Online global collaboration and new pedagogical practices in K-12

By Dr Julie Lindsay

Snapshot

This article is an extension to the previous Synergy contribution in May 2019, 'Building capacity for global connections and collaborations: New perspectives' regarding online global collaborative learning design and implementation. It reviews recent research around online connected learning modes and online global collaborative learning with a focus on identifying barriers and enablers as well as pedagogical approaches.

The practice of online global collaboration in the K-12 classroom is emerging as a catalyst for multi-modal literacy, global competency and intercultural understanding. Implementation within a school context reveals barriers and enablers relevant across all systems as educators struggle to identify pedagogical priorities for digital learning that is online and connects learners beyond the immediate classroom. This article is an extension to the previous Synergy contribution in May 2019, '**Building capacity for global connections and collaborations: New perspectives**' regarding online global collaborative learning design and implementation. It reviews recent research around online connected learning modes and online global collaborative learning with a focus on identifying barriers and enablers as well as pedagogical approaches. Adoption of the Global Collaborator Mindset is reiterated as conducive to connecting and collaborating beyond the immediate physical classroom. Emerging pedagogical practices of online globally collaborative educators is shared through the Online Global Collaborative Learning (OGCL) Construct along with a discussion around implications for K-12 education.

Introduction

The scope of online learning in K-12 education is developing and changing as more effective digital tools in conjunction with new pedagogies emerge. The ability to learn online is enabled by faster internet speeds and better access to online spaces as well as new ways of working that allow participants to connect and collaborate virtually in order to build knowledge together. Connected learning makes use of new technology tools to build online networks and develop personal learning resources through interaction with personal learning networks and professional learning communities (Siemens, 2005). Connectivism is a term describing practice based on the idea that knowledge is distributed across networks of connections and that learning consists of the ability to construct and traverse those networks (Downes, 2008). The 'ecology' of connected learning and connectivism relates to diverse, multifaceted learning spaces where specific tasks are aligned with the unique nature of different learning approaches (Siemens, 2006).

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In the collaborative learning process, as distinct from cooperative learning where the required tasks are distributed amongst the learners (Laurillard, 2009), the affordances of online technologies allow learners to share, discuss and build on the outputs of their peers or collaborative partners. The social nature of learning and online collaboration may lead to the development of a 'Community of Practice' or CoP, a group of networked learners who share a craft and/or a profession (Wenger, 2000) and experiences are shaped by the many as opposed to the individual teacher (Wenger, White & Smith, 2009). Lock and Johnson (2017) consider knowledge building is continuous when collaboration is implemented as a way of learning. Harasim (2012) suggested that online collaborative learning (OCL) applications afford an emphasis on knowledge work, knowledge creation and knowledge community.

What is online global collaboration?

In practical terms, Lindsay (2016) defines online global collaboration in the K-12 classroom to mean learners who are geographically dispersed who use online technologies to forge viable connection and communication leading to collaboration and co-creation of new understandings. This means learning in a global context is 'with' not just 'about'. According to Garrison and Cleveland-Innes (2005), key factors are the use of online technologies and design features of the collaboration, as well as changes made in teaching and learning structures for all collaborative partners involved. Lock (2015) discusses the global classroom and focuses on the importance of learning design scaffolded by online technologies to support authentic collaboration.

Why is online global collaboration important?

Online global collaboration is important to prepare all learners to be globally competent, where global competence is defined as the "cross-cultural skills and understanding needed to communicate outside one's environment and to act on issues of local and global significance" (Lindsay, 2016, p. 242). Connecting beyond the classroom "supports global citizenship and competency because it allows students to frame an understanding of the world through connected experiences beyond the typical textbook and limitations of face-to-face interactions" (Lindsay, 2016, p. 22). Paterson (in Lindsay, 2016) advises that developing "global competence is not about adding a new unit to the curriculum but about seeing teaching practice through a new lens" (p. 199).

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Online global collaboration provides opportunities for students to actively engage with digital technologies while connecting with others. The ability to connect beyond the classroom builds skills around the use of new or emerging tools for online and ubiquitous computing. As students engage in online collaborations, they gain an understanding of the power of technology to benefit humanity. Veletsianos (2016) posits that by employing emerging technologies to support learning, new ways of viewing the world have become apparent as are new "ways of exploring

knowledge, scholarship, collaboration, and even education itself" (p. 11).

Online global collaboration in K-12 learning

The practice of implementing global education, global projects and online global collaboration into the K-12 learning environment spans nearly three decades. One example is Learning Circles (Riel, 1993) which are communities of practice based on the development of computer-mediated communication where students and teachers work cooperatively around the world. The Learning Circle model (Riel, 1994) for online global collaborative learning emphasises creating empathy between partners, planned outcomes, facilitation of information exchanges, and collaborative knowledge building through a circle 'publication' that could be a website, a book or some other artefact. When researching telecollaborative projects through the International Education and Resource Network (iEARN, **http://iearn.org**) Oran (2011) showed that educators framed a conceptualization of global education around their own experiences and values and around students' needs and experiences. Although educators lacked formal preparation for global learning they integrated global education into their classrooms because of their personal commitment to it, and in spite of a lack of formal curriculum. The study by Leppisaari and Lee (2012) of elementary level students connecting between two countries showed how the use of technology for collaboration can be strengthened in meaningful ways and identified pedagogic models based more on what did not work. They observed that challenges to online global collaboration included varying conditions that exist in

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respective schools, systems and countries; cultural differences impacting communication styles; interruptions in the timeline affecting completion of agreed outcomes and the attitudes and habits individual educators have that can make collaboration a success or not. When social studies classrooms were joined globally Lock (2017) found "The affordance of digital technology opens a new learning landscape that offers new possibilities for how we engage students in authentic learning experiences" (p. 26).

The Australian Curriculum includes general capabilities which are knowledge, skills, behaviours and dispositions that students are expected to develop during their schooling. One of the capabilities is to "develop intercultural understanding as they learn to value their own cultures, languages and beliefs, and those of others" (**Australian curriculum**,). This is part of an international focus on K-12 curriculum outcomes requiring a commitment to the concepts of global learning, collaborative learning and learning with and through ICTs. For example, in the USA the **ISTE standards (2016)** for students include 'Global collaboration' as one of the key elements, where "Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally."

Enablers and barriers to online global collaboration

Before we explore pedagogical approaches to online global collaboration the following is a brief review of barriers and enablers to this practice within K-12 schools.

Barriers to online global collaboration

Communication issues are a common inhibiting theme in the research. This includes schools not responding, language barriers, and lack of understanding how to communicate with others at a distance because educators have not done this before or were inexperienced in a global context. Being able to communicate online is a skill educators can learn and model so that global project goals are clearly communicated and understood to ensure student success. Snyder (2016) found global learning was impacted by teachers not responding in a timely manner, issues with time zone differences and effective communication, or even miscommunication. Often technology infrastructure and access is inadequate within the school including a lack of bandwidth, closed learning systems like Office 365, closed networks, inconsistent and unreliable technology and policies that prevent technology tools from being used. Hew and Brush (2007) found resources (as in hardware, access, time and technology support) the most commonly reported technology integration barrier. In contrast, Ertmer and Ottenbreit-Leftwich (2013) found "Teachers with strong beliefs in the pedagogical value of technology have been observed to overcome these barriers" (p. 177). Snyder (2016) found access to technology and online sites through the Internet, website blocking and filtering, limited bandwidth and technology failures and device allocation caused some schools to exit global collaborative projects.

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A lack of time on the part of the educator to consider how to apply and implement, and/or sustain online global collaboration is another key barrier. An and Reigeluth (2011) shared research showing that 57% of educators surveyed perceived lack of technology and lack of time as the top barriers to technology integration. Arteaga (2012) identified how time consuming and exhausting online communication and collaboration was amongst outlier educators, especially working across time zones. Oran (2011) had a similar view and revealed insufficient time to teach for global learning. Other barriers include lack of autonomy in the classroom, isolation as an educator and being the only one implementing online global collaboration. Ertmer and Ottenbreit-Leftwich (2010) also found that the context in which teachers work often constrains individual efforts and promotes a reluctance to adopt innovation. Often within a school a lack of priority for global collaboration is an issue. The overcrowded curriculum, being stymied by the evaluation and accreditation process means there is little room for global collaboration. Interestingly, Oran (2011) found that although the curricula may not include global learning educators used it as an

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alternative to meet standards and skills required.

Oran (2011) and Arteaga (2012) revealed that global collaborative educators were determined to overcome barriers and found ways to connect and collaborate. Arteaga (2012) reinforced that "barriers did not deter them from continued professional social networking. Instead outlier teachers discovered, effected, shared and reflected practical solutions" (p. 143), and "Outlier teachers exercise a philosophy that is based on collaborative sharing of ideas and resources and getting beyond barriers" (p. 148).

Enablers to online global collaboration

Key enablers supporting online global collaborative activities in the classroom include establishing effective communication between educators for mutual understanding of the global collaboration project structure including objectives and timeline. Lock and Redmond (2009) revealed that time is required for

> various stakeholders to meet, develop shared philosophies, discuss viewpoints about ICT integration, clarify expectations and tasks, and develop a climate of trust to ask questions and negotiate decisions around the work (p. 244).

Snyder (2016) shared that appropriate planning and communication supported collaborative activity, while Stornaiuolo (2016) discussed cosmopolitan activity and how important it was for educators to be able to manage challenging conversations through technology enhanced communications.

...appropriate planning and communication supported collaborative activity...

A major enabler is support from stakeholders such as administrators (Oran, 2011), parents and other community members. Enlightened support means encouraging educator risk-taking and allowing or accepting failure sometimes. A crucial condition for change is the active involvement of leadership (Kim, Kim, Lee, Spector & DeMeester, 2013). Further, Snyder (2016) found, "Both teachers' and administrators' buy-in was important to integrating digital citizenship, social media, and global collaboration into the middle school curriculum. Policies should reflect buy-in as should teachers and their willingness to learn about new technologies, such as social media tools, to support students taking on the roles associated with digital citizenship" (p. 269).

The open use of Web 2.0 tools for collaboration is an enabler. As Greenhow, Robelia and Hughes (2009) stated, "Web 2.0 technologies enable hybrid learning spaces that travel across physical and cyber spaces according to principles of collaboration and participation" (p. 247). A small and trusting global network (often called a Personal Learning Network (PLN)), helps to engage with those already doing

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global collaboration. Educators overcome barriers through leveraging peers (Snyder, 2016), both internal (within the same school) while external (beyond school boundaries) networking is recommended in order to facilitate collaboration (Kim et al., 2013). An and Reigeluth (2011) found "Appropriate communities of practice or social networks have the potential to provide ongoing support outside formal training" (p. 61).

Educator experience and beliefs and the ability to move into more advanced pedagogies and participate in different activities are enablers. Tondeur, van Braak, Ertmer and Ottenbreit-Leftwich (2017) found that teachers' experiences with technology was an enabler for supporting pedagogical belief change, while belief in the value of collaborative learning leads to more group work (Kim et al., 2013). Enabling also is educator 'personality' or 'mindset' being conducive to online collaboration through taking a personal interest in connecting and collaborating. Research on outlier educators by Arteaga (2012) found,

> It was evident that all teachers persevered, acted as creative catalysts for finding solutions to barriers, and held high expectations of self to surpass any barriers and enhance the quality of their teaching through collaboration (p. 156).

The global collaborator mindset

A conceptually new way of thinking about approaches to online global collaboration and how educators become global collaborators has emerged. In conjunction with new pedagogical approaches, pertinent characteristics of educator readiness, capacity for and disposition towards online global collaboration has been identified through adoption of a common mindset towards teaching and learning called the Global Collaborator Mindset (GCM) (Lindsay, 2019). The GCM is an iterative process, empowers educators in becoming skilled online global collaborators. Typically, a mindset, referring to a person's mental outlook or set of attitudes, and also referring to a belief or disposition, is the enabler or the barrier to new ideas and practices. The GCM enables participation in online global collaborative activities and potentially further influences pedagogical approaches.

The proposition here is that educators do not naturally have a GCM and very few educators have shifted or changed their mindset, since the advent of online digital learning, to include online learning and global collaboration. It is also proposed the GCM can be identified, labelled, and then cultivated and learned. It is only through a personal belief system and personal mindset that the motivation leading to the practice of global collaboration exists. This motivation to practice mindset aligns with the work of Ertmer (1999) and intrinsic second order barriers resulting in

Attributes of the Global Collaborator Mindset are connection, openness, autonomy and innovation...

resistance to change through less tangible challenging of personal belief systems, however this is now extended into the online global collaborative realm. Therefore, the goal of the GCM is to motivate educators to open their minds to new possibilities in order to introduce new ways of thinking, believing

and doing, hence applying and extending the work of Duffy (2009) in relation to affecting a paradigm shift in education, with the initial target the mindsets of educators.

Attributes of the Global Collaborator Mindset are connection, openness, autonomy and innovation and these represent a foundational structure instrumental to online global collaboration (Figure 1).
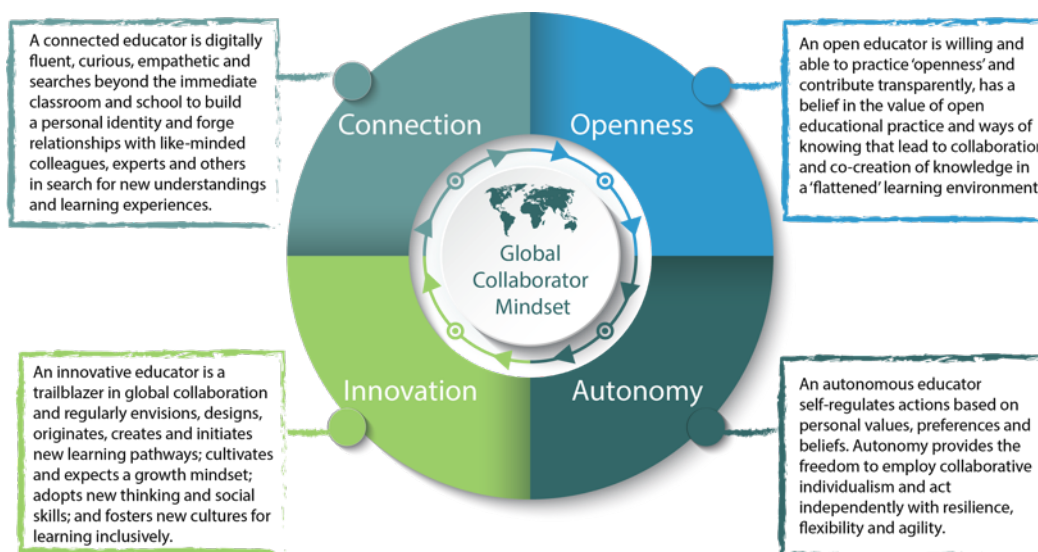

A connected educator is digitally fluent, curious, empathetic and searches beyond the immediate classroom and school to build a personal identity and forge relationships with like-minded colleagues, experts and others in search for new understandings and learning experiences.

An open educator is willing and able to practice 'openness' and contribute transparently, has a belief in the value of open educational practice and ways of knowing that lead to collaboration and co-creation of knowledge in a 'flattened' learning environment.

An innovative educator is a trailblazer in global collaboration and regularly envisions, designs, originates, creates and initiates new learning pathways; cultivates and expects a growth mindset; adopts new thinking and social skills; and fosters new cultures for learning inclusively.

An autonomous educator self-regulates actions based on personal values, preferences and beliefs. Autonomy provides the freedom to employ collaborative individualism and act independently with resilience, flexibility and agility.

Connection · Openness · Innovation · Autonomy · Global Collaborator Mindset

Figure 1: Attributes of the Global Collaborator Mindset

Emerging pedagogical practices for online global collaboration

According to Lock (2015) a pedagogical shift is needed to move from a transmission-style approach to teaching to ongoing sustained conversations and collaborations for meaningful learning to occur within a global classroom environment. The impact or influence of global collaborative skills leads to consolidation of new pedagogical practices that include learning while connected beyond the classroom, collaborative and open learning modes and community interaction. Implementing online global collaborative learning through both synchronous and asynchronous learning modes, including online global projects, provides the bridge to new pedagogical approaches. This 'bridge' includes real-world learning that is beyond the textbook, flexible and autonomous learning, leveraging an authentic audience, utilising new approaches to global digital citizenship, and a focus on the process as well as the outcomes of global learning.

Pedagogical applications of the Global Collaborator Mindset (GCM) lead to the development of the Online Global Collaborative Learning (OGCL) Construct (Lindsay, 2019). When implementing online global collaboration with this pedagogical approach the concept and practice of 'flat' learning is adopted whereby an 'unflat,' (non-networked, hierarchical) non-collaborative learning environment is disconnected and isolated. As a pedagogical approach, the practice of Online Global Collaborative Learning (OGCL) refers to a set of skills, behaviours, beliefs and technologies supporting interactions and collaborations that are online and global in context. OGCL is based on non-hierarchical, independent as well as scaffolded connection, interaction and collaboration with peers, experts and other community members as part of the learning process and applies

to collaborations within and beyond institutions, hence the need for reiterative language and use of the word 'global'.

The construct, as shown in Figure 2, provides a workable overview of learning objectives for online, global and collaborative learning. Collaborative learning (CL) applies to classroom or school based, localised non-networked activities. Global learning (GL) applies to individuals, classes and schools learning about the world from artefacts such as books, videos, letters, artefacts, where learning is non-networked and learners do not 'meet up' in any way. When collaborative and global learning initially combine to form Global Collaborative Learning (GCL), connections and collaborations take place between geographically dispersed schools and systems, but in this iteration they are devoid of essential networking technologies. Although hard to realise in today's internet-based learning environment, this is likely the true origin of global collaboration: leveraged by real-time visits to new locations, books, and shared standalone artefacts further facilitated by worldwide postal services. This practice exists today where many schools develop sister-school or other relationships and associated practices of 'visiting' the partner country as a field trip, communication through class or student-written 'penpal' letters, and artefact exchange via 'snail-mail'.

The intent is to learn about the world through real-world interactions, made possible by online networking.

The advent of the internet catalysed online learning modes (OL) which, when combined with collaborative learning (CL) produces online collaborative learning (OCL) which is localised and within the one classroom, or perhaps within the one school, school system or even university. This particularly applies to an institution whereby online collaboration is predominantly possible through internal digital technology platforms and structures. OCL can also refer to the use of supportive tools, external to the LMS, such as a blog, wiki, other Web 2.0 applications such as Padlet or FlipGrid, in conjunction with a pedagogical approach where a class of learners collaborate online with each other as a relatively closed community. When online learning (OL) is joined with global learning (GL) it provides the opportunity for online global learning (OGL). This applies to internet-based activities such as exploring the world through online resources, reaching out to external experts and organisations for relevant and updated information, following real world developments vicariously such as a polar bear expedition, or to solve problems. The intent is to learn about the world through real-world interactions, made possible by online networking.

Finally, when online collaborative learning (OCL), online global learning (OGL) and global collaborative learning (GCL) are joined or merged this results in Online Global Collaborative Learning (OGCL), as shown by the centre of the diagram. This mode of learning is online, collaborative with others beyond the immediate classroom (real or virtual), and characterised by ubiquitous, autonomous and open approaches. Connecting with the world for meaningful learning is not location based

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and provides freedom to collaborate and co-create with the contention that whom you learn with and what you construct together is most important. The practice of OGCL ostensibly takes learning beyond the immediate resources such as textbooks and educator knowledge to use the affordances of digital networks for occasional or ongoing online and global collaborative learning experiences.

In OGCL the educator has equal responsibility along with the student (where applicable, and scaffolded according to age) to forge online collaborative learning relationships and to self-direct, personalise and determine the learning. The OGCL construct is pertinent to K-12 global collaboration and applicable to similar collaborations between students, educators and classes at the higher education level, utilising the technology for cognitive learning through application of different pedagogical objectives (Ertmer & Ottenbreit-Leftwich, 2013; Jonassen, Carr & Yueh, 1998).
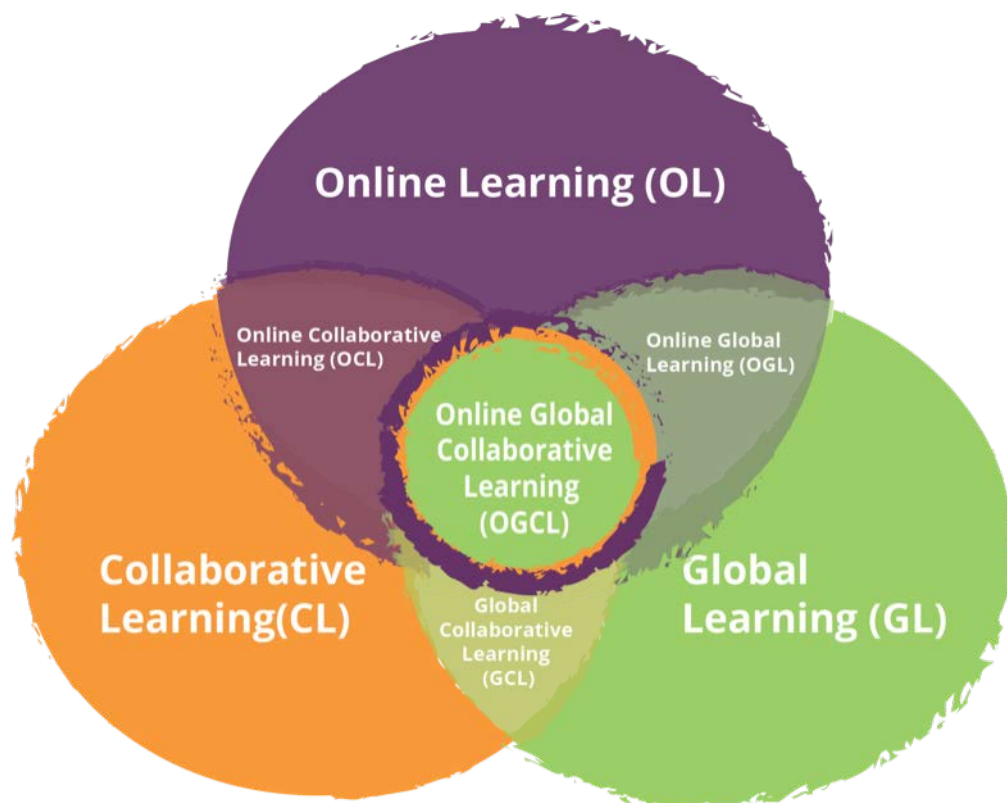

Figure 2: The Online Global Collaborative Learning (OGCL) Construct

Implications for K-12 education

Changes in teaching and learning beyond the classroom are supported by pedagogies that challenge isolation, and online global collaboration is vital to creating a new paradigm for modern learning. Learners must be able to go beyond the textbook in order to connect, not just with current content, but also with people - peers, experts, and online communities - whose collective voice helps students build a deeper understanding of the world.

The Global Collaborator Mindset announces a collection of attributes that has application for study, practice and adaptation to the needs of the school system and location. The Online Global Collaborative Learning Construct, although broad in context, can be segmented and adopted as a whole-school approach to online learning and global collaborative pedagogy and curriculum.

The associated pedagogical approach has significant implications for K-12 education in that providing support and access for all educators will require a planned approach with consideration as to technology infrastructure, curriculum flexibility, assessment requirements, networked and connected learning and online learning capability.

> **the OGCL Construct could be a tool for new pedagogical approaches in the classroom for understanding and enabling classroom learning...**

Consider your unique K-12 learning environment and how the OGCL Construct could be a tool for new pedagogical approaches in the classroom for understanding and enabling classroom learning modes that are online, collaborative and global. What leadership and planning approaches are needed to implement this? In addition, how can the GCM be implemented as a professional learning objective within the school in order to develop skills, attitudes and behaviours to accommodate connected learning, open learning, autonomy and digital freedom in the classroom? How can you shift the educator role to being a facilitator of global connections, inspiration for global collaborations and model for self-determined learning for students and other educators through new pedagogical approaches?

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