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Significant lifelong learning: A framework for preparing future-ready graduates in the age of uncertainty

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Abstract

Student learning has predominantly been debated based on the cognitive knowledge and skills acquired. More recently, scholars have examined the concept of a deeper, more holistic learning, i.e., significant learning where learning stimulates further learning to, subsequently, create lifelong learners. This conceptual paper aims to examine how significant learning has been discussed in the past to create a framework for the future-ready graduate which educational developers can use to reimagine student learning outcomes aligned to critical interactions of the learning experience. The proposed framework is referred to as Significant Lifelong Learning and can be applied to traditional or any variation of online learning environments.

1   Introduction

Lifelong learning, first introduced by Edgar Faure in the UNESCO report *Learning to be* (Kirby, Knapper, Lamon, & Egnatoff, 2010), is often described from two broad perspectives – the educational perspective, as a goal to instill in learners in higher education, and the professional perspective, as a necessary characteristic of workplace learning.

These two contexts illustrate a shift from a performance orientation to a goal orientation, combining the cognitive domain of learning with the more affective areas of learning, including the human dimension, caring, and learning how to learn.

Fink's (2003) taxonomy of significant learning combined these three affective areas of learning with fundamental knowledge, application, and integration to present a more holistic view of student learning described through learning goals. The five attributes of lifelong learners – an inquiring mind, helicopter vision, a sense of personal efficacy, information literacy, and a repertoire of learning skills (Candy, Crebert, & O'Leary, 1994) – are typically described through this affective lens. These attributes are not easily taught; therefore, much of the previous research in this area focuses on the presence and measurement of attributes through scales designed to assess lifelong learning attributes, including the Characteristics of Lifelong

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Learning in the Professions (Livneh, 1988), the Oddi Continued Learning Inventory (Oddi, Ellis, & Roberson, 1990), and the Effective Lifelong Learning Inventory (Crick, Broadfoot, & Claxton, 2004).

This paper aims to address the following question: *How can we create significant learning experiences through interactions built to encourage authentic lifelong learning for future-ready graduates?*

2   Literature review

2.1   Learning taxonomies and course design

Traditional learning taxonomies, including Bloom and Anderson and Krathwohl (2002), can be useful in course design as the levels of progression determine what students should be able to do in terms of specific, observable behaviors. In a study conducted by Stanny (2016) that consisted of document analysis of 30 web resources using Bloom's categories and verbs, no verb was consistently assigned for all 30 lists.

Out of 788 verbs, 433 were unique, and 236 verbs appeared in only one category; the analysis shows that authors vary in their interpretation of the verbs. Words can hold different or several meanings in different contexts, illustrating the need for a more comprehensive taxonomy for student learning.

The Taxonomy of Significant Learning (Fink, 2002) presents an interactive framework that illustrates that all learning relates to other types of learning. The focus is on the relationships between outcomes, activities, and assessments and on the idea that learning in any area could enhance learning in another area. The six dimensions of Fink's Taxonomy are foundational knowledge, application, integration, the human dimension, caring, and learning how to learn. While the first three dimensions align with Bloom's cognitive domain, the second three are more closely aligned with affective learning outcomes. This idea that learning is multi-directional closely relates to the goals and attributes of lifelong learning.

2.2   Lifelong learning

Considered a goal of education and necessary for the workplace (Kirby et al., 2010), lifelong learning, or "life-wide" learning, is one's capacity to respond to changing circumstances, to learn throughout a career, and to integrate theory and practice to respond to previously unmet situations (Bligh, 1982). This concept emerged from Faure's work in the 1972 UNESCO report "Learning to be", which called for a reform of existing education systems to consider all areas of learning, both formal and informal, as a learning society. The aim was to shift the focus from an individualistic, humanist view towards a more economic view centered on employability and the workforce (Boshier, 2005; Merriam et al., 2006). Later works, including the 1996 OECD Report "Learning for All" and the 2000 report on the Commission of European Communities, reinforced these initial ideas.

Candy et al. (1994) introduced five attributes of lifelong learners that promote their ability to engage in learning. The first attribute – an *inquiring mind* – is linked to the depth of learning and the ability to engage in deep learning instead of surface learning. The second attribute – *helicopter vision* – is an individual's epistemological beliefs or an awareness of how knowledge is created and its potential limitations. The third attribute is a sense of *personal efficacy*, or confidence in his or her ability to learn in relation to personal goals and academic performance. The fourth attribute is *information literacy,* or how we access and make meaning of information. Finally, the fifth attribute is *learning how to learn,* or the awareness and utilization of common skills and strategies for learning.

The openness to experience, as demonstrated through motivation, engagement, and persistence and the ability to deal with change, are also characteristics used to describe lifelong learners. The acquisition and development of these attributes permit learners to set goals, apply appropriate knowledge and skills, engage in self-direction and self-evaluation, locate required information, and adapt their learning strategies to different conditions (Candy et al., 1994).

As these attributes are not easily taught, much of the work done in this area focuses on the presence and measurement of attributes through scales designed to assess lifelong learning attributes, including the Characteristics of Lifelong Learning in the Professions (Livneh, 1988), the Oddi Continued Learning Inventory (Oddi, Ellis, & Roberson, 1990), and the Effective Lifelong Learning Inventory (Crick, Broadfoot, & Claxton, 2004).

2.3   Learning interactions

Educational experiences are composed of various interactions: learner interactions with course content, learner interactions with the instructor, and learner interactions with other learners (Moore, 1989; Nilson & Goodson, 2017). The learners' additional interaction with technology emerged with the uptake of distance learning initiatives (Moore & Kearsley, 2005), and, more recently, with emergency remote learning during the COVID-19 pandemic. These interactions are significant to learning because they lead to improvements in student learning, along with a sense of community, increased student engagement and satisfaction, and increased persistence and retention (Nilson & Goodson, 2017).

These learning interactions have been analyzed with regard to student satisfaction with courses, particularly online courses. According to the findings of previous literature, the learner-faculty relationship is the most significant, followed by the learner-content relationship. Learner-technology interaction is affected by the differing efficacy of, comfortability with, and access to technology. The least significant factor was the learner-learner relationship (Strachota, 2003).

3   A proposed framework for Significant Lifelong Learning

The key concepts in Section 2 have been elaborated upon in the figures below. Each figure contains additional information to illustrate the concepts more effectively. Our proposition for a new framework for Significant Lifelong Learning (SLL) is presented in a visual format in Figure 5.

4   Discussion

As we can see in Figures 1, 2, and 3, the importance of SLL is dependent on the types of learning interactions in an educational experience, lifelong learning attributes, and the dimensions of Fink's significant learning taxonomy. Specifically, these different interactions encourage a holistic approach involving learning with content, learning with others (other learners and the instructor), and learning with technology. The latter is particularly appropriate in the landscape of blended learning, which many higher education institutions have already implemented as part of an institutional strategy, or more recently as a response to the global pandemic. The lifelong learning attributes in Figure 2 illustrate the areas in which students should have attained or progressed within their higher education experience to prepare themselves for continued learning in the real world after graduation. Figure 4 represents the dimensions of Fink's Taxonomy of Significant Learning, which focus on the relationships between the cognitive and affective domains of learning. In Figure 4, we add the innermost framework, which focuses on faculty, content, and the environment targeted explicitly at learners in blended contexts, as this represents the current reality in higher education. Finally, in Figure 5, we combine all four frameworks into a multi-level SLL circle. We propose that these frameworks, brought together, interact with one another to provide a more comprehensive web

of interactions, dimensions, and attributes that ultimately lead to a framework for significant lifelong learning.
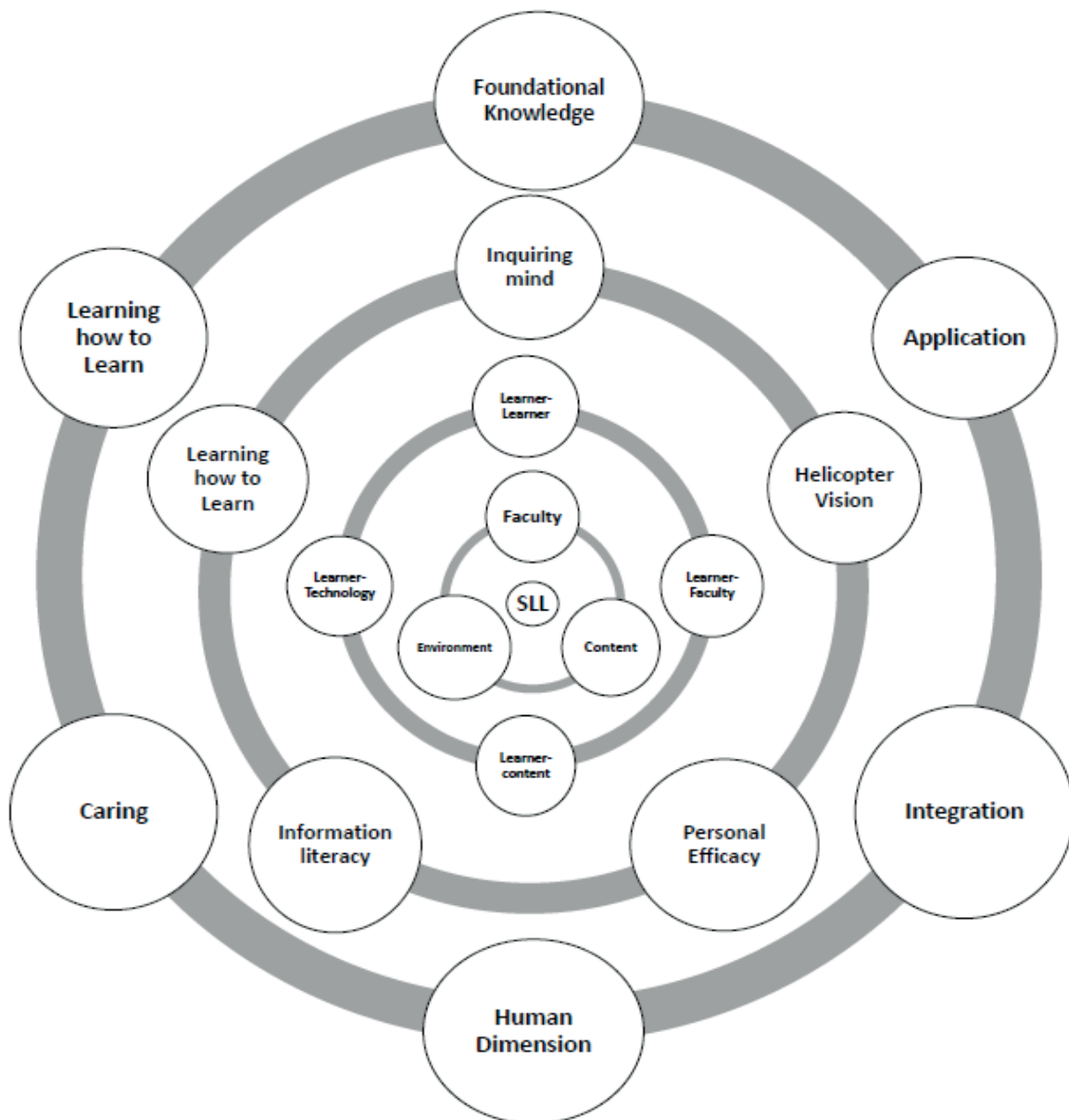

Figures 1-4

Figure 5: Significant Lifelong Learning framework

5   Implications for future research

The purpose of this conceptual paper was to identify the key elements that encourage significant lifelong learning. Grounded heavily in the previous literature, we attempted to create a framework for the future-ready graduate which educational developers can use to reimagine student learning outcomes aligned to critical interactions of the learning experience. A thorough analysis of the relationships within the framework was beyond this paper's scope, but will be provided in a forthcoming in-depth research paper. The next step is to test this framework in the academic field through surveys and interviews to analyze both student and faculty satisfaction with the learning experience as a whole in all learning contexts, ranging from traditional face-to-face environments to blended or fully online environments.

References

Bligh, D. (1982). *Professionalism and Flexibility in Learning. SRHE Monograph 49*. Society for Research into Higher Education, University of Surrey, Guildford, Surrey GU2 5XH, England.

Boettcher, J. V., & Conrad, R.-M. (2016). *The online teaching survival guide* (2nd ed.). San Francisco, CA: Jossey-Bass.

Candy, P. C., Crebert, R. G., & O'Leary, J. (1994). *Developing lifelong learners through undergraduate education*. Australian Government Public Service.

Fink, L. D. (2003). A self-directed guide to designing courses for significant learning. *University of Oklahoma*, *27*(11).

Kirby, J. R., Knapper, C., Lamon, P., & Egnatoff, W. J. (2010). Development of a scale to measure lifelong learning. *International Journal of Lifelong Education*, *29*(3), 291-302.

Merriam, S. B., Caffarella, R. S., & Baumgartner, L. M. (2006). *Learning in adulthood: A comprehensive guide*. San Francisco, CA: John Wiley & Sons.

Moore, M. G. (1989). Three types of interaction. *American Journal of Distance Education*, *3*(2), 1-7.

Moore, M. G., & Kearsley, G. (2005). *Distance education: A system view*. Belmont, CA: Thomson-Wadsworth.

Nilson, L. B., & Goodson, L. A. (2017*). Online teaching at its best: Merging instructional design with teaching and learning research*. San Francisco, CA: John Wiley & Sons.

Stanny, C. (2016). Reevaluating Bloom's Taxonomy: What measurable verbs can and cannot say about student learning. *Education Sciences*, *6*(4), 37.

Strachota, E. (2003). Student satisfaction in online courses: An analysis of the impact of learner-content, learner-instructor, learner-learner, and learner-technology interaction. *Doctoral dissertation*, University of Wisconsin-Milwaukee. Ann Arbor MI, UMI publication.