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TRANSFORMATIVE LEARNING: HOW PHENOMENON-BASED EDUCATION IS SHAPING THE FUTURE OF EDUCATION

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ABSTRACT

The current era is marked by a significant acceleration in the accumulation of knowledge. To satisfy their requirements, students must access pertinent information that is broadly applicable. It is crucial to ascertain the accuracy of this information, including its application in various contexts. Students must take an active role in managing their cognitive processes by evaluating their knowledge base. This introspection is vital for skill development across various domains. Engaging with empirical research to understand and forecast phenomena equips students with essential skills like communication, critical thinking, problem-solving, and teamwork (Fields and Kennedy, 2020).

KEYWORDS: *empirical research, cognitive skills, practical application, team collaboration, critical analysis.*

Silander (2015) identifies five dimensions essential to the phenomenon-based learning approach, emphasizing a holistic and real-world perspective on education:

1.**Integrity**: This dimension involves a cross-disciplinary and holistic view of real-world events, moving away from traditional isolated subject lessons.

2.**Authenticity**: Students engage with real-world tools, methods, and materials, participating in authentic expert practices rather than theoretical classroom scenarios.

3.**Contextuality**: Learning is deeply embedded in the natural environment, making the study of phenomena relevant and systematic.

4.**Problem-Based Learning**: Students actively formulate hypotheses and gather information, fostering a participatory and inquiry-based learning environment.

5.**Open Learning Processes**: Learners independently plan and manage their learning tasks, enhancing their initiative and adaptability.

These dimensions place students at the core of their educational experience, encouraging them to explore topics of personal interest without predefined objectives, thereby transforming them into active participants in their learning journey.

Knowledge and skills are gained through more meaningful learning experiences by engaging students actively in real-world problem-solving. In this approach, students independently uncover knowledge and skills (Zhukov, 2015). The primary objective of the phenomenon-based learning (PhenoBL) approach is to achieve deep learning and comprehension. This method is designed to allow students to thoroughly explore topics of interest using various techniques and perspectives (Silander, 2015). Additionally, PhenoBL offers students a novel learning experience, fostering self-awareness, interpretation through action, and understanding of the material studied. Learning this way becomes a significant and effective activity for students (Kivelo, 2015).

The aim of the phenomenal approach to learning is to provide students with life experiences and opportunities that enhance their enthusiasm for learning (Zhukov, 2015). This approach emphasizes the necessity of creating a supportive social environment, along with fostering curiosity, motivation, self-regulation, and personal insights, aligning with trends in metacognitive awareness.

PhenoBL significantly boosts students' skills, enhancing creativity, critical thinking, communication, game-based learning, and collaboration. It involves studying real-world phenomena in a comprehensive manner, integrating all related entities, and transcending boundaries between subjects. The core requirement of this learning process is originality and authenticity. PhenoBL is not guided by a strict set of rules but focuses on the active role of students in understanding phenomena, unlike traditional learning where students had a passive role and relied on memorization.

Within the context of the subject, PhenoBL involves students in collaborative activities to solve problems and answer questions (Blogger, 2018; Silander, 2015; Zhukov, 2016). Moreover, it emphasizes experiential learning and fostering student self-reliance for deeper understanding.

PhenoBL offers four key benefits: holistic learning, interdisciplinary learning, group learning, and integrated learning. Students engaged in the PhenoBL curriculum are not passive listeners but active participants who contribute and learn through the subject matter (Raahan, 2016). Finland's implementation of the PhenoBL approach in their curriculum has garnered significant media attention. Their strategy involves teachers focusing on one topic per year for each student, conducted through the PhenoBL program. The innovative use of technology and the school's external environment play crucial roles in engaging and activating students (Spiller, 2017). These elements demonstrate how PhenoBL can enhance students' learning abilities, expand their

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knowledge across various subjects, and extend the duration for which they can apply their skills. Observing the effects of PhenoBL in different global contexts, including outside Finland, is essential to assess the effectiveness of this learning approach.

Simultaneously, phenomenon-based learning is integrated into a problem-solving environment, where teachers initiate the process by posing questions or problems, and students collaboratively develop answers related to a phenomenon of interest (Silander, 2015a, p. 17). Learning goals are discussed rather than imposed, and assessments serve as tools for self-reflection. This student-centered learning connects theories to practical situations and phenomena. Team teaching with subject specialists is considered vital for studying phenomena comprehensively (Silander, 2015b). In this process, teachers act as coordinators of learning tasks, using their expertise not just to convey information but to encourage and guide students in solving problems they have identified themselves (Silander, 2015b).

Finland, a geographically remote nation in Northern Europe, consistently ranks at the top of global education systems. This achievement is notable given that the country requires only one standardized exam at the end of 12th grade. Despite the success of its education system, Finland reformed its national curriculum in 2016. Since then, Finnish students have been participating in periods of phenomenon-based learning (PhenoBL), a type of research-driven learning. A phenomenon is defined as an observable event or a fact that can be seen, felt, or otherwise perceived, often something unusual or interesting. Examples include scientific breakthroughs, technological trends, and natural disasters. Investigating phenomena sparks curiosity. With PhenoBL, students engage with real-world issues to investigate problems or satisfy their curiosity from multiple angles. They study phenomena as holistic entities within their real-world contexts, incorporating relevant interdisciplinary information and skills. This approach involves using data collected during research, which is then analyzed against existing models and theories. The insights derived from their investigations lead students to new understandings. Finnish students use this practical approach to explore a wide range of topics, from entrepreneurship to space exploration.

PhenoBL in Action

In Finland, I observed the English Language School in Helsinki conducting a week dedicated to the concept of time using phenomenon-based learning. Students from preschool to sixth grade participated in this event. The students examined the concept of time from various perspectives: first and second graders learned about Finnish watchmakers and built their own grandfather clocks out of cardboard. Third graders created calendars representing different cultures throughout history. Fourth and fifth graders designed futuristic cityscapes with blueprints and maps. Sixth graders created visual itineraries for their annual trip to England, all stemming from questions they posed themselves. These inquiries about time motivated and guided the learning process.

Advantages of PhenoBL

Phenomenon-based learning allows students to explore and create. I saw sixth-grade students in Finland use advanced virtual reality equipment to explore Google Earth. They viewed locations around the globe in three dimensions and interacted with these environments using motion-tracking controllers. For selected countries, students prepared detailed itineraries and travel brochures based on their research.

PhenoBL encourages timely creativity. During a week of phenomenon-based learning focused on design, Finnish students studied famous Finnish designers and then used Tinkercad, a 3D design program, to create their own designs. These ranged from practical items like furniture to imaginative creations such as new modes of transportation.

Students employ PhenoBL for protection-related projects. For instance, some seventh graders in Finland explored water consumption in their communities and homes. They created graphs to display their findings, emphasizing the need for conservation through facts and statistics. Beyond research, these students programmed LEGO robots to perform various water-related tasks, such as locating, transporting, using, or disposing of water. At the end of the project, groups presented their research, robotics programming, and water-saving solutions to a jury. This initiative stemmed from the students' interest in real-life phenomena and their desire to develop practical models, which motivated them to take action.

PhenoBL also fosters teacher collaboration. At Espunlahti School in Finland, teachers from various disciplines collaborate to design and execute interdisciplinary phenomenal projects. For example, art and physics classes work together to understand the use of lighting in photography. Similarly, biology and cooking classes team up on projects that involve studying marine life before preparing special seafood dishes.

Long-term Impact

The impact of PhenoBL extends beyond the final presentation. Students gain familiarity with the research process, develop essential 21st-century skills, and discover or renew their passion for learning. The final product is a significant element of inquiry-based learning as it allows students to share their knowledge with an audience.

Students have multiple options for demonstrating their knowledge. PhenoBL encourages them to explore innovative ways to present their projects. I've observed students creating digital and physical posters, three-dimensional models, graphic designs, and short videos. These presentation methods, being visual, are highly effective. The presentations were engaging and, hopefully, had a positive impact on the audience.

Finland's new educational model is indeed based on exciting phenomena. However, without student participation in the research elements, this model would lack its core dynamism, akin to the Sun without its orbiting planets. The students' curiosity, their quest for information, and their efforts to create products that showcase their learning make this model so

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compelling. PhenoBL inspires students to reach for the stars and empowers them to pursue their dreams through a novel approach to learning.

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