International Journal for Business Education

Volume 164
Number 1 *Special Edition--CESA Discussion Papers 2019 - 2021*

Article 5

2-21-2023

# Lumina Review of Learning Frameworks: Tools for Building a Better Educational Experience

Tony Shannon



## Recommended Citation

Shannon, Tony (2023) "Lumina Review of Learning Frameworks: Tools for Building a Better Educational Experience," *International Journal for Business Education*: Vol. 164: No. 1, Article 5.
DOI: https://doi.org/10.30707/IJBE164.1.1690386168.722095
Available at: https://ir.library.illinoisstate.edu/ijbe/vol164/iss1/5

COMMERCIAL EDUCATION SOCIETY OF AUSTRALIA
PERIODIC DISCUSSION PAPER No.8*

August 2019

# LUMINA REVIEW OF LEARNING FRAMEWORKS:

# TOOLS FOR BUILDING A BETTER EDUCATIONAL EXPERIENCE

**SUMMARY BY**

**Emeritus Professor Tony Shannon *AM***
Dean, CESA

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## Introduction

A reason for summarising this document (Travers *et al*, 2019) is that the Lumina Foundation in the USA is one of the few educational think-tanks which seems to be aware of the effects on the workplace from the exponentially accelerating growth in soft-computing, especially artificial intelligence, which will be seen in the next fifteen years (*cf*. Jankowski and Marshall. 2017). Learning frameworks are tools that enable re-positioning post-secondary education by that specifying learning outcomes and/or competencies that

- define,
- classify, and
- recognize

educational, learner, and industry expectations of knowledge, skills, and abilities at increasing levels of complexity and difficulty. They are not standards, and they are not limited to academia, but they do allow for alignment of learning outcomes with assessment, as well as the translation, and mapping of learning through various spaces in order to capture learning credentials that can be valued and recognized by education, industry, and the professions.

This paper outlines the roles that learning frameworks play in the emerging ecosystem of connected learning—why they matter and how they can bring disparate pieces of the learning ecosystem together for greater portability and documentation of learning in all the places it unfolds. It concludes with a focus on technological innovations as a source of future directions for learning frameworks connectivity. It is a case of not only accepting the growing need of post-secondary education for employment in the USA [27% in 1973 (actual); 65% in 2020

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(estimated)] but also the changing nature of work even in traditional professions! (Lumina Foundation, 2015).

Some of the terminology has been adapted for Australian circumstances, and, like any synopsis, it inevitably omits many of the references and much of the background to the discussion in the original document.

**Learning Frameworks**

Although centuries old in practice and developed in numerous countries (Gaston, 2010), the use of learning frameworks to connect and document various strands of learning has proliferated over the past few decades (Jankowski & Marshall, 2017). These frameworks can support quality assurance mechanisms for reviewing aligned curriculum and training, provide guideposts for awarding credentials, and serve as end points from which learning experiences can be backward-designed. In addition, learning frameworks enable consistency; provide a common language within their user group(s); and assist in transferability within and across education providers, alternative learning pathways, military learning, and industries (including employer-developed industry expectations and career readiness skills).

Learning frameworks, when used properly, can distribute benefits among learners, communities, and employers by enhancing transparency around credentialing. Through leveraging existing and emerging frameworks, integrating robust, authentic and valid assessment, individualized learning plans may help students complete credentials effectively and efficiently. Leveraging an open and transparent set of frameworks, assessments and learning opportunities supports learning regardless of where it occurs and enables the development of a common currency built on learning.

The five chapters in the paper are

- Why Do Frameworks matter?
- Not All Frameworks Are Alike
- Challenges and Opportunities
- What Types of Frameworks Are There?
- Future Directions: Technology and Learning Frameworks.

Frameworks are not all alike; there are different purposes and assumptions behind their development and use. Frameworks can be organized based on:

- Source: who designed the framework (such as education, industry, or community efforts).
- Purpose: the role of the framework (such as why the framework was developed and the issues it addresses).
- Targeted learning or competencies addressed: the framework could address, for example, prior learning, new or emergent learning, and culminating or convergent learning.

- Intention: the role the framework fulfils within a specific setting (such as articulating learning or competencies; assessing learning or competencies; standards for a field; designing curriculum, or connecting competencies, curriculum, and credentials).

The Table below is an edited and modified extract from Table 1 of the paper (with some rows and one column omitted). It delineates some examples of current frameworks using these classifications to sort them. Assessing a framework in terms of its source, purpose, targeted learning, and intention enable one to be assured that the framework is being used appropriately. One critique of frameworks is that they claim to do more than what has been verified. In many cases, this has more to do with ways in which the framework has been applied than how the framework was designed and intended. Care must be taken to not overreach a framework's purpose.

| Framework Name | Targeted Learning | Intention | Purpose |
|---|---|---|---|
| Learning Outcomes | New, emergent learning | • Articulated learning<br>• Assessing learning | Defining essential, broad outcomes applied across degree programs |
| Degree Qualifications Framework | New, emergent & culminating convergent learning | • Articulating learning<br>• Standards for learning<br>• Designing curriculum | Expected learning outcomes of associate, bachelor & master degree programs |
| Global Qualifications Framework | Prior learning | • Articulating learning<br>• Assessing learning | Defining higher education learning to award credit for prior knowledge |
| 21st Century Skills Framework | New, emergent learning | • Articulating learning<br>• Assessing learning<br>• Designing curriculum | Defining developing skills & knowledge students will need to succeed in work, life, & citizenship |
| Employability skills | New, emergent & culminating convergent learning | • Designing curriculum<br>• Connecting competencies, curriculum and credentials | Developing general skills necessary for success in the labour market at all employment levels and in all sectors |

**Concluding Comments**

However, in order to realize the potential of translation and portability afforded by learning frameworks, technology solutions are needed. The T3 Innovation Network is an "open innovation network that is working to promote and build an open, shared, and distributed public-private data and technology infrastructure for the talent marketplace" (USCCF, 2018a, p.1). The T3 Innovation Network is composed of employers; education, training, and credentialing providers; technical standards organizations; technology vendors government agencies, and others.

Artificial intelligence (AI) can be used to "interpret, align, and translate the unstructured or semi-structured data that exist to be machine readable. AI can also help with the cross-framework comparisons and mapping, built upon a "strength of fit" approach to cross-framework competency translations and comparisons (USCCF, 2018b). The competency data standard put forward by the Competency Classification Index (Uranis *et al*, 2018) can help develop this technology area.

For articulating learning across various educational providers and learning spaces, a taxonomy and competency data standard would help enable interoperability across framework providers. Such an approach supports a reimagined credentialing ecosystem that is easily understandable, interconnected, and allows for comparisons (Lumina Foundation, 2015).

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