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Transcending traditional paradigms: the multifaceted realm of phenomenon-based learning

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Phenomenon-based learning emphasizes direct engagement with everyday phenomena, highlighting how personal experiences influence our understanding of reality. This pedagogical approach promotes an educational model centered on students' real-life experiences. Renowned for its educational standards, Finland has embraced this methodology. Through significant shifts, the nation has pursued an interdisciplinary education that values diverse perspectives. Despite challenges, notably resistance from educators, Finland's innovative strategies and commitment to high-quality education have been pivotal to its success. This transformation in teaching methodology diverges from traditional methods, endorsing a comprehensive skillset, innovation, and practical problem-solving. The adoption of this approach by various countries attests to its efficacy in fostering essential academic competencies. This article seeks to elucidate the fundamental concepts of phenomenon-based learning, dissect its five stages and their impact on competency development, examine its theoretical grounding and relationship to the approach, highlight the target competencies, and discuss the method's implementation in education.

KEYWORDS

phenomenon-based learning, Interdisciplinary approach, education, pedagogy, real-life experiences

1 Introduction

Phenomenology, initiated in the early 20th century by Edmund Husserl, is a philosophical movement that studies consciousness and experiences. It focuses on the intentionality and essence of experiences, striving to understand them by setting aside biases and preconceptions (De Chesnay, 2015). While phenomenology significantly influences educational theories, particularly in the context of learning experiences, its application extends beyond education to various human sciences and arts. In the realm of education, Phenomenon-Based Learning (PhenoBL), although sharing phenomenology's emphasis on individual experiences and perceptions in understanding phenomena, diverges in its application and scope.

As a pedagogical method, PhenoBL strongly emphasizes interdisciplinary and thematic studies of real-world phenomena, setting itself apart from phenomenology's broader philosophical framework. This practical approach aims to enhance student engagement

and motivation by linking learning to real-life situations, though it necessitates detailed planning and implementation. PhenoBL's strategy of direct engagement with real-life events reflects how personal experiences shape perception of reality, as described by Campbell (2016). Incorporating deeper phenomenological concepts, PhenoBL further supports a student-centered educational approach. It impacts educational systems in several ways, including aligning with national curriculum goals, empowering local educational authorities, and emphasizing the crucial role of teachers in curriculum development and the adoption of diverse teaching methodologies (Malik et al., 2018; Silander, 2019).

Finland's education system has evolved significantly, particularly in its curriculum. Prior to 1970, dual education systems created inequalities. The 1968 Basic Education Act initiated a unified system, fully implemented by 1976. Curriculum reforms in 1985 and 1994 focused on decentralization, teacher autonomy, and student-centered learning. A 2004 reform introduced an integrated curriculum, emphasizing local consistency. These changes sparked discussions on curriculum relevance and pedagogical approaches. Finland's education system, renowned globally, has influenced many countries with its innovative approaches, including the recent adoption of PhenoBL.

Initiated in 2016, this reform focuses on real-world phenomena, enhancing learning experiences with diverse perspectives. The curriculum shifted toward life skills and PhenoBL, challenging traditional subject-based teaching. This transition faced initial resistance from educators, requiring additional training and presenting logistical issues, particularly in remote areas. These reforms reflect Finland's commitment to adapting education to societal and global needs, emphasizing real-world readiness but necessitating significant adjustments from teachers.

2 Understanding and embracing the essence of phenomenon-based learning

PhenoBL transcends traditional project-focused education, embracing a transdisciplinary, collaborative approach. Silander (2015a) highlights its focus on global phenomena, granting learners autonomy and encouraging deep exploration across varied subjects. PhenoBL is characterized as an observation-based, systemic approach to learning, serving as a foundation for educational content and fostering a comprehensive understanding of phenomena.

Silander (2015b) identifies five dimensions of PhenoBL: holisticity, authenticity, contextuality, problem-based inquiry, and instructional process. This approach fosters a comprehensive understanding of real-world events, encouraging analysis from multiple perspectives. It challenges traditional academic boundaries, promoting interdisciplinary collaboration among educators to create cohesive and holistic learning experiences.

Authenticity in education involves using methods and resources that reflect real-world scenarios, linking academic knowledge to practical challenges. Symeonidis and Schwarz (2016) emphasize the importance of integrating real-life issues into learning by using tools and materials that enable students to address real-world problems and immerse themselves in authentic cultures and practices, which is recognized as crucial for cultivating meaningful and effective learning experiences. It includes integrating professionals from various fields into education, enhancing students' real-world skills and understanding (Silander, 2015a). Authentic learning embeds professional standards into academics, but sourcing age-appropriate, real-world problems can be challenging, necessitating engagement with local communities and industries.

Contextuality is a key aspect of PhenoBL, focusing on understanding phenomena in their natural, often ambiguous environments. It involves learners actively engaging in problem-based inquiry and knowledge construction. This approach encourages students to form hypotheses and theories, sharpen focus, and personalize learning through specific tasks and resources, using scaffolding to bridge knowledge gaps (Silander, 2015b).

The PhenoBL model revolutionizes education by integrating project, inquiry, and problem-based learning. It combines various educational philosophies into a comprehensive framework, emphasizing hands-on application and modern teaching methodologies (Silander, 2015b), setting it apart from traditional models. At the heart of this methodology is the drive toward competency development, accentuating the importance of skills such as complex problem-solving, effective teamwork, proactive participation, and goal setting, among others (Silander, 2015b).

This approach, characterized by an interdisciplinary blend of subjects and concepts, leans heavily on robust pedagogical techniques like portfolios, project-based learning, and inquiry-based explorations. Notably, the PhenoBL model's versatility allows it to be seamlessly adapted across various learning environments, making it particularly conducive for harnessing the potential of online educational contexts. The PhenoBL model emphasizes learner empowerment, transforming students into active participants in their education. It fosters intrinsic motivation but may overwhelm those used to traditional methods. Educators are advised to gradually introduce PhenoBL, starting with guided tasks before moving to autonomous explorations.

PhenoBL advocates for exploring real-world phenomena from diverse perspectives, encouraging learners to integrate various academic disciplines and real-life applications. This ensures knowledge and skills are relevant and transferable to real-world situations (Silander, 2015b). In PhenoBL, knowledge extends beyond theory to practical use, linking learning to real-world challenges for immediate relevance. This approach deepens understanding and applicability, contrasting with the limitations of superficial, rote memorization.

3 Implementation of phenomenon-based learning in education

Many countries have embraced PhenoBL to enhance educational outcomes, as it has been shown to amplify students' engagement with their studies. This method promotes interdisciplinary thinking, equipping learners to address the intricate and multifaceted challenges of today's world, as observed by Naik (2019). A significant shift in this approach has seen

students working collaboratively with teachers, rather than merely receiving information passively. This shift encourages a spirit of inquiry-led learning. Immersed in this exploratory approach, students have been found to engage with tangible real-world issues, analyzing them from diverse perspectives. Such an approach has become indispensable for cultivating individuals fortified with critical thinking skills, ready to offer solutions to real-world dilemmas and challenges. The common aspiration among countries adopting this method has been the enhancement of their educational paradigms.

Research on PhenoBL has highlighted its role in shaping innovative learning environments. Lonka (2015) posited that this method had notably enhanced essential learning facets, including school engagement, academic enthusiasm, and both social and emotional learning. This is attributed to its emphasis on investigative techniques that address genuine real-world issues. Due to such pronounced advancements in learning, countries like Finland have incorporated it as a cornerstone of their educational approach (Naik, 2019). A consistent sentiment echoed across multiple studies is that the strength of PhenoBL resides in its collective utilization of diverse expertise, research methodologies, and tools to explore authentic worldly phenomena (Lonka, 2015; Nguyen, 2018; Naik, 2019).

In their pursuit of educational advancement, Finland emphasized interdisciplinary instruction, ensuring relevance and effectiveness preceding the 2004 National Core Curriculum for Basic Education (Naik, 2019). In refining the PhenoBL approach, Finland's educational authorities delineated core competencies, including cognitive abilities, cultural understanding, communication, self-expression, wellness, literacy, technological proficiency, vocational insight, entrepreneurial acumen, and sustainability vision (Lonka, 2015). These emphases positioned Finland at the forefront of pedagogical innovation, equipping students to navigate 21st-century complexities.

Building on the global perspectives on PhenoBL, it is imperative to consider the practical classroom implementations of this educational approach. In Østergaard et al. (2010) study in Norway, they investigated the impact of PhenoBL on responsible behavior in Agroecology students. This approach encouraged collaboration, real-world immersion, and the development of critical thinking skills. The curriculum spanned 2 years, featuring an intensive agroecology-focused semester with lectures, discussions, and fieldwork across Norwegian regions. It emphasized sustainable knowledge and stakeholder engagement, incorporating diverse learning methods and reflection. Phenomenology served as the foundation for bridging academic and stakeholder communities, addressing challenges such as learning integration, teacher and stakeholder roles, and inter-professional collaboration for sustainability. The results confirmed PhenoBL helped immerse students in real-life scenarios, promoting critical thinking and practical application and equipping students with essential knowledge and a proactive mindset to address emerging issues responsibly. Practical application in farms and communities fostered responsible action.

From Europe to an urban Middle Tennessee school district in the United States of America, Towns-Belton (2022) qualitative study examined how STEM educators implemented PhenoBL. The study found that teachers' selection of learning activities was greatly influenced by factors such as administrative support, students' interests, and cultural context. In addition, it was observed that the promotion of STEM literacy in classrooms was primarily facilitated through journal articles, among other resources. It provided valuable insights into teachers' motivations, planning strategies, and implementation, highlighting their crucial role in selecting activities that not only engage students but also effectively enhance STEM literacy. The findings suggested that, despite PhenoBL's emphasis on student-driven inquiry and exploration, the teacher's role in providing guidance, support, and occasional direction is indispensable. Teachers must maintain a delicate balance: they need to impart essential foundational knowledge and allow students the freedom to explore and learn autonomously, leading to the successful implementation of PhenoBL in diverse educational settings.

The insights from Towns-Belton (2022) study not only highlight the critical role of teachers in adapting PhenoBL within their specific contexts but also emphasize the global adaptability of this approach. Just as educators in the United States of America navigated the challenges of integrating PhenoBL to enhance STEM literacy, other countries also adopted and modified this approach to meet their unique educational needs and objectives. This global adoption and adaptation were exemplified by Finland's influence on educational reforms in other countries, including the United Arab Emirates (UAE). Valanne et al. (2017) noted the UAE's shift away from traditional pedagogies to this approach, emphasizing collaboration and innovation. Adapting Finland's method, Valanne et al. (2017) found a positive correlation between PhenoBL and enhanced reading skills and motivation in Abu Dhabi. The Abu Dhabi School Model, which incorporated PhenoBL, emphasized narratives, elevating enthusiasm and proficiency in reading. This innovative model combined classic children's stories to create a comprehensive educational approach, involving educators with Finnish pedagogical expertise. The researchers employed Running Record assessment tools to assess students' oral reading, recording errors and self-corrections, facilitating the evaluation of fluency, accuracy, and comprehension and identification of areas for improvement. The study confirmed the benefits of this pedagogical model fostering inquiry-driven, student-centered instruction and consistent evaluation, ultimately enhancing reading skills and motivation.

Transitioning to Akkas and Eker (2021) study in Türkiye, it investigated the impact of PhenoBL on metacognitive awareness among 60 seventh-grade students in the 2019–2020 academic year. The experimental group experienced PhenoBL, while the control group received traditional teaching. Lessons emphasized posing learning questions, research, project preparation, problem-solving, and application. Students developed tasks, promoting systematic learning, self-evaluation, and metacognitive strategies. Using the Metacognitive Awareness Scale as both a pre-test and post-test, the study revealed that PhenoBL significantly improved students' metacognitive awareness compared to traditional teaching.

Drawing on Türkiye's experiences with PhenoBL and its impact on specialized fields, one can observe the dynamic shifts in education in ASEAN countries such as Vietnam and Thailand. Nguyen (2018) examined the impact of PhenoBL on English education in Vietnam, inspired by Finland. Vietnamese PhenoBL incorporated career guidance, international understanding, and values education. Qualitative content analysis was employed to analyze the Finland and Vietnam's national core curricula, focusing

on education viewpoints, learning goals, English curriculum content, and teaching methods within the context of PhenoBL. The study showed its effectiveness in enhancing practical life skills, increasing student autonomy, and fostering enthusiasm for English studies.

Numerous studies have explored the effects of phenomenon-based education on academic achievements in Thailand. Tongsoong and Jermtaisong (2021) conducted a study in Thailand to examine the impact of PhenoBL combined with STEAM pedagogy on creative skills in Physics for grade 12 students. They compared this approach to traditional teaching methods. The study assessed creative thinking based on originality, flexibility, elaboration, and fluency. Results revealed significant improvements in creative thinking among students who experienced STEAM education and PhenoBL, highlighting the effectiveness of this approach in enhancing interdisciplinary aptitudes in the Thai context.

Manowaluiloua et al. (2022) study in Thailand focused on PhenoBL training for teacher educators. It aimed to investigate PhenoBL components and teacher education competency, implement a PhenoBL teaching competency development (PTCD), and assess student teachers' satisfaction. The study involved 85 teacher educators from three regions, an online questionnaire, and content analysis. PTCD consisted of five modules, and the results showed increased knowledge and satisfaction, indicating the effectiveness of PhenoBL training for educators and student teachers. This reflected a shift toward more active and student-centered teaching. However, challenges included adapting PhenoBL to theory-based courses. Additionally, in research articulated by Adipat et al. (2019), it was posited that pedagogical methodologies, including PhenoBL, in tandem with other instructional approaches such as problem-based education, task-based language teaching, and inquiry-based learning, were pivotal in enhancing student-centered instruction in Thailand.

Despite its growing popularity, PhenoBL remains a nascent field in many countries, leading to a lack of sufficient data on its implementation, especially in countries that have only recently adopted the approach. While a multitude of studies have explored its impact at primary and high school levels, research concerning its use at the tertiary level remains largely unexplored. This gap highlights the need for more thorough and encompassing research, particularly within higher education, to not only realize its full potential but also to delineate a strategic pathway for its seamless integration into a country's educational framework. As scholarly exploration of phenomenon-based education expands across diverse educational landscapes, a richer repository of knowledge will emerge, further facilitating the approach's influence on academic achievements.

4 Conclusion

In the realm of education, PhenoBL challenges traditional paradigms, promoting interdisciplinary exploration for both educators and learners. Interdisciplinarity aids in understanding complex phenomena from diverse angles, highlighting the intricacy of this process. Educators play a crucial role in guiding students through the transition from old to new viewpoints.

The relationship between constructivism and phenomenon-based education is nuanced. While students' understanding is self-derived in constructivism, educators still have responsibilities. In PhenoBL, educators empower students to take the lead, leveraging organic learning moments. This requires teachers to make nuanced decisions about goals, methods, and competencies for each unique learning context. Finland's success highlights the importance of adequately preparing educators.

PhenoBL represents a paradigm shift, offering flexible, relevant, and interdisciplinary education. Success stories from countries like Finland, Thailand, Norway, and Vietnam demonstrate improved competencies in reading and critical thinking. This approach cultivates holistic skills such as problem-solving, innovative thinking, and metacognition, preparing students to address real-world challenges effectively.

5 Recommendations for future research

Based on this study's review, the following recommendations are proposed for future research. First, researchers across various fields should consider using PhenoBL to enhance students' interdisciplinary knowledge and skills, rather than focusing exclusively on a single subject. Second, PhenoBL can be utilized to improve students' content knowledge across multiple disciplines while simultaneously enhancing their second or foreign language skills, incorporating various combinations like receptive skills (reading and listening), productive skills, oral skills (speaking and listening), literacy skills (reading and writing), or a combination of all four. Third, twenty-first-century skills such as critical thinking, creative thinking, and problem-solving could be specifically explored using different research methodologies, including qualitative or mixed methods. Lastly, technology can be integrated to enhance instruction and adapt to a changing digital society. This may involve the use of Generative-AI, Datafication, Artificial Intelligence (AI) and Machine Learning, Virtual Reality (VR) and Augmented Reality (AR), and Extended Reality (ER), among others.

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