Metavism: a Pluralistic Learning Framework

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Abstract

In this paper, the topic of learning will be discussed in relation to a new learning framework known as Metavism. Metavism is a framework that underpins future learning processes within meta-ecologies of learning. Leveraging examples from current, emerging and future technology-enhanced practices, this paper will argue that formal learning experiences are entering a new epoch. Anchored upon an acceptance that emerging technologies will change the landscape of learning in its entirety, the authors will argue that future learning environments and learning effectiveness will be enhanced through artificial intelligence and techniques that have yet to be realized. Through a learning framework such as metavism, the authors will also argue that future forms of learning will help to recognise simultaneous learning across a continuum.

Key words: *learning framework; artificial intelligence;*

Towards A Pluralistic Learning Framework

Technology is becoming more and more connected to us, where now through biosensors and live data, wearable devices can give us feedback about our daily activities, activities that can be tracked, aligned and even rewarded in real time. This increased connection with technology has inspired us to explore some of the components necessary to track, align and reward individual learning in its entirety, across a life-deep continuum of learning. As part of this process, we will explore some of the challenges of, and possible solutions for, implementing a new pluralistic framework: *Metavism*. In the field of education, distinctions are often made between three sorts of learning in consideration of when it occurs (*lifelong learning*: e.g., childhood, adolescence, adulthood), through what modality it occurs (*lifewide learning*: i.e., informal, formal, or non-formal), and in what domain of our lives it occurs (*life-deep learning*: e.g., culture, cognition, communication) [1].

Typologies of Lifewide Learning

The sphere of education has three agreed upon typologies of life-wide learning: *formal*, *non-formal* and *informal learning*, also known as experiential learning. In this classification, formal learning is typically associated with learning towards a certification, like a Bachelors program at a postsecondary institution. By contrast, non-formal learning, as implied by its label, does not take place within traditional educational institutions, but is rather experienced intentionally whilst carrying out a role; for example, as an employee within a corporation [12]. Finally, experiential learning is considered as occurring naturally throughout the lifespan. Rather than viewing these as three isolated typologies, we will argue in the present paper that, through increasingly complex technologies, the existing typologies of lifewide learning may reflect a less structured division of when and where recognisable learning takes place.

The Utility of Learning Frameworks

Learning frameworks are tools that specify learning outcomes and/or competencies that define, classify, and recognize educational and industry expectations of knowledge, skills, and abilities at increasing levels of complexity and difficulty. They are not standards, and not limited to academia,

but they do allow for alignment, translation, and mapping of learning through various spaces in order to capture learning that can be valued and recognized by education, industry, and the military. Some examples of learning frameworks include the *21st Century Skills Framework*, and the *Global Learning Qualifications Framework [2]*. So why are learning frameworks needed? There are several reasons. First, they enable consistency and visibility across individualised and group experiences. Second, they provide a common language within educational spheres, thereby assisting in transferability within and across education providers, alternative learning pathways, military learning, and industries (including employer-developed expectations and career skills). Third, and perhaps most importantly, the development and implementation of novel learning frameworks can also inspire new ways of thinking about learning within environments.

There are several reasons why existing frameworks fall short of situating the sorts of learning that can occur today. For example, most frameworks are non-uniform, (where an employer might have different ways of demonstrating learning than does a College or military program). Also, whilst it is evident that there is a growing number of non-uniform learning frameworks, perhaps the greater, more persistent challenge lies in the fact that learning is happening everywhere all the time. In accepting of this, the challenge becomes *how can learning be recognised across the continuum of learning*? This is not a new question and initial roadmaps to address this has previously been laid out by Travers et al [2];

> "the diversity of the competency framework environment complicates the task of creating, interpreting, translating, and comparing competencies - opening the space for technology solutions that enable a "globally linked ecosystem of competency frameworks. To do this, artificial intelligence (AI) can be used to "interpret, align, and translate unstructured or semi-structured data that exist to be machine readable."

Roles for Artificial Intelligence and Machine Learning

The increasingly prominent role of AI and machine learning in many aspects of our lives, also raises the question of what roles they will have in the context of future environments. Indeed, given the potential for faster, accurate decision making at scale, it seems natural for their inclusion within a learning framework, such as the one we present below.

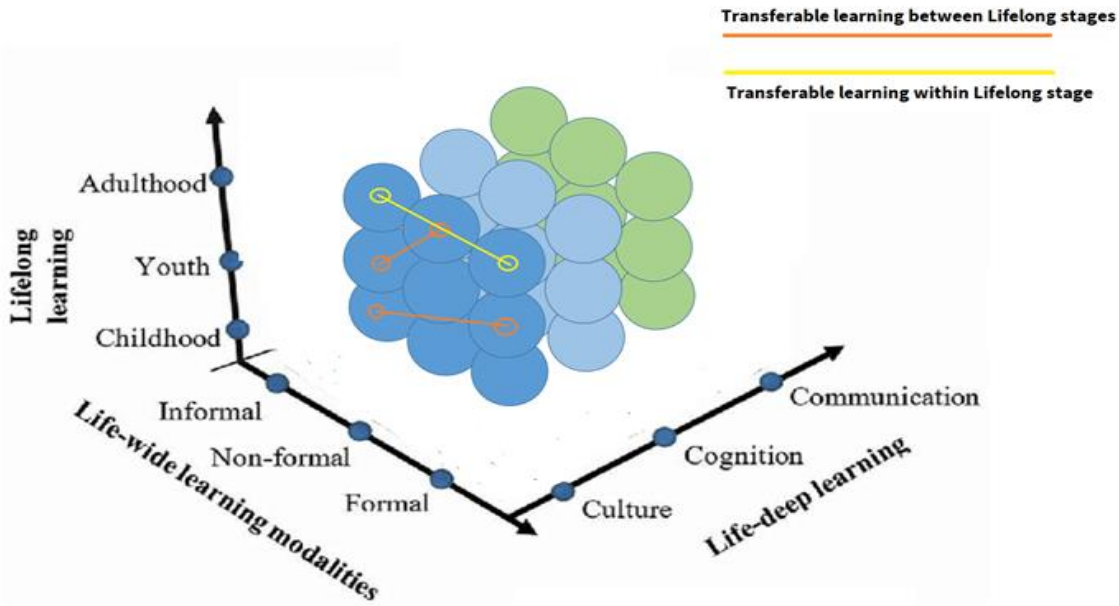
Given the popular emergence of tools like ChatGPT [3] present learners, teachers, and learning designers have an opportunity to evolve our methods for measuring learning outcomes. For example, the fact that AI can write effective and convincing essays means that we should be thinking about how to assess and reward the *process* as opposed to just the product, such as seen in research ecosystems [4] and collaborative learning environments like *Tapestry* [5]. AI and ML tools will also need to factor into principles and practices of personalisation to ensure inclusive, adaptive learning. These guiding principles and inevitable challenges relating to interoperability, data security and need for more flexible standards are now becoming key pillars of large-scale learning architecture design [6].

Implementation of Metavism

Given the advancements in both technology and pedagogy, a metavism learning framework requires that learning should be identifiable across the continuum of learning to better recognise and reward the achievement of objectives/goals. Whilst perhaps simple in concept, the challenges associated with implementing this approach are evident not only in formal learning contexts but also within the workplace, where it has been found that 33% of organisations believe it is "*too difficult to link learning to outcomes*" and 39% "*don't have the technology to support this*" [7]. It is clear then, that there are multiple challenges to consider in order to implement a simple, transferable way in which learning within a continuum, can be easily tracked and measured. This process would need to begin with a more flexible and pluralistic approach to achieving learning outcomes, globally.

Minimising global variations in formal learning outcomes

There are a variety of approaches to the organisation of formal learning across the world and these variations pose challenges in relation to categorisation and measurement. One example can be seen in Europe, where the Bologna Process has led to the adoption of a three-cycle system of higher education (bachelor's, master's, doctoral), all of which are underpinned by the European Credit Transfer and Accumulation System [8]. In contrast, in the United States, the higher education system is characterised by a four-year undergraduate degree followed by graduate studies [9]. In Asia, there is even more variance, in both the types of degrees as well as their duration. These global differences can pose challenges when it comes to categorising and measuring learning outcomes. For example, the competencies required for a bachelor's degree in Europe may differ from those required for a bachelor's degree in Africa or Asia. This can make it difficult to compare learning outcomes across different countries or to develop universal standards for measuring outcomes. Whilst challenging, there are examples of universal frameworks, such as the Global Framework for Measuring Learning (GFML), that provide a common language that can be adapted [2]. Yet, whilst these frameworks can provide a common language for measuring formal outcomes and non-formal objectives across different education systems, perhaps the larger challenges lie in the simultaneous recognition of learning within what we call the *continuum challenge*:



(Figure 1: *The Continuum Challenge*. (Adapted from Bozkurt & Ucar, 2020)

As depicted in Fig 1.0, the continuum challenge allows for a realisation of contemporary learning theories, such as connectivism, where learners are themselves nodes, in an interconnected system [10]. Examples of this connected life can be seen throughout the lifespan in Fig 1.0. For example, proficiency as a Captain of a football team as an adult can have high-transferable value in formal learning settings where skills such as *leadership*, *negotiation* and *problem solving* may be more easily developed as a result of recent, compounded experiences. This idea of inter-domain connectedness has now become so evolved that more and more people are demanding official recognition for these life-wide experiences [1]. One possible solution to this demand has been suggested through blockchain technologies. However, as highlighted by Watters (2016) [11] and Bozkurt & Ucar (2020) [12] blockchain itself has been overhyped and has experienced critiques related to quality assurance and confidence that the achievement of these learning objectives/outcomes has transpired. In light of these reservations, perhaps there is an additional, final component to consider in the pursuit of metavism; learning analytics.

The role of learning analytics

To further address the continuum challenge, it is important to consider how the achievement of learning outcomes/objectives can be measured in real-time. One popular approach is the use of *learning analytics*. Siemens [13] argues that learning analytics has the potential to transform education by providing real-time feedback to learners and teachers. As a fast evolving field, learning analytics includes several important trends and developments, including the use of machine learning and artificial intelligence and the integration of data from multiple sources. Accordingly, we propose that in order to implement metavism as a pluralistic framework, the role of AI and ML is central to automating both the synchronous support and recognition of learning throughout the lifespan.

Conclusion

In this paper, we have considered the questions of how learning can be recognised across the continuum of learning. In exploring this topic, we have identified the following guiding principles for how metavism can be implemented, at a conceptual level:

- Learning should be easily identifiable across the continuum to better recognise and reward the achievement of learning objectives or goals.
- Given technological innovations, we should be thinking about how to assess and reward the process of learning, as opposed to just the end product,
- Implementing a pluralist framework would need to begin with a more flexible and interoperable approach to achieving learning outcomes, globally.
- To implement metavism as a pluralistic framework, the role of AI and ML is central to automating the synchronous support, assessment and recognition of learning throughout the lifespan.

We have argued that new technologies, like AI and ML, will be critical for the implementation of metavism. While technology has evolved to facilitate a framework like metavism, we would like to acknowledge that there are growing concerns surrounding the ethical use of AI and learning analytics. Accordingly, there will need to be careful consideration of when during a person's lifespan a living portfolio, or continuum of learning, can and should be implemented. These questions are not easily addressed and are compounded by questions about the future role and value of schools, colleges and universities as the formal recogniser and provider of learning.

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