

Jack Mezirow Transformative Learning in Islam: A Case Study of Micro-Credential Perceptions and Students' Lifelong Learning

Rahmat Lutfi Guefara¹, Robingun Suyud El Syam, Mohammad Ardin Suwadi³

Universitas Sains Al-Qur'an Wonosobo, Indonesia^{1,2}, Tomsk Polytechnic university, Russian Federation³.

Abstract

This research explores Jack Mezirow's transformative learning theory in the context of Islamic education. It focuses on the perception of micro-credentials and lifelong learning, aiming to provide a comprehensive understanding of these concepts in Islamic pedagogy. This type of research is field research using qualitative methods that focus on a case study approach to investigate how transformative learning can be implemented effectively in Islamic education and how micro-credentials influence perceptions of learning. Data collection techniques used interviews, observation and documentation with sampling using purposive techniques with 10 teachers and 50 students as respondents. These findings highlight that transformative learning fosters deeper religious understanding and behavioral change in students, while micro-credentials increase engagement by recognizing small educational achievements. This research offers insights into how lifelong learning and transformative approaches can improve the quality of Islamic education, supporting critical and reflective thinking among students. The impact of this research is to increase higher quality Islamic education learning with a multidisciplinary approach.

Keywords: Contextual, Integrated science, Transformative Learning, Micro-Credentialing, Lifelong Learning,

Abstrak

Penelitian ini mengeksplorasi teori pembelajaran transformatif Jack Mezirow dalam konteks pendidikan Islam. Ini berfokus pada persepsi kredensial mikro dan pembelajaran seumur hidup, yang bertujuan untuk memberikan pemahaman komprehensif tentang konsep-konsep ini dalam pedagogi Islam. Jenis Penelitian ini adalah Penelitian lapangan dengan menggunakan metode kualitatif yang terfokus pada pendekatan studi kasus untuk menyelidiki bagaimana pembelajaran transformatif dapat diterapkan secara efektif dalam pendidikan Islam dan bagaimana kredensial mikro mempengaruhi persepsi pembelajaran. Teknik Pengumpulan data menggunakan Wawancara, Observasi, dan dokumentasi dengan pengambilan sample menggunakan Teknik purposive dengan responden sejumlah 10 guru dan 50 siswa. Temuan ini menyoroti bahwa pembelajaran transformatif menumbuhkan pemahaman keagamaan yang lebih dalam dan perubahan perilaku pada siswa, sementara kredensial mikro meningkatkan keterlibatan dengan mengakui prestasi kecil dalam pendidikan. Penelitian ini menawarkan wawasan tentang bagaimana pembelajaran sepanjang hayat dan pendekatan transformatif dapat meningkatkan kualitas pendidikan Islam, mendukung pemikiran kritis dan reflektif di kalangan siswa. Adapun dampak dari penelitian ini adalah peningkatan pembelajaran Pendidikan islam yang lebih berkualitas dengan pendekatan multidisipliner.

Kata kunci: Kontekstual, Ilmu terpadu, Pembelajaran Transformatif. Micro-Credensial, Pembelajaran Sepanjang Hayat,

INTRODUCTION

In the era of globalization and digital transformation, the need for lifelong learning is increasing. This concept is rooted in the understanding that education is not only limited to formal institutions, but includes learning experiences that last throughout a person's life (Sinaga, 2023). One important approach that underlies lifelong learning is transformative learning theory. Transformative learning is an approach that emphasizes profound changes in the way individuals view the world and themselves (Ndemanu & Coronel-Molina, 2022). Jack Mezirow, a leading theorist in transformative learning, suggests that this process involves critical reflection on the assumptions underlying one's beliefs (Holdo, 2023).

In the Islamic context, the concept of transformative learning has significant relevance, considering that Islamic teachings encourage its followers to continue learning and increase spiritual and intellectual understanding throughout life. (Mujahidin, 2009). In this case, the Islamic context presents a unique opportunity to enrich Mezirow's theory through a holistic integration of religious values. However, research linking transformative learning with Islamic-based learning practices is still rare, especially in relation to the use of micro-credentials. Micro-credentials, as short forms of certification that focus on specific skills, have become a global trend (Fauzi, 2019). However, how Muslim students perceive the relevance and benefits of micro-credentials in supporting lifelong learning is still a very limited topic.

A review of the literature shows that lifelong learning has long been an integral part of Islamic tradition (Intan Shazila, 2015), and transformative learning has great potential to strengthen the spiritual and intellectual aspects of education (Farida Jaya, 2021). However, most previous studies only discussed these elements separately without integrating a conceptual framework that includes transformative learning, Islam, and micro-credentials.

A number of previous studies have explored transformative learning in a variety of contexts, such as higher education, professional training, and personal

development. For example, Mezirow (Mezirow, 1991) explains that critical reflection and dialogue are the essence of transformative learning. In the Islamic context, several studies highlight the importance of value-based education that integrates spiritual and intellectual aspects (Al-Attas, 1980).

In Falaq's research, he explains the importance of applying the concept of transformative learning (Falaq, Y., Putri, N. A., Sholeh, M., Utomo, 2022). On the other hand, it is said that the perception of micro-credentials and lifelong learning can develop a higher quality Islamic education system (Paywala and Wulandari, 2022). However, there has been no research that explicitly connects Mezirow's transformative learning principles with the concept of Islamic education, especially related to lifelong learning.

On the other hand, micro-credentials have become a growing subject of research, especially as a way to improve access to education in the digital era. Study by Oliver (Oliver, B., Jorre de St Jorre, 2019) highlighting the potential of micro-credentials in providing more flexible learning pathways. However, studies on how students' perceptions of micro-credentials influence their transformative learning processes are still limited, especially in the context of Islamic education.

The conceptual framework of this research is based on Jack Mezirow's transformative learning theory (Nawawi, A. N. A., Muhammad, F. M. F., Kusaeri, 2024), the concept of micro-credentials, and the principles of lifelong learning in Islam. Through this conceptual framework, this research will analyze the relationship between the concept of transformative learning, perceptions of micro-credentials, and lifelong learning in the context of Islamic education (Miao, M., Ahmed, M., Ahsan, N., Qamar, 2023), as well as presenting a comprehensive understanding of these issues.

This research was carried out to bridge this gap by exploring how transformative learning theory can be aligned with Islamic values in supporting lifelong learning. In addition, this research offers novelty by identifying Muslim

students' perceptions of micro-credentials as a relevant tool for developing their competencies within an educational framework based on Islamic values. A case study approach is used to provide in-depth and applicable insight into this phenomenon.

The aim of this research is to identify Jack Mezirow's concept of transformative learning on the perception of micro-credentials and Lifelong Learning in the context of Islamic Education, as well as the positive impact of this learning in Islamic education. Through achieving these goals, it is hoped that this research can contribute to the development of Islamic education theory and practice. The research results are expected to provide significant theoretical and practical contributions. Theoretically, this research enriches the literature on transformative learning in the context of Islamic values. Practically, the results of this study can be a guide for educational institutions in designing learning programs that are relevant and appropriate to the needs of Muslim students in the digital era. Apart from that, this research also opens up opportunities for further exploration regarding the synergy between transformative learning, religion, and educational technology innovation.

METHOD

The research method used in this research is qualitative, with a case study approach. This approach was chosen because the researcher wanted to gain an in-depth understanding of the perception of micro-credentials and lifelong learning in the context of Islamic education. Thus, this research will focus on detailed analysis of qualitative data obtained from interviews, observations and analysis of related documents. The case study approach is expected to provide a comprehensive and in-depth picture of the phenomenon being studied. The research design that will be used is descriptive qualitative. This design will allow researchers to comprehensively explore the relationship between these two variables in real situations (Hanyfah, S., Fernandes, G. R., Budiarmo, 2022).

The population in this study were teachers and students at MTs Kebayoran Lama, Jakarta. This school was chosen because it has a micro-credential program that is integrated into the learning curriculum. The sample in this study was chosen purposively to ensure that informants had a deep understanding of micro-credential perceptions and experiences in lifelong learning. The sample will consist of 10 teachers and 50 students who have relevant experience and knowledge in the context of Islamic education.

Data collection tools took the form of interviews which were used to gain an in-depth understanding of micro-credential perceptions, observation sheets to directly observe interactions and transformative learning practices, and document analysis which was carried out to obtain information related to lifelong learning in the context of Islamic education. Data analysis will be carried out using an inductive approach to identify patterns and themes that emerge from the data. Data analysis steps will include data reduction, data display, and data verification. Through this process, researchers will be able to identify the relationship between perceived micro-credentials and lifelong learning in the context of Islamic education. In addition, data analysis will also allow researchers to draw valid conclusions based on the findings obtained (Adlini, M. N., Dinda, A. H., Yulinda, S., Chotimah, O., Merliyana, 2022).

RESULT AND DISCUSSION

Jack Mezirow's Conception of Transformative Learning on the Perception of Micro-Credentials and Lifelong Learning in Islam

Transformative learning in Islam (Harahap, 2023) has an important role in changing individual thought patterns and behavior. This is in line with the concept of transformative learning according to Jack Mezirow, which emphasizes the process of transforming an individual's perspective through education. In the context of Islamic education, transformative learning aims to mature religious understanding

and create quality Muslim humans. Thus, transformative learning in Islam has its own depth and specificity that differentiates it from transformative learning in a general context.

The concept of transformative learning according to Jack Mezirow includes an individual's critical process in understanding and reflecting back on the beliefs and values they hold. Mezirow views that transformative learning allows individuals to gain deeper and more sustainable understanding. In the context of the Islamic religion, this concept can be applied to create changes in attitudes and a more mature understanding of religious teachings. This is in line with the main goal of transformative learning according to Mezirow, namely achieving better understanding and social justice (Jones, 2020).

Transformative learning in the context of Islamic education has a special focus on the transformation of religious values and individual morality. The main goal is to produce individuals who have a deeper understanding of religion and behavior that reflects Islamic teachings. In this case, the learning process is not only centered on theoretical understanding, but also on spiritual experiences and religious practices. Thus, transformative learning in the context of Islamic education has a holistic dimension, integrating cognitive, emotional and spiritual aspects of the individual (Hoggan, C., Kloubert, 2020).

Perceptions of Micro-Credentials in Learning

Perceived micro-credentials in learning refer to an individual's view or understanding of specific, minor knowledge, skills and competencies that can be acquired through an education or training program. This includes how individuals view the value and relevance of mastering micro-credentials in a learning context. As part of a growing educational phenomenon, understanding perceptions of micro-credentials is crucial in assessing the effectiveness of learning programs. The perception of micro-credentials can help in seeing learning achievements in more detail and specifically. The definition and concept of micro-credentials includes the

identification of small units of competency that can be recognized and assessed. It also considers the means of recognition and certification of those skills or knowledge. The concept of micro-credentials also involves a modular view of learning and a response to demands for continuous skill improvement. The relevance of micro-credentials in Islamic learning lies in their ability to increase mastery of religious knowledge and religious practices. In the context of Islamic education, micro-credentials can provide a more focused and measurable approach in understanding and testing students' understanding of small aspects of religious teachings. (Jones, 2020)(Schnepfleitner, F. M., Ferreira, 2021).

Micro-credentials are targeted and specific educational certifications, generally shorter than traditional degree programs, designed to prove specific competencies or skills in a specific field or discipline. With an emphasis on skills desired by employers—from technical skills like programming to soft skills like leadership—these programs are modular, allowing individuals to learn flexibly to suit their needs and schedules. Micro-credentials offer great flexibility and accessibility, often available online, making it easier for those who cannot pursue full-time education, while still providing official recognition from an accredited institution or professional organization. Aimed at career enhancement, micro-credentials allow individuals to unlock new job opportunities or as evidence of ongoing professional development with assessments that focus on practical competencies. With stackable features, allowing individuals to stack one credential on top of another, micro-credentials support lifelong learning and rapid adaptation to ever-changing job market demands (Stefany et al., 2023).

Jack Mezirow's transformative learning in Islam has an important role that cannot be denied in the development of micro-credentials in society (Van Noy, M. Gaston, 2023). In this context, transformative learning allows individuals to develop abilities to increase their understanding of the Islamic religion. This opens the door to independent learning which can be combined with various other learning

methods, such as the use of advanced technology, practical experience and interactive dialogue. Thus, transformative learning not only facilitates broader mastery of religious practices, but also encourages a deeper understanding of the underlying Islamic principles. In a broader context, transformative learning offers the potential to make positive changes in the perspective and behavior of individuals and society towards the religion of Islam. Additionally, it promotes the values of inclusion, open-mindedness, and respect for diversity. Thus, Jack Mezirow's transformative learning in Islam can be considered a strong foundation for building a well-informed, open, and inclusive Muslim community (Efendi, 2021).

Lifelong Learning in Islam

Lifelong learning in Islam encourages Muslims to continue learning and developing themselves in all aspects of life, both spiritually and intellectually. This is in line with the teachings of the Islamic religion which emphasizes the importance of science and knowledge. Lifelong learning also emphasizes the importance of self-reflection and increasing awareness of the duties and responsibilities as servants of Allah. This learning is an educational concept that emphasizes the importance of a continuous learning process throughout life. The main principle is that the learning process is not limited to school or formal education, but also involves learning throughout life. In Islam, lifelong learning is considered an integral part of the life of a Muslim, who must continue to learn and develop himself to become better in accordance with religious teachings. This means that learning does not stop after a person completes formal education, but continues throughout life (Balan et al., 2012).

The definition of lifelong learning includes all learning activities that occur throughout an individual's life, from formal education to independent learning. The main principle is the concept that learning is a continuous process, with the aim of increasing an individual's knowledge, skills and understanding of religion and life. The principles include an individual's awareness of the need to continue learning, an

open attitude to new knowledge, and an understanding that the learning process occurs throughout an individual's life. (Sudrajat, H., Hariati, 2021).

Implementing lifelong learning in the context of Islamic education requires efforts to expand the scope of learning outside formal environments, such as Islamic boarding schools or madrasas. This can be done through the development of continuous learning programs, both in educational institutions and in Muslim communities. There are also efforts to promote an ethos of lifelong learning among Muslims, both through religious, social and individual activities. Apart from that, there needs to be support from the community and Islamic educational institutions for the implementation of lifelong learning so that it can meet the educational needs of Muslims holistically (Sumirah et al., 2023)(Fiandi et al., 2023).

The Impact of Transformative Learning Through the Perception of Micro-Credentials as Lifelong Learning in Islamic Education

In this research, the perception of micro-credentials in Islamic learning refers to the way individuals recognize and appreciate small achievements in the religious learning process. Through interviews and observations, it was found that the perception of micro-credentials had a positive influence on students' motivation and acceptance of Islamic learning. This shows that the micro-credential approach can improve the quality of Islamic learning and create a more meaningful learning experience for students in the context of religious education.

Islamic education really needs transformative learning that can change students' way of thinking, attitudes and understanding of religion. Research has proven that this approach can encourage students to develop critical and reflective thinking in understanding Islamic principles. That way, students can become more responsible Muslim individuals and have a more complete understanding of religion. Therefore, implementing transformative learning is very important to improve the quality of Islamic education.

From an Islamic perspective, the concept of micro-credentials can be seen as a useful and practical form of knowledge obtained through short and focused learning. Islam places great emphasis on the importance of pursuing knowledge throughout life and using this knowledge for the benefit of the people. Micro-credentials, which provide specific and practical training in certain skills, can be considered an effective means of gaining knowledge that can be directly applied to work or everyday life, in line with Islamic principles regarding the importance of work and contributing positively to society.

In lifelong learning in Islam, the concept of micro-credentials also plays an important role as a means to continuously improve knowledge and skills in various aspects of life. In this context, Mezirow views that transformative learning has a very important role in fostering self-awareness and a better understanding of Islamic teachings. This is evident from the results of interviews with 10 teachers and 50 students conducted at Madrasah Tsanawiyah Al-Falah, Kebayoran Lama, Jakarta, both teachers and students expressed their views about the positive impact of implementing micro-credentials in Islamic education. Teachers emphasize how micro-credentials increase students' learning motivation by providing recognition for small accomplishments. "Implementing micro-credentials in our curriculum facilitates more focused learning," (interview) said one teacher, adding that students became more enthusiastic about achieving each credential, which directly improved their understanding of the course material. Additionally, other teachers noted that micro-credentials have strengthened students' understanding of religious concepts, helping them not only learn facts but also understand and apply those concepts in everyday life.

Students also voiced their positive experiences with the system, with one student saying, "I feel more motivated to learn because every little achievement I have is recognized. This makes me want to continue learning and understand more about Islam." Other students added that micro-credentials made them feel more

successful in their studies and more active in the learning process. "This has completely changed the way I think about religious studies. I not only remember the facts, but also understand the concepts and how they apply to my everyday life," said one student, demonstrating how micro-credentials support the development of critical thinking and reflective.

Overall, responses from teachers and students indicate that micro-credentials not only strengthen motivation and engagement in learning but also support transformations in students' religious understanding and behavior, in line with the principles of transformative learning in Islamic education. This shows that micro-credentials can be an important tool in a transformative learning process, enhancing deep and critical understanding of Islamic teachings.

Education in Islam is not only limited to spiritual or religious aspects, but also includes worldly aspects that help someone become more productive and useful for others. Therefore, the concept of micro-credentials that help individuals acquire and improve practical skills is very much in line with the Islamic vision of holistic education that integrates worldly and ukhrawi (hereafter) knowledge. This is also the concept of "Ihsan" or carrying out one's duties to the best of one's ability, which is highly valued in Islam.

There is an emphasis on how perceptions of individual micro-credentials can be a catalyst or obstacle in the transformative learning process, so that they have a close relationship in the development of individual understanding and spirituality in the Islamic context. The research results show that perceptions of micro-credentials in Islamic learning tend to be related to recognition of small achievements in the learning process, which have a transformational impact on religious understanding. This shows that micro-credentials can be an important factor in a transformative Islamic learning process. Apart from that, the research results also reveal that transformative learning in the context of Islamic education can change students' thinking patterns, attitudes and understanding of Islamic teachings, as well

as encourage them to develop critical and reflective thinking in understanding religious teachings.

CONCLUSION

This research concludes that Jack Mezirow's transformative learning has great potential in the context of Islamic education, taking into account perceptions of micro-credentials and lifelong learning. The research results also highlight the importance of implementing lifelong learning in responding to complex changes in society. Recommendations are given for the development of a curriculum that takes into account aspects of transformative learning and micro-credentials in Islamic education, as well as the need for integration of lifelong learning in the formal education system. It was found that the perception of micro-credentials in Islamic learning can influence students' ability to master material and adapt to change. Apart from that, transformative learning in the context of Islamic education is able to trigger changes in students' attitudes and thinking patterns. These findings provide a deep understanding of the importance of integrating these concepts in the development of a better Islamic education curriculum.

The implications of this research indicate that Islamic education needs to pay attention to the importance of transformative learning and micro-credentials in efforts to improve the quality of education. It is necessary to increase educators' knowledge and understanding regarding these concepts in order to be able to integrate them into the learning process. This will help create a learning environment that is more inclusive and adaptive to societal developments. As a recommendation for further research, further research is needed regarding the effectiveness of Jack Mezirow's transformative learning strategies in the context of Islamic education. In addition, it is important to explore the application of micro-credentials in the study of religion and morals in the Islamic education curriculum. Future research could also focus on developing lifelong education models that are relevant to the concepts of transformative learning and micro-credentials.

DAFTAR PUSTAKA

- Adlini, M. N., Dinda, A. H., Yulinda, S., Chotimah, O., Merliyana, S. J. (2022). Metode penelitian kualitatif studi pustaka. *Jurnal Edumaspul*, 6(1), 974–980.
- Al-Attas, S. M. N. (1980). *The Concept of Education in Islam: A Framework for an Islamic Philosophy of Education*. International Institute of Islamic Thought and Civilization (ISTAC).
- Balan, V., Marinescu, G., Ticala, L., & Shaao, M. (2012). Physical Education–Longlife Learning Factor. *Procedia - Social and Behavioral Sciences*, 46. <https://doi.org/10.1016/j.sbspro.2012.05.296>
- Falaq, Y., Putri, N. A., Sholeh, M., Utomo, C. B. (2022). TEORI PEMBELAJARAN TRANSFORMATIF PADA PENDIDIKAN IPS. . . *Harmony: Jurnal Pembelajaran IPS Dan PKN*, 7(2), 90–97.
- Farida Jaya. (2021). Desain Pembelajaran Pendidikan Agama Islam Transformatif. *Tazkiya*, X(2).
- Fauzi, B. (2019). Persepsi Mikro-Kredensial dalam Pembelajaran Islam: Studi Kasus di Pesantren Modern. *Jurnal Pendidikan Agama Islam*, 25(1), 55–68.
- Fiandi, A., Warmanto, E., & Iswantir, I. (2023). *Manajemen Kurikulum Pembelajaran Islam di Pesantren Menghadapi Era 4.0*. *Jurnal Pendidikan Tambusai*. Jptam.Org.
- Hanyfah, S., Fernandes, G. R., Budiarto, I. (2022). Penerapan metode kualitatif deskriptif untuk aplikasi pengolahan data pelanggan pada car wash. In Semnas Ristek. *Seminar Nasional Riset Dan Inovasi Teknologi*.
- Harahap, E. (2023). Menggali Prinsip-Prinsip dan Model Pembelajaran Pendidikan Agama Islam yang Transformatif: Membangun Kesadaran Spiritual dan Kemandirian Berpikir. *Al-Murabbi: Jurnal Pendidikan Islam*, 1(1).
- Hoggan, C., Kloubert, T. (2020). *Transformative Learning in Theory and Practice*. Adult Education Quarterly. academia.edu
- Holdo, M. (2023). Critical Reflection: John Dewey's Relational View of Transformative Learning. *Journal of Transformative Education*, 21(1). <https://doi.org/10.1177/15413446221086727>
- Intan Shazila, S. (2015). Membudayakan Pembelajaran Sepanjang Hayat Di Malaysia. *Jurnal UTHM*, 01.
- Jones, P. (2020). Critical transformative learning and social work education: Jack Mezirow's transformative learning theory. In *In The Routledge Handbook of Critical Pedagogies for Social Work*.
- Mezirow, J. (1991). *Transformative Dimensions of Adult Learning*. Jossey-Bass.
- Miao, M., Ahmed, M., Ahsan, N., Qamar, B. (2023). Intention to use technology for

- micro-credential programs: evidence from technology acceptance and self-determination model. *International Journal of Educational Management*.
- Mujahidin, M. (2009). KONSEP LIFELONG EDUCATION DALAM PANDANGAN ISLAM. *HUNAFA: Jurnal Studia Islamika*, 6(1). <https://doi.org/10.24239/jsi.v6i1.122.93-104>
- Nawawi, A. N. A., Muhammad, F. M. F., Kusaeri, K. (2024). REKONSTRUKSI ANDRAGOGI PENDIDIKAN ISLAM MELALUI PEMBELAJARAN TRANSFORMATIF MEZIROU. *Muslim Heritage*, 9(1), 19–43.
- Ndemanu, M., & Coronel-Molina, S. (2022). Transformative Education: From Theory to Practice - Daring to Re-Imagine and Re-Innovate. *Global Journal of Transformative Education*, 3. <https://doi.org/10.14434/gjte.v3i1.34349>
- Oliver, B., Jorre de St Jorre, T. (2019). Employability, Employability, “Employability”: Defining the New World of Work. *Higher Education Research & Development*, 37(5), 805–820.
- Schnepfleitner, F. M., Ferreira, M. P. (2021). Transformative Learning Theory–Is It Time to Add A Fourth Core Element? *Journal of Educational Studies and Multidisciplinary Approaches*, 1(1), 40–49.
- Sinaga, D. M. (2023). Pendekatan Transformative Learning Jack Mezirow Dalam Pendidikan Agama Kristen Terhadap Kelompok Lanjut Usia Pada Masa Pandemi. *Jurnal Pendidikan Dan Konseling (JPDK)*, 5(1).
- Stefany, S., Purba, H., Suhendro, A., & Banjarnahor, E. (2023). IMPLEMENTASI MIKROKREDENSIAL DI INDONESIA: MENGUKUR PENERIMAAN TEKNOLOGI MAHASISWA [THE IMPLEMENTATION OF MICROCREDENTIALS IN INDONESIA: MEASURING STUDENTS’ TECHNOLOGY ACCEPTANCE]. *Polyglot: Jurnal Ilmiah*, 19(1). <https://doi.org/10.19166/pji.v1i19.6078>
- Sudrajat, H., Hariati, R. H. (2021). Hakikat Pendidikan Sepanjang Hayat Untuk Ditanamkan Pada Siswa Sekolah Dasar. *Al-Amin Journal: Educational and Social Studies*, 6(2).
- Sumirah, S., Arsyad, M., & Sukarno, S. (2023). Peran Guru Pendidikan Agama Islam dalam Pengembangan Sikap Ilmiah dan Literasi Sains Siswa. *Journal of Educational Research*, 2(1), 81–98.
- Van Noy, M. Gaston, P. L. (2023). *Credentials: Understand the problems. Identify the opportunities*.