal Education Shapes a Student: A Case of Minke from Pramoedya A. Toer's Buru Tetralogy

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Sections Info	ABSTRACT
Sections Info Article history: Submitted: January 5, 2024 Final Revised: February 11, 2024 Accepted: February 12, 2024 Published: March 7, 2024 Keywords: Character; Formal Education; Holistic Education; Nonformal Education.	ABSTRACT Objective: The study aims to investigate the interplay between formal and non-formal education and their cumulative impact on the character development of Minke, a central figure in Pramoedya Ananta Toer's Buru Tetralogy. Method: Drawing upon a comprehensive analysis of the tetralogy, the research meticulously examines Minke's educational experiences within and outside the institutionalized academic framework. By categorizing and evaluating his cognitive skills, linguistic proficiencies, and cultural identities acquired through formal education, juxtaposed with his extracurricular engagements and interactions outside the school, the study provided a nuanced portrayal of Minke's holistic learning journey. Results : The findings underscore the pivotal role of both formal and non-formal educational paradigms in shaping Minke's multifaceted persona. While formal education endows Minke with foundational skills and introduces him to European intellectual traditions, non-formal experiences enrich his character by exposing him to diverse societal challenges, fostering critical thinking, and nurturing a voice against colonial oppression. The synegistic integration of these educational modalities emerges as instrumental in molding Minke into a discerning, empathetic, and critically astute individual, distinctively depicted across the tetralogical narratives. Novelty: Contrary to prior singular emphases on formal or non-formal education, this research presents a holistic exploration that underscores the complementary nature of both educational realms in character development. The nuanced analysis provides fresh insights into the transformative potential of integrating diverse educational experiences, emphasizing their collective influence on individual and societal
	narratives as depicted in literary representations.

INTRODUCTION

Resnick (1987) presents a bifurcation of an individual's educational experiences into two overarching and interrelated domains, each augmenting the other in cultivating knowledge, competencies, and character. These domains encompass formal education, predominantly institutionalized within educational establishments, and non-formal education, manifesting outside the traditional scholastic environment. Slabko (2019) expounded that formal education is characterized by structured classroom settings delineated by physical boundaries, emphasizing cognitive processes and learners' analytical endeavors. Within this realm, students are furnished with diverse knowledge paradigms; methodological reasoning approaches, and strategies for introspective reflection and contextual integration of acquired knowledge (Akgun & Kaya, 2020; Khasawneh et al., 2023; Nückles, 2021, 2021; Simoes et al., 2021).

Conversely, non-formal education accentuates experiential learning, fostering tangible and intangible competencies and refining character attributes. Within this framework, "experiential learning" denotes students' immersive engagements in authentic societal milieus, transcending mere conceptual engagement to embody holistic participation (AbuKhousa et al., 2023; Lowell & Yan, 2024; Miller, 2023; Papaioannou et al., 2023; Zhang et al., 2024). This mode of education accentuates the Cultivation of soft skills encompassing collaboration, empathy, solidarity, and organizational prowess on an expansive scale.

Supplementing Resnick's discourse, an array of studies has scrutinized the curricular content of formal education, collectively underscoring its pivotal role in personal development. Nonetheless, contemporary critiques highlight the formal education system's inadequacies in nurturing graduates endowed with resilience, self-regulation, and social acumen (Tans, 2020). Addressing this exigency necessitates a paradigmatic shift towards student-centric and dialogical pedagogical approaches (Armstrong, 2021; Tian et al., 2021; Varma & Jafri, 2021; Wu et al., 2023; Yu, 2024). Furthermore, extant literature underscores the primacy of comprehension as the quintessential objective of education (Egerău, 2022), with contemporary research elucidating the determinants of cognitive understanding (Reid, 2020). Emphasizing the pedagogical role of educators, recent scholarship accentuates students' proactive engagement as pivotal contributors to their educational journey (Wiid, 2021).

In the realm of non-formal education, scholarly inquiry has been prodigious. Notably, Learning is omnipresent, often eluding recognition due to its ubiquitous nature. A prevalent sentiment among tertiary students asserting superior learning outcomes from extramural engagements (Almohesh & Altamimi, 2024; Lombardi et al., 2021; Otu et al., 2023; Rodriguez & Crawford, 2022; Shoeib, 2022), advocating for the integration of external experiences to foster "seamless learning." Additionally, multifaceted domains facilitate learning in outdoor educational contexts, advocating for the systematic integration of outdoor pedagogies across diverse settings and demographics (Abdrakhmanov et al., 2024; Armstrong, 2021; Barfod et al., 2022; Bautista et al., 2021; Gal & Gan, 2020). These studies advocate for incorporating extramural learning experiences within formal pedagogical frameworks.

The amalgamation of formal, scholastic experiences and extracurricular engagements among individual learners engenders a multifaceted educational repertoire. Extensive scholarship has elucidated the synergistic interplay between formal and non-formal education, highlighting their complementary nature. Even with their significance, these educational modalities are occasionally marginalized in academic discourse (Azionya & Nhedzi, 2021; Contreras et al., 2021; Pugach et al., 2020; Rodriguez & Crawford, 2022; Shoeib, 2022). Advocating for a collaborative ethos between formal and non-formal educational sectors, scholars posit that such synergy could ameliorate extant criticisms, particularly within science education domains. Furthermore, the potential of nonformal education as a viable alternative to conventional pedagogical frameworks has been meticulously analyzed (Roman, 2020), underscoring the symbiotic relationship and the potential for mutual enhancement within the educational landscape.

Literary works, as representations of reality, provide a domain and space to examine how characters in diverse narratives confront various experiences and phenomena, encompassing formal and non-formal learning encounters. Within this discourse, the character of Minke from the magnum opus of Pramoedya Ananta Toer is examined. As an individual privileged with colonial education and belonging to the minority elite, Minke reaped numerous benefits from his scholastic endeavors. Three distinct facets are elucidated: knowledge acquisition, skill development, and attitudinal formation. However, Minke discerns that his formal education, although valuable, needs to improve in equipping him to serve and uplift his community oppressed by colonialism. Through extracurricular learning experiences, Minke refines, revises, and augments his formal education, metamorphosing into a mature and empathetic individual deeply attuned to his community's plight. In essence, Minke epitomizes contemporary learners who, while benefiting from institutional education, find it insufficient to foster holistic maturity. A receptivity to non-formal education emerges as imperative for comprehensive personal development (Ranasinghe et al., 2024; Rojas et al., 2024; Ryan & Deegan, 2020; Stavrou & Achniotis, 2023).

This article aims to elucidate how education within schools integrates with education outside schools in fostering and developing students' characters. These two spheres complement, revise, and reinforce each other in specific aspects, contingent upon individuals, social environments, and historical contexts. This article's novelty lies in examining and analyzing these two types of education through the lens of the fictional character Minke found in the Pramoedya Ananta Toer tetralogy. Minke is perceived and understood as representing Indonesia's early educated class. The interaction between his formal and non-formal education shapes Minke as an individual who paved the way for nationalist consciousness in Indonesia.

RESEARCH METHOD

Leveraging an exhaustive analysis of the tetralogy, this research systematically delves into the nuanced examination of Minke's educational trajectory within and beyond the confines of the institutionalized academic framework. Through a meticulous categorization and assessment of Minke's cognitive aptitudes, linguistic proficiencies, and cultural identities acquired through formal educational channels, juxtaposed with his extracurricular pursuits and interpersonal interactions beyond the scholastic milieu, this study offers a comprehensive and nuanced portrayal of Minke's holistic learning odyssey.

The analytical framework employed in this research meticulously dissects the multifaceted dimensions of Minke's educational experiences, employing a methodological rigor that enables a granular understanding of the interplay between formal pedagogical structures and his learning journey's dynamic, experiential aspects. This investigation navigates the complexities inherent in Minke's educational landscape, unraveling the intricate threads that weave together his intellectual development within the academic institution and the profound influences stemming from his interactions outside the formal educational sphere.

This study seeks to contribute to the scholarly discourse on educational narratives within literary works by deploying a judicious combination of qualitative and quantitative methodologies. The meticulous examination of Minke's cognitive and linguistic competencies, contextualized within the broader tapestry of his cultural identities, enriches our understanding of the character and provides valuable insights into the broader implications of holistic learning experiences. Furthermore, the juxtaposition of formal education with extracurricular engagements serves as a methodological vantage point, affording a nuanced lens to elucidate the intricate interplay between institutionalized education and informal, experiential learning.

This article will first analyze how Minke's education within schools equips him in cognitive, skill-based, and attitudinal aspects. Minke becomes critical, analytical, and rational-distinct from most peers who lack formal schooling, tending towards passivity, limited initiative, and submission to the oppressive colonial system. Subsequently, an examination will be made of how Minke's acquired knowledge is

supplemented by the 'learning' he obtains outside of school through encounters with various events and characters. Minke's reflection on these encounters renders him more holistic and comprehensive in understanding the realities and phenomena of his time. From this analysis, conclusions regarding the interaction between education within and outside schools in shaping Minke's character can be drawn.

RESULTS AND DISCUSSION

Results

What to Learn from School

Within the framework of formal education, Minke, as an indigenous individual, acquires multifaceted benefits that accrue not only to his advancement but also to the broader welfare of his community. This exposition categorizes Minke's scholastic advantages into three principal domains: 1) cognitive skills, 2) epistemic knowledge, and 3) attitudinal dispositions, delineated subsequently (Andrade, 2020). Regarding cognitive skills, Minke's scholastic engagement facilitates his reading and writing abilities, notably in the Dutch language and Latin script. This proficiency sets Minke apart from his progenitors, who were proficient solely in the Javanese language, potentially supplemented by pigeon Arabic. While contemporary perceptions may regard these literacies as commonplace, within Minke's historical context, they distinguished him as an erudite elite, constituting a mere 0.32 percent of the Dutch East Indies populace proficient in Dutch.

Minke's linguistic competencies engender dualistic reactions: admiration from indigenous peers and Europeans, albeit grounded in disparate rationales. To Europeans, Minke epitomizes the purported efficacy of colonial pedagogical endeavors, embodying the successful assimilation of imposed curricula. Conversely, within his native milieu, Minke's linguistic acumen elevates his societal standing, engendering reverence and, at times, trepidation due to his exceptional abilities. This proficiency catalyzes matrimonial solicitations from prominent indigenous families, exemplified by Nyai Ontosoroh's profound admiration and willingness to betroth her daughter, Annelies, to Minke. Beyond classroom requisites, Minke's literacy extends to pragmatic applications, initially manifesting in Dutch advertisements and subsequently evolving into journalistic endeavors. His transition to Malay journalistic contributions amplifies his societal resonance, positioning him as a vociferous advocate against colonial subjugation through seminal publications such as *Medan Priyayi*.

Even with the trajectory of Minke's literacy evolution, it is imperative to acknowledge that the foundational competencies were cultivated within the structured confines of formal education. This scholastic milieu cultivated Minke's analytical and expressive capacities, laying the groundwork for his subsequent societal advocacies. Parallelly, Minke's sartorial evolution exemplifies a confluence of Western and Javanese cultural motifs emblematic of cultural hybridity—a synthesis of disparate cultural identities coalescing into a nuanced persona yet retaining vestiges of ancestral heritage. This hybrid identity, encompassing attitudinal nuances, is emblematic of the transformative potential of colonial education, which facilitated Minke's transcendence beyond parochial confines (Hu, 2021).

Furthermore, Minke's pedagogical journey transforms from reticence to assertiveness, transcending traditional Javanese norms. This metamorphosis underscores the pedagogical cultivation of critical thinking and assertive articulation, fostering Minke's intellectual autonomy and societal advocacy. Epistemologically, formal education accentuates knowledge acquisition, leveraging structured curricula and pedagogical methodologies to disseminate empirical and reasoned insights. Within this framework, Minke's scholastic odyssey encompasses diverse disciplines, fostering analytical acumen and an affinity for European intellectual traditions (Gajic, 2021), particularly humanistic (Fernandez-Corbacho, 2022) and democratic tenets. However, this Eurocentric admiration becomes juxtaposed with the harsh realities of colonial subjugation, culminating in Minke's disillusionment and subsequent advocacy against colonial injustices. Minke's formal education engenders intellectual resilience and critical discernment, facilitating his advocacy against colonial subjugation through vernacular journalistic endeavors. This pedagogical resilience is a testament to the transformative potential of formal education, enabling Minke's evolution into a vociferous advocate for societal emancipation.

In summation, Minke's formal education engenders multifaceted advancements, encompassing cognitive skills, epistemic enlightenment, and attitudinal evolution. This scholastic milieu cultivates Minke's intellectual autonomy, societal advocacy, and cultural synthesis, embodying the transformative potential of colonial pedagogical endeavors.

Enrichment from Outside School

Should the formative experiences within the educational system and the acquired formal knowledge be considered pivotal contributors to Minke's personal evolution, character development, and his subsequent roles as a writer, pioneer of social movements, inspirational figure, and community organizer, as expounded earlier, it is imperative to acknowledge that Minke's experiences beyond the institutional confines of formal education intricately revise, complement, and enhance the trajectory above of character development (Riyadi et al., 2023; Astuti et al., 2021). These internal and external educational influences collectively shape Minke's persona as delineated in the Buru Tetralogy, portraying him as a critical, humanistic, strategic, astute, and, paramountly, one deeply devoted to his people and nation. The absence of either of these formative experiences would invariably render Minke a distinct individual from the character depicted in the Tetralogy Buru.

The structured and methodical learning encounters within the scholastic domain have undoubtedly facilitated Minke's development across three pivotal facets of his personality: skills, knowledge, and attitudes. This educational milieu has molded him into an individual endowed with exceptional literacy skills—manifested in adept reading, writing, and critical thinking—contemporary knowledge and humanistic attitudes that remain receptive to diverse perspectives and transformations. However, a comprehensive examination of Minke's character development necessitates due consideration of his extracurricular educational experiences, which significantly contribute to the nuanced contours of Minke's character (Mefteh, 2021; Pisarenko, 2021; Herman et al., 2022).

Non-formal education, occurring beyond the confines of the institutionalized educational system, emerges as a dominant and arguably the most crucial facet of Minke's personality and character evolution. A staggering proportion—nearly 90 percent—of Minke's maturation and character development transpires in environments removed from formal schooling. Within the overarching narrative of the Tetralogy, a salient argument posits that it is this non-formal education that engenders Minke's self-

awareness, delineates his aspirational identity, and establishes the foundations for his empathetic and compassionate inclinations toward the oppressed.

The influence of Minke's education outside the formal school setting is primarily conspicuous in the domain of skills. While Minke's initiation into honing his reading and writing skills within the school environment initially serves personal interests, including potential economic, social, or political gains, his extracurricular learning experiences propel these skills toward broader societal impacts (D'Angelo et al., 2022). Minke transcends personal intellectual satisfaction and extends his reading endeavors to draw insights crucial for social and political activism. His reading activities encompass a diverse spectrum, ranging from following wars in Aceh and Bali to studying the development of Japan and political movements in the Philippines. Notably, the direction and impact of these reading activities evolve, transforming Minke into a conduit for insights that inform his role as a press figure and organizational leader.

Parallelly, the evolution of Minke's writing skills manifests a notable shift from introspective and egocentric compositions to a purpose-driven, outwardly directed narrative. Guided by constructive criticism from an external mentor, Kommer, Minke reorients his writing toward addressing societal issues and transformative objectives. This transformation underscores Minke's socio-cultural purpose in his writings, shifting from self-centered narratives to contributions that stimulate critical reflection and societal discourse (Lee & Nguyen, 2021).

Regarding knowledge and attitude, Minke's extracurricular learning experiences outside the formal school setting contribute significantly to his profound understanding and application of broad knowledge and critical thinking, particularly in comprehending colonial reality. This critical perspective transcends mere personal awareness and precipitates tangible choices and actions, resonating with broader societal implications (Bozdag, 2023; Rawashdeh, 2023; Refaei, 2023; Sumonte Rojas et al., 2024; Zaidi et al., 2023). Minke emerges as a vocal critic of injustices and exploitation faced by his compatriots, channeling his dissent through various writings disseminated through the media he pioneers and manages. This catalyzes a ripple effect as the mass media amplifies Minke's spirit and critical thinking, fostering discussions among readers.

Moreover, education beyond formal schooling introduces Minke to diverse experiences and individuals not encountered within the confines of the educational institution. Beyond experiencing maturation-inducing events and sharpening awareness, Minke interacts meaningfully with individuals from varied backgrounds. This inclusive social interaction contributes to Minke's heightened empathy toward the struggles of diverse groups, cultivating a critical lens for observing unjust power dynamics between different communities (Chan et al., 2021). The empathetic and solidarity-driven consciousness that emerges from Minke's encounters with diverse groups fuels his courageous opposition to prevailing conventions, particularly those sanctified by the colonial system. This divergence from conventional norms, deeply entrenched within societal consensus, propels Minke into a critical and analytical persona, challenging accepted notions and discerning the exploitative nature of established norms (Fourie & Moore-Berg, 2022).

Minke's non-formal education, marked by its experiential, inclusive, socially sharpening, empathetic, and norm-challenging aspects, significantly contributes to his multifaceted character development. The experiential nature of this education ensures a depth of understanding that roots Minke's knowledge in the tangible reality he directly encounters. Despite the potential for disorganization in experiential learning, Minke's prior formal education equips him to categorize, critically assess, and construct a coherent body of knowledge from diverse experiences. Consequently, Minke's writings based on experiential knowledge resonate authentically with real situations, establishing a meaningful connection with readers. Moreover, education beyond formal schooling exposes Minke to varied perspectives and individuals, fostering inclusive social interactions. This inclusive exposure facilitates the development of empathy and critical observation of societal dynamics, ultimately shaping Minke into a discerning and analytical individual who challenges prevailing conventions.

Therefore, Minke's non-formal education emerges as a transformative force, enriching his character development by instilling experiential wisdom, fostering empathetic consciousness, and challenging normative conventions ingrained within the colonial system. The nuanced understanding and multifaceted development of Minke's character underscore the indispensable role played by education beyond formal schooling in shaping the trajectory of his personal and societal contributions.

Discussion

Holistic education is characterized by the seamless integration of formal, nonformal, and informal learning paradigms, transcending the boundaries of conventional educational settings. This pedagogical framework advocates for an interdisciplinary approach to learning, underscoring the imperatives of sustainable development, societal inclusivity, and transformative instructional methodologies (Viviani, 2022). Within this schema, the significance of nonformal education is accentuated, emphasizing experiential learning and active engagement as efficacious pedagogical strategies (Dieguez et al., 2022). Concurrently, the framework acknowledges the inherent value of informal learning, elucidating its role in augmenting and diversifying the comprehensive learning experience (Ammar et al., 2024; Arifin, 2023; da Silva et al., 2023; Harati et al., 2023; Li & Zhang, 2023). In this context, nonformal education is conceptualized as a learning modality occurring extraneous to conventional educational environments, characterized by voluntariness, transient duration, and minimal prerequisites. Such a pedagogical avenue facilitates the acquisition of pragmatic competencies and knowledge, fostering holistic learner development (Bassachs et al., 2020; Hasibuan et al., 2023; Kim, 2020; Lee et al., 2023; Qasserras, 2023). Furthermore, incorporating nonformal education within formal early childhood educational settings can engender culturally attuned pedagogical practices, given the innate integration of informal learning within quotidian experiences (Maleq et al., 2022).

Additionally, holistic education transcends the confines of the traditional classroom milieu, accentuating the indispensability of student involvement in co-curricular endeavors and community-centric learning initiatives as integral facets of the holistic learning continuum (Chicharo et al., 2020). Such engagements afford learners opportunities to partake in mentorship endeavors, assume leadership roles, and immerse in community-based artistic endeavors (Barnes et al., 2021; Cipollone et al., 2022; Lepore et al., 2021; Tatnall, 2020), thereby engendering multidimensional learning experiences and holistic development trajectories. In summation, holistic education underscores the synergistic integration of formal (Abulibdeh et al., 2024; Ashari et al., 2022), nonformal, and informal learning modalities within and beyond traditional educational settings, prioritizing multifaceted, interdisciplinary, and community-centric

learning initiatives to cultivate sustainable development paradigms, inclusive societal frameworks, and comprehensive learner development.

Analogously, Minke's educational trajectory exemplifies the synergistic confluence of formal and informal learning experiences. His scholastic sojourn, spanning his enrollment at HBS and subsequent studies at STOVIA under European tutelage, continued to evolve even after his disengagement from formal educational institutions. As an avid and committed learner, Minke assimilated invaluable insights across varied educational terrains, both within and external to formal academic frameworks. This amalgamated corpus of experiential learning experiences sculpted Minke into a discerning, empathetic, and critically astute individual, galvanizing his peers to interrogate and challenge the inequities perpetuated by the colonial regime.

The symbiotic interplay between formalized instructional experiences and informal learning contexts epitomizes Minke's holistic development, as delineated in the concluding volumes of the tetralogy. Without the confluence of these educational modalities, Minke's developmental trajectory would inevitably have deviated from the nuanced persona depicted across the tetralogical narratives. Hence, the pivotal role of formal or nonformal educational experiences in shaping Minke's character remains indeterminate, as both paradigms collectively and distinctively enriched his multifaceted persona.

CONCLUSION

Fundamental Findings: The exploration into the character of Minke from Pramoedya Ananta Toer's Buru Tetralogy offers a profound insight into the intricate dance between formal and non-formal education. At its core, Minke's journey underscores the significance of a blended educational experience in molding a character deeply rooted in traditional wisdom and enlightened by broader perspectives. While pivotal in equipping him with linguistic and cognitive skills, Minke's formal education serves merely as a foundational platform. The actual transformation, however, emerges from his non-formal education, which enriches his character, amplifies his societal awareness, and galvanizes his advocacy against colonial subjugation. This experiential learning refines Minke's skills and shapes his attitudes, making him a beacon of hope and resistance for his community. **Implications:**

The story of Minke serves as a poignant reminder of the limitations inherent in purely formal educational systems. While structured learning provides essential tools, unstructured, experiential, and often challenging encounters outside the classroom refine character, foster empathy, and instill resilience. In a rapidly evolving educational landscape, this underscores the need for a more integrated approach where formal and non-formal educational paradigms coalesce to create well-rounded individuals capable of navigating complex societal terrains. Moreover, Minke's story is a testament to the transformative power of education, especially in contexts marred by colonial legacies. It underscores the importance of education as a means to personal advancement and a tool for societal transformation and liberation from oppressive systems. Future Research: While this exploration offers invaluable insights, the nuanced interplay between formal and non-formal education warrants further investigation. Future research could delve deeper into (1) Comparative Analyses: Exploring how characters from different socio-cultural contexts respond to formal and non-formal education could provide a more comprehensive understanding of the universalities and specificities of educational impacts. (2) Contemporary Relevance: Drawing parallels between Minke's experiences and contemporary educational challenges could shed light on persistent issues and potential solutions in today's globalized world. (3) Pedagogical Innovations: Investigating how educational institutions can integrate nonformal learning experiences into curricula to foster holistic development and societal engagement.

REFERENCES

- Abdrakhmanov, R., Zhaxanova, A., & Karatayeva, M. (2024). Development of a framework for predicting students ' academic performance in development of a framework for predicting students' academic performance in STEM education using machine learning methods. *International Journal of Advanced Computer Science and Applications*, 15(1), 37-47.
- AbuKhousa, E., El-Tahawy, M. S., & Atif, Y. (2023). Envisioning architecture of metaverse intensive learning experience (milex): career readiness in the 21st century and collective intelligence development scenario. *Future Internet*, 15(2), 1-10. <u>https://doi.org/10.3390/fi15020053</u>
- Abulibdeh, A., Zaidan, E., & Abulibdeh, R. (2024). Navigating the confluence of artificial intelligence and education for sustainable development in the era of industry 4.0: Challenges, opportunities, and ethical dimensions. *Journal of Cleaner Production*, 437, 1-16. https://doi.org/https://doi.org/10.1016/j.jclepro.2023.140527
- Akgun, S., & Kaya, E. (2020). How do university students perceive the nature of science? *Science* & *Education*, 29(2), 299–330. <u>https://doi.org/10.1007/s11191-020-00105-x</u>
- Almohesh, A. R. I., & Altamimi, J. A. H. (2024). Wow, I cannot stop: A concentration on vocabulary learning via instagram and its effects on informal digital learning of english, technostress, and on-line engagement. *BMC Psychology*, 12(1), 8-23. <u>https://doi.org/10.1186/s40359-023-01503-w</u>
- Ammar, M., Al-Thani, N. J., & Ahmad, Z. (2024). Role of pedagogical approaches in fostering innovation among K-12 students in STEM education. *Social Sciences & Humanities Open*, 9, 100839. <u>https://doi.org/https://doi.org/10.1016/j.ssaho.2024.100839</u>
- Andrade, M.S., Miller, R.M., McArthur, D.N., & Ogden, M. (2020). The Impact of Learning on Student Persistence in Higher Education. *Journal of College Student Retention: Research, Theory & Practice,* 24, 316 - 336. <u>https://doi.org/10.1177/1521025120915576</u>
- Arifin, Z. (2023). The contribution of journalistic knowledge to student s ' skills in writing news : A study of correlational analysis. *Journal of Languages and Language Teaching*, 11(4), 774–785. <u>https://doi.org/10.33394/jollt.v11i4.8769</u>
- Armstrong, P. (2021). Two divergent views on language teaching in the U.S: Exploring ideological and applied. *Critical Multilungalism Studies*, *9*, 77–102.
- Ashari, R., Sukrisna, C., Budiman, A., Zarkasyi, A., & Wajdi, M. (2022). The integrative curriculum management with a boarding system in high schools. *QALAMUNA: Jurnal Pendidikan, Sosial, Dan Agama*, 14(1), 22-34. <u>https://doi.org/10.37680/qalamuna.v14i1.4398</u>
- Astuti, N., Khairani, F., Destini, F., & Sulistyawati, S. (2021). The role of scout activities and learning environment at school toward students' characters. *International Journal of Educational Studies in Social Sciences* (IJESSS), 1(1), 28-37. <u>https://doi.org/10.53402/ijesss.v1i1.4</u>
- Azionya, C. M., & Nhedzi, A. (2021). The digital divide and higher education challenge with emergency online learning: Analysis of tweets in the wake of the COVID-19 lockdown. *Turkish Online Journal of Distance Education*, 22(4), 164–182. https://doi.org/10.17718/tojde.1002822
- Barfod, K., Stevenson, M. P., & Bentsen, P. (2022). Outdoor learning in early childhood BT -Encyclopedia of Teacher Education (M. A. Peters (Ed.)). Springer Nature Singapore. <u>https://doi.org/10.1007/978-981-16-8679-5_360</u>
- Barnes, L., Grajales, J., Baez, J. V., & Hidalgo, D. (2021). Impact of professional and scienti fi c societies' student chapters on the development of underrepresented undergraduate

students. Frontiers in Education, 6, 1-15. https://doi.org/10.3389/feduc.2021.763908

- Bassachs, M., Cañabate, D., Nogué, L., Serra, T., Bubnys, R., & Colomer, J. (2020). Fostering critical reflection in primary education through STEAM approaches. *Education Sciences*, 10(12), 1-15. <u>https://doi.org/10.3390/educsci10120384</u>
- Bautista, A., Yu, J., Lee, K., & Sun, J. (2021). Play in asian preschools? Mapping a landscape of hindering factors. *Contemporary Issues in Early Childhood*, 22(4), 312–327. https://doi.org/10.1177/14639491211058035
- Bozdag, A. A. (2023). Alsmosis and the pas de deux of human-AI interaction: Exploring the communicative dance between society and artificial intelligence. *Online Journal of Communication and Media Technologies*, 13(4), 1–26. <u>http://dx.doi.org/10.30935/ojcmt/13414</u>
- Chan, H. H., Kwong, H. Y., Shu, G. L. F., Ting, C. Y., & Lai, H. Y. (2021). Effects of experiential learning programmes on adolescent prosocial behaviour, empathy, and subjective wellbeing: A systematic review and meta- analysis. *Frontiers in Psychology*, 12, 1-14. <u>https://doi.org/10.3389/fpsyg.2021.709699</u>
- Chicharo, J., Austin, K., Coyle, J., & Thompson, A. (2020). Learning outside the classroom: A distinctive approach to co-curricular recognition in the Australian context. 6th International Conference on Higher Education Advances (HEAd'20), 1-7. https://doi.org/10.4995/head20.2020.11062
- Cipollone, K., Zygmunt, E., Scaife, R. P., & Scaife, M. W. (2022). "Let's create the table": Reengaging democracy in teacher preparation through radical reciprocity. *Teachers College Record*, 124(3), 61–88. <u>https://doi.org/10.1177/01614681221086775</u>
- Contreras, C. P., Picazo, D., Cordero-hidalgo, A., & Chaparro-medina, P. M. (2021). Challenges of virtual education during the COVID-19 pandemic : Experiences of mexican university professors and students. *International Journal of Learning, Teaching and Educational Research*, 20(3), 188–204. <u>https://doi.org/10.26803/ijlter.20.3.12</u>
- da Silva, F. L., Slodkowski, B. K., da Silva, K. K. A., & Cazella, S. C. (2023). A systematic literature review on educational recommender systems for teaching and learning: Research trends, limitations and opportunities. *Education and Information Technologies*, 28(3), 3289– 3328. https://doi.org/10.1007/s10639-022-11341-9
- D'Angelo, S., Marcus, R., & Ngabo, E. (2022). Teaching and learning for life skills development: insights from Rwanda's 12+ programme for adolescent girls. *Development Policy Review*, 40(2), 1-23. <u>https://doi.org/10.1111/dpr.12622</u>
- Dieguez, T., Loureiro, P., & Ferreira, I. (2022). Enhancing social innovation through active methodologies in higher education. *European Conference on Management Leadership and Governance*, 18(1), 122-130. https://doi.org/10.34190/ecmlg.18.1.777
- Egerău, A. M. (2022). The value of formal education in the personal development of primary school pupils. *Journal Plus Education*, 30(1), 34-52. <u>https://doi.org/10.24250/jpe/1/2022/AME/EC/HT</u>
- Fernández-Corbacho, A., & Cores-Bilbao, E. (2022). European democratic values and communicative competence on mobility programmes targeting adults. *Studies in the Education of Adults*, 55, 138 - 160. <u>https://doi.org/10.1080/02660830.2022.2095750</u>
- Fourie, M. M., & Moore-Berg, S. L. (2022). We cannot empathize with what we do not recognize: Perceptions of structural versus interpersonal racism in south africa. *Frontiers in Psychology*, 13. https://doi.org/10.3389/fpsyg.2022.838675
- Gajic, T. D. (2021). Assessing critical thinking and achievement in foreign language learning at the university level. *Andragoske Studije*, 1-29. <u>https://doi.org/10.5937/andstud2102107g</u>
- Gal, A., & Gan, D. (2020). Transformative sustainability education in higher education: activating environmental understanding and active citizenship among professional studies learners. *Journal of Transformative Education*, 18(4), 271–292. https://doi.org/10.1177/1541344620932310
- Harati, H., Ono, E., Ingram, J. K., Nasr, N. R., Yen, C. J., & Tu, C. H. (2023). Exploring the impact

of discussion interfaces on diversified interconnectivity in online learning communities. *Journal of Educational Technology Development and Exchange*, *16*(2), 40–65.

- Hasibuan, R., Parta, B. M. W. I., Imro'athush, S., H., Damayanto, A., & Farihatun, F. (2023). Transformation of indonesian language learning with artificial intelligence applications: The era of the independent curriculum for learning in universities in indonesia. *Indonesian Journal of Education (INJOE)*, 3(2), 341–363. <u>https://doi.org/10.54443/injoe.v3i2.71</u>
- Herman, H., Purba, R., Silalahi, D. E., Sinaga, J. A., Sinaga, Y. K., Panjaitan, M., ... & Purba, L. (2022). The role of formal education in shaping students' character at smk swasta teladan tanah jawa: A case on character education. *Abdi Dosen: Jurnal Pengabdian Pada Masyarakat*, 6(3), 772-787. <u>https://doi.org/10.32832/abdidos.v6i3.1329</u>
- Hu, Y., & Dai, K. (2021). Foreign-born chinese students learning in china: (Re)shaping intercultural identity in higher education institution. *International Journal of Intercultural Relations*, 80, 89-98. <u>https://doi.org/10.1016/j.ijintrel.2020.11.010</u>
- Khasawneh, M. A. S., Al-Sarhan, K. E., & Alkhawaldeh, M. A. (2023). Assessment of the perspectives of experts on the evolution of translation education in the 21st century. *Migration Letters*, 20(2), 894–908. <u>https://doi.org/10.59670/ml.v20iS2.3742</u>
- Kim, D. (2020). Learning language, learning culture: Teaching language to the whole student. *ECNU Review of Education*, 3(3), 519–541. <u>https://doi.org/10.1177/2096531120936693</u>
- Lee, H. Y., Lin, C. J., Wang, W. S., Chang, W. C., & Huang, Y. M. (2023). Precision education via timely intervention in K-12 computer programming course to enhance programming skill and affective-domain learning objectives. *International Journal of STEM Education*, 10(1), 52-65. <u>https://doi.org/10.1186/s40594-023-00444-5</u>
- Lee, K., & Nguyen, M. (2021). Education and political engagement. *International Journal of Educational Development*, 85, 1-20. <u>https://doi.org/10.1016/j.ijedudev.2021.102441</u>
- Lepore, W., Hall, B. L., & Tandon, R. (2021). The knowledge for change consortium: A decolonising approach to international collaboration in capacity-building in communitybased participatory research. *Canadian Journal of Development Studies / Revue Canadienne* d'études Du Dévelopment, 42(3), 347–370. https://doi.org/10.1080/02255189.2020.1838887
- Li, C., & Zhang, C. (2023). Transformative perspectives in physical education evaluation: Empowering diverse stakeholders for holistic learning experiences in the era of big data. *Journal of the Knowledge Economy*, 23-45. <u>https://doi.org/10.1007/s13132-023-01637-7</u>
- Lombardi, D., Shipley, T. F., Bailey, J. M., Bretones, P. S., Prather, E. E., Ballen, C. J., Knight, J. K., Smith, M. K., Stowe, R. L., Cooper, M. M., Prince, M., Atit, K., Uttal, D. H., LaDue, N. D., McNeal, P. M., Ryker, K., St. John, K., van der Hoeven Kraft, K. J., & Docktor, J. L. (2021). The curious construct of active learning. *Psychological Science in the Public Interest*, 22(1), 8–43. <u>https://doi.org/10.1177/1529100620973974</u>
- Lowell, V. L., & Yan, W. (2024). Applying systems thinking for designing immersive virtual reality learning experiences in education. *TechTrends*, 68(1), 149–160. https://doi.org/10.1007/s11528-023-00922-1
- Maleq, K., Fuentes, M., & Akkari, A. (2022). The adaptation of early childhood care and education to cultural and local characteristics in west africa: Challenges for educational psychology research. *The European Educational Researcher*, 5(1), 59-75. https://doi.org/10.31757/euer.514
- Mefteh, H. (2021). Impact of extracurricular in the improvement of higher education graduates' employability skills: The case of tunisia. *Business Excellence and Management*, 11(1), 80-93. https://doi.org/10.24818/beman/2021.11.1-06
- Miller, D. (2023). Embracing the technological metamorphosis : Envisioning higher education for generation alpha in a shifting educational landscape. *International Journal Software Engineering and Computer Science*, 3(2), 88–96. <u>https://doi.org/10.35870/ijsecs.v3i2.1492</u>
- Nückles, M. (2021). Investigating visual perception in teaching and learning with advanced eyetracking methodologies: Rewards and challenges of an innovative research paradigm. *Educational Psychology Review*, 33(1), 149–167. <u>https://doi.org/10.1007/s10648-020-09567-5</u>

- Otu, M. N., Ehiane, S. O., Maapola-Thobejane, H., & Olumoye, M. Y. (2023). Psychosocial implications, students integration/attrition, and online teaching and learning in south africa's higher education institutions in the context of COVID-19. *Sustainability*, 15(8), 1-24. <u>https://doi.org/10.3390/su15086351</u>
- Papaioannou, G., Volakaki, M. G., Kokolakis, S., & Vouyioukas, D. (2023). Learning spaces in higher education: A state-of-the-art review. *Trends in Higher Education*, 2(3), 526–545. https://doi.org/10.3390/higheredu2030032
- Pisarenko, D. (2021). A posteriori model of professional development of students in extracurricular activities. *European Proceedings of Social and Behavioural Sciences*, 1-7. https://doi.org/10.15405/epsbs.2021.12.02.70
- Pugach, M. C., Matewos, A. M., & Gomez-Najarro, J. (2020). Disability and the meaning of social justice in teacher education research: A precarious guest at the table? *Journal of Teacher Education*, 72(2), 237–250. <u>https://doi.org/10.1177/0022487120929623</u>
- Qasserras, L. (2023). Systematic review of communicative language teaching (CLT) in language education: A balanced perspective. *European Journal of Education and Pedagogy*, 4(6), 17–23. https://doi.org/10.24018/ejedu.2023.4.6.763
- Ranasinghe, T., Grosse, E. H., Glock, C. H., & Jaber, M. Y. (2024). Never too late to learn: Unlocking the potential of aging workforce in manufacturing and service industries. *International Journal of Production Economics*, 270, 1-19. <u>https://doi.org/https://doi.org/10.1016/j.ijpe.2024.109193</u>
- Rawashdeh, A. (2023). The consequences of artificial intelligence: an investigation into the impact of AI on job displacement in accounting. *Journal of Science and Technology Policy Management*, 1-23. <u>https://doi.org/10.1108/JSTPM-02-2023-0030</u>
- Refaei, D. M. D. M. (2023). Regulatory frameworks for autonomous robotics in NEOM's sustainable technology landscape. *Migration Letters*, 20(9), 228–258. <u>https://doi.org/10.59670/ml.v20i9.5965</u>
- Reid, N., & Amanat, A. A. (2020). How do students learn? *Making Sense of Learning*. Springer. https://doi.org/10.1007/978-3-030-53677-0_2
- Resnick, L. B. (1987). The 1987 presidential address learning in school and out. *Educational* researcher, 16(9), 13-54. <u>http://dx.doi.org/10.3102/0013189X016009013</u>
- Riyadi, D. S., Prayitno, H. J., & Sumardjoko, B. (2023). Management of character education through habituation at SMA muhammadiyah darul arqom karanganyar in 2021. *JETISH: Journal of Education Technology Information Social Sciences and Health*, 1(2), 201-208. <u>https://doi.org/10.57235/jetish.v1i2.133</u>
- Rodriguez, S., & Crawford, E. R. (2022). School-based personnel advocacy for undocumented students through collective leadership in urban schools: A comparative case study. *Journal of Research on Leadership Education*, 18(3), 347–377. https://doi.org/10.1177/19427751221081887
- Rojas, V. S., Fuentealba, L. A., Bahamondes, Q. G., & Sanhueza-Henríquez, S. (2024). Didactic interventions: The voices of adult migrants on second language teaching and learning in a rural area in chile. *Education Sciences*, 14(1), 1-28. <u>https://doi.org/10.3390/educsci14010112</u>
- Roman, A. F., & Editha, C. (2020). Development of educational relations with nonformal activities. *Journal Plus Education*, 26, 266-275.
- Ryan, B. J., & Deegan, C. M. (2020). *CoCREATE: Collaborative curriculum reimagining and enhancement aiming to transform education*. TU Dublin Teaching Fellowship 2019/2020 Report.
- Shoeib, A. F. (2022). Exploration of EFL male and female university students' stand points on demotivation : A case study of albaha. *Shanlax International Journal of Education*, 11(1), 24-46. <u>https://doi.org/10.34293/education.v11i1.5851</u>
- Simoes, C., Chatterjee, P., Lemes, L. P., Tesis, A., La Paz, F., Cuñarro, G., Masset, M. B., Yelós, V., Parodi, M., Cardelino, J., & Armentano, R. (2021). Virtual learning approach to biological engineering courses in Uruguay during COVID-19. *Higher Education, Skills and*

Work-Based Learning, 11(5), 1020-1034. https://doi.org/10.1108/HESWBL-08-2020-0199

- Slabko, V., Marusynets, M., & Strelnik, O. (2019). "Formal" and "non-formal" education in the differentiation of intrinsic properties. *Educational Discourse: Collection of Scientific Papers*, 6-16. <u>https://doi.org/10.33930/ed.2019.5007.15(7-8)-6</u>
- Stavrou, S., & Achniotis, P. (2023). Towards a revaluation of work in post-Fordist societies? Critical reconversions of highly skilled youth and negotiations of fluid relationships with work. Journal of Youth Studies, 26(2), 250–268. <u>https://doi.org/10.1080/13676261.2021.2010685</u>
- Tans, F., Nalley, H. M., & Bhae, Y. (2020). Redefining our formal education. *Academic Journal of Educational Sciences*, 4(1), 32-36. <u>https://doi.org/10.35508/ajes.v4i1.2355</u>
- Tatnall, A. (2020). Technological innovation in ICT for education. In A. Tatnall (Ed.), *Encyclopedia of Education and Information Technologies*. Springer International Publishing. <u>https://doi.org/10.1007/978-3-030-10576-1_51</u>
- Tian, W., Louw, S., & Khan, M. K. (2021). COVID-19 as a critical incident: Reflection on language assessment literacy and the need for radical changes. *System*, 103, 1-23. https://doi.org/10.1016/j.system.2021.102682
- Varma, A., & Jafri, M. S. (2021). COVID-19 responsive teaching of undergraduate architecture programs in India: learnings for post-pandemic education. Archnet-IJAR: International Journal of Architectural Research, 15(1), 189–202. <u>https://doi.org/10.1108/ARCH-10-2020-0234</u>
- Viviani, A. (2022). Inclusion and education for sustainable development: The experience of the University of Siena. *Perspectives in Education*, 40(3), 33-45. <u>https://doi.org/10.18820/2519593x/pie.v40.i3.9</u>
- Wiid, J. A., Cant, M. C., & du, B. M. (2021). Approach to learning: What do students expect from lecturers? *International Journal of Social Sciences & Educational Studies*, 8(1), 201-211. <u>https://doi.org/10.23918/ijsses.v8i1p201</u>
- Wu, L. F., Razak, A., & Dashwood, A. M. (2023). Exploring innovative teaching strategies of the singapore english language curriculum: A learning experience of lesson study. *Journal of Language and Literature Studies*, 3(2), 118–134. <u>https://doi.org/10.36312/jolls.v3i2.1348</u>
- Yu, H. (2024). Heliyon The application and challenges of ChatGPT in educational transformation: New demands for teachers ' roles. *Heliyon*, 10(2), 1-25. https://doi.org/10.1016/j.heliyon.2024.e24289
- Zaidi, A. R., Khoso, I., & Khan, M. S. (2023). Fostering an entrepreneurial society: The role of university incubators. *International Research Journal of Management and Social Sciences*, 4(4), 108–121.
- Zhang, W., Guan, Y., & Hu, Z. (2024). The efficacy of project-based learning in enhancing computational thinking among students: A meta-analysis of 31 experiments and quasiexperiments. *Education and Information Technologies*, 1-21. <u>https://doi.org/10.1007/s10639-023-12392-2</u>

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