Higher Education for Good

Teaching and Learning Futures

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13. Speculative futures for higher education: weaving perspectives for good

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Much has been written and speculated about the future of teaching and learning, recently brought to the forefront by calls to "reimagine" the future of education and to explore a "new normal" emerging from the COVID-19 pandemic (UN 2020; UNESCO 2021). In our service as co-leaders of the Digital Transformation (DT) working group at Royal Roads University (RRU) Canada, we (Veletsianos and Childs) were asked to advise our institution on the ways we believe it could, and ought to, respond to the challenges and opportunities that this moment offers. In doing so, we grounded our recommendations both in the long-standing and far-reaching literature on online and distance education and educational technology, as well as in the critical possibilities that speculative methods offer (Veletsianos 2020; Veletsianos et. al., 2022). Speculative methods are "research approaches that explore and create possible futures under conditions of complexity and uncertainty" (Ross, 2018, p. 197) to "inform us about what matters now in the field, what issues and problems we have inherited, and what debates define what can or cannot be currently thought about or imagined" (Ross, 2017, p. 220).

Recognising that future systems are grounded in the realities of what we have in front of us, it can be difficult to reimagine new systems from scratch. For example, in the absence of a national department of education and in the context of a provincial funding model in Canada, the credit hour is hard to move away from as it drives the legislated funding formulas for post-secondary institutions (BC Government, n.d.). Needing to expand the ability of the DT working group to explore

possibilities, a speculative narrative of the experience of one learner (Magda) was created to guide our work. Magda's narrative and persona shouldn't be taken as representative of students in general or RRU students in particular: it served as a provocation for the DT working group as we examined what digital transformation could look like at RRU. The narrative was intended to be open-ended, discipline agnostic, and somewhat closely understood by people within the system in order that it would invite them to reflect and think creatively about some of the opportunities and issues for RRU post-pandemic.

The DT working group used the narrative of Magda's speculative future to advance the idea that digital transformation designed to serve student and societal needs requires transformation at multiple systemic levels. Such transformation goes beyond technological and pedagogical changes at the teaching and learning level. While this idea is not new at RRU — indeed RRU has a long history of innovation (Harris et al., 2018; Harris et al., 2021), like every institution of higher education, our institution faces systemic challenges that constrain its possibilities and its ability to do good in the world. By way of an example, some systemic challenges experienced locally during the work of the DT working group, and in the writing of this chapter, include the review of current post-secondary provincial funding allocations (BC Government, n.d.), Indigenous reconciliation and decolonisation of knowledge (Truth and Reconciliation Commission of Canada, 2015), lack of affordable housing (CBC, 2022), and an increasing number of climate emergencies including historic fires, floods and droughts (Little, 2021) which have impacted the overall ability of the British Columbia HE sector and RRU to access adequate resources to enact its mission of "Inspiring people with the courage to transform the world" (Royal Roads University, 2022, para. 1). All under the backdrop of a global pandemic.

Within this complex context, questions of "who" HE is good for and why were tangential, yet implicit questions raised by the working group. Given that RRU has a Learning, Teaching and Research model (LTRM) (Harris et al., 2021), a signature pedagogy that informs all aspects of how the institution operates, the working group implicitly held that a notion of "good" was embodied in RRU's approach to learning, teaching and research as compiled in the LTRM document (RRU, 2019):

> The LTRM can be distilled to three core categories of values, or attributes of practice...applied and authentic, caring and community-based, and transformational. Situated in its wider context, the LTRM expresses how we work at RRU and connects to both what we learn, teach and research (common threads running through our work, such as leadership, social innovation, and sustainability), and most importantly, why we work at RRU, to help to create life changing learning experiences in service of positive social change. (pp. 1–2)

Drawing from the base provided by the LTRM (Harris et al., 2021), and the process of weaving knowledge systems together that is used by some to place Indigenous knowledge systems on par with the Western scientific paradigm (Henri et al., 2021; Johnson et al., 2016; Kimmerer, 2002), we used a metaphor where "good" could be viewed as a weaving, where the warp and weft include practical, pedagogical, contextual, societal, and critical aspects.

In this chapter, we invited colleagues holding multiple roles within the larger Canadian HE system to respond to the speculative narrative of Magda used by the digital technologies working group to further grapple with the question of "goodness" given a specific context and situation, rather than with the question of "goodness" in universal terms. Given this specific future, suspending disbelief for a moment, and imagining that this future is a reality, colleagues were asked to contemplate: Is this a good future? Who is it good for? What are the implications of this future for your role? What tensions and opportunities does such a future entail for your role? The chapter therefore serves as a container for an exchange amongst co-authors to examine perspectives and implications of a change in teaching and learning as captured in the narrative of Magda and reflected on by participants. In doing so, the chapter attempts to cross theory-practice-policy lines to provide a contextualised, systemic examination of a possible iteration of the higher education experience. As the speculative future of Magda was hypothetically set before Fall/Autumn 2023 when it was originally conceived and published (Veletsianos et al., 2022), co-authors were asked to approach it as "near future" as opposed to an exact date. By engaging multiple perspectives, the universality of what it means for futures to be "good" is problematised. This allowed us to highlight the messiness of speculative futures, and make visible the ways in which

roles, values, identities, ideologies, and systems shape how learning futures are perceived to be "good".

The chapter is divided into three sections. The first section presents a summary of Magda's speculative future (readers interested in the original can refer to Veletsianos et al., 2022). The second section consists of co-authors' responses to the full version of the speculative future referenced above. The third section synthesises and summarises these responses.

Section 1: A summary of the story of Magda

In the original narrative we published, we described how Magda became interested in decentralised finance after learning about and exploring cryptocurrencies through a variety of resources such as online experts, a speaker series, and local university community programming. She decided to enrol in a degree at a local university as it would meet her diverse interests about this topic, which focused not just on the business sector but also on including the future of banking, government responses, climate change and the underlying technologies, as well as the political and social ramifications of the technologies underpinning decentralised finance.

To enrol in this degree program, Magda completes an online intake and evaluation form which generates data for an advisor to review before their meeting. Magda and her advisor develop a personalised learning program based on a variety of data, including input from a recommender system. Based on this, Magda is able to earn prior-learning credits for the equivalent of two courses and can begin her BSc in Cryptocurrency Studies program. Meetings with her advisor occur frequently, leading to updates and changes to her personalised learning plan.

At this university, Magda, faculty, and staff are supported by human and non-human resources. For example, Magda has access to a study plan available on her student portal. The student success professional she works with has access to a digital dashboard with relevant data that updates in real-time.

Magda's first course is online and has a mix of synchronous and asynchronous sessions. Courses in the program vary in duration, and

this poses benefits (e.g., flexibility in course design) as well as challenges (e.g., scheduling difficulties often leading to inconsistent workloads). The courses she attends and the experiential learning opportunities she is able to take part in connect her with people in decentralised finance networks that reach across institutions and industries. As long as she is enrolled in her program, information and resources are available in her student portal, which automatically updates her digital learning passport whenever a learning action or outcome occurs.

Section 2: Responses to Magda's story

In this section, co-authors (Donahue, Leary, McLeod, and Scott) respond to the speculative future as captured in the narrative of Magda through their own HE experiences, their current roles and their positionality in that context. Some have approached this by taking up the narrative of Magda and building it forward, informing it as they do with insights from their own role and position to highlight opportunities and tensions. Others used the narrative as a reflective prompt resulting in a sharing of insights, wisdom, and raising questions for consideration.

Current online graduate student perspective: Donahue's response

Are algorithms and data determining Magda's future? Magda appreciates the convenience and flexibility of her local university and is glad her first course connects students to the instructor and each other through synchronous and asynchronous activities designed to foster a sense of community. Magda takes advantage of the opportunities to network with students, alumni, and professionals in the fields related to her areas of study. She is impressed by the information provided in her student portal and regularly logs in to review her progress, achievement, and future study plans. She observes that the university's technologies seem to be designed to tailor her experiences to her interests.

Throughout her first course, Magda develops personal relationships with other students. She is grateful for the networked connections she is making and the people who have become her support system. She is thrilled to discover a work-integrated learning opportunity in a

blockchain start-up through her networks and eagerly dives in. Although Magda is quick to realise her work-integration experience is an effective pathway to gain experience and expertise in blockchain technologies, she begins to wonder if her university is too reliant on digital technologies. She is concerned that her future is being determined by algorithms and analytics, and she harkens back to a conversation between her and her advisor in which they confessed they did not understand the algorithms being utilised by the university's recommender system, but continued to rely on it, nonetheless.

Magda is troubled.

She logs in to her student portal and makes the unsettling discovery that the university's recommender has selected future courses for her that do not reflect the knowledge and competencies she is acquiring in her work-integrated learning which is based in a jurisdiction different from her local university. Instead, the recommender has drawn solely from data collected from profiles of other current students, which are not necessarily reflective of her unique experiences, to make suggestions and determine her future studies. This information and conversations she is having with her university friends in backchannel chats alerts Magda to the sobering realisation that when her work experience ends and she returns to regular studies at her university, she will not be continuing with the people in her circle. With each new course she takes, she will work with an entirely different group of classmates and instructors due to the organisational difficulties of the university's practice of varying course lengths based on course needs rather than a calendar.

It appears to Magda that the university exists in a paradoxical reality. On one hand, instructors and students engage in activities that are designed to create a human-centred sense of community. On the other hand, however, the university is totally reliant on the student dashboard and recommender system technologies. Magda is concerned that her forward-facing academic and professional pathways are being determined by algorithms and data collection. She is troubled by the level of data surveillance occurring and who may have access to the data the university is collecting. While Magda appreciates the opportunities she has been afforded by her university, she wonders about the ethical considerations of the technologies determining her future.

School of education and technology, school director perspective: Leary's response

The story of Magda offers both hope and concern for the future of higher education. There is hope reflected in the targeted online marketing initiatives, online scheduling app, online onboarding evaluation, and readily accessible program advisor outlined in the Magda story. Offering a prospective student easy access to the resources necessary for a seamless application, admission, and enrolment in the BSc in cryptocurrency studies is an effective and strategic enrolment initiative. Offering prior-learning assessment credits, a detailed and personalised program plan, access to an up-to-date student record, and credentialing alternatives reflect the university's student-centred approach to learning which offers much hope for future higher education processes and supports. Likewise, there is hope for prioritising the student experience with the intentional institutional pedagogy to develop community, connection, and support for the students. The university efforts to ensure Magda's studies align with and lead to career opportunities offer hope in addressing student and community expectations of a positive return on the ever-increasing tuition investment.

Less hopeful for the future of higher education is the robotic and transactional feel to Magda's university experience. The ever increasingly diverse student population across campuses requires leaders to critically reflect on current and future practices to ensure assumptions are not made about students' expectations, learning experiences, or about the meaning of "high touch". The learning needs and expectations of a highly motivated, technically savvy, and self-directed student like Magda differ from those of a student who is less familiar or comfortable with technology, uncertain of academic and career goals or requires more in-person interaction.

The services that the local university offers Magda are driven by the personal data she entrusts the university with from her first online interaction with it. The reference to Magda and the advisor not knowing how exactly the data is being used is a significant concern. The university's institution-wide recommender system raises concerns of privacy, profiling, and exerting institutional or societal bias. While technology has made it easier to collect and store students' personal

data, it has also made it easier to misuse the information intentionally or accidentally.

The commitment to course content determining the length of the course is admirable but unrealistic. A university relies on fixed workflow processes and although systemic needs should not determine academic content or programming, there is no institution that can be all things to all people. Quality assurance may also be compromised if course content is frequently adjusted and if there are no standards for content or course duration. Typically, any organisational nightmare like that described in the vignette will negatively impact the student experience eventually and contribute to a negative work environment for staff and faculty.

The vignette offers hope for the future of higher education institutions in terms of students' equitable access to academic programming, seamless online administrative processes, current and flexible courses, and prioritised student learning experience. Points for further consideration include the need for a secure collection and storage of student data, holistic approach to administrative workflow processes, quality assurance measures, and an understanding of student engagement in the digital landscape.

Director, student services perspective: McLeod's response

Student services are generally described as services that support student academic achievement by reducing barriers to learning and providing opportunities for personal and professional growth. From the student services lens, there is a significant amount of "good" within the Magda future, where a student-centred approach promotes high-quality learning experiences that are supported through a combination of high-tech and high-touch services.

Technology is used to enable a high-touch personalised experience that integrates the best of digital and human services and support. There are several examples of this — the subscriber speaker series provides a low-risk opportunity for prospective students to engage with the university without requiring a significant commitment. The online appointment booking tool with data-gathering prompts allows prospective and current students to request the specific supports they need when they need them. Access to an academic advisor who can

competently respond to student interests, and confidently discuss how to align these interests with relevant learning outcomes within courses and programs, helps to secure an appropriate "fit" between a student and their learning pathway. A customisable dashboard that includes courses, schedules, services, and resources, and that can be used on mobile devices is a very good service. This tool may also be useful to those who are concerned with student wellbeing and student success (student services) as they offer timely and relevant information about a student's level of engagement within their post-secondary community.

However, digital dashboards are not the future; at many institutions they are a current reality and quickly becoming a student expectation. Institutions who are not considering this type of technology-enabled student service may find themselves left behind. Digital dashboards are also becoming popular among post-secondary administrators who gather data for planning purposes. Information collected on these sites regarding student choices and student behaviour can feed directly into strategic enrolment management cycles and inform the design of programs and services.

There are some challenges within the university model shared in the Magda story. For example, the variations in course offerings, and in course length and credit load, could present scheduling difficulties for students. Though some course selections may be completed through self-service registration software, many decisions will require the ongoing support of academic advisors with an in-depth understanding of program requirements and completion options. This may result in unexpected (or undesirable) breaks within a study period. This could also become a very expensive model for an institution to support.

It should also be noted that though technology can increase accessibility of education for many, it does not guarantee access for everyone. Education models that rely too heavily on technology may facilitate the unintended consequence of limiting access to specific populations, particularly those who do not have access to either the technology hardware or the network infrastructure to support access. Finally, Magda's university appears to rely heavily on the use of technology for the collection of personal data (i.e. creating profiles of learners who share similar characteristics). There can be risks associated with the over-collection of personal data which should be minded.

Deputy provost, academic operations perspective: Scott's response

Overall, the future described in Magda's story has many characteristics that I believe are good. Beyond things which today we know to be important for learning (peer to peer networking, being seen and heard within the institution, and cared for in terms of aims and ambitions), there are a few key characteristics that stood out. The use of prior learning assessment and review (PLAR) to validate existing knowledge that Magda brought with her reflects a mature understanding that learning can happen in many contexts and across a lifetime. Magda appears to be quite self-directed and to have her prior learning validated formally is an acknowledgement of that trait, which could reinforce a sense that the local university is the right university for her. Magda is also studying a topic where knowledge is constantly emergent, and validated recognition of knowledge that comes from outside the institution while studying does "good" in terms of supporting the larger concept that knowledge can come from many places in many forms. The varied structure of the programme, the various additional learning opportunities, and the use of a portal and journal to help her structure and make sense of her learning reflect both the field itself and a commitment to continuing to support Magda as a self-directed learner. The use of automated advising and recommendation tools at various points might have the potential to box Magda in, but since they are most often used in conjunction with a personal conversation there is a reasonable degree of balance, and they are probably useful in terms of prompting and structuring a conversation.

The story notes that scheduling and managing workloads for this program are a challenge, and in my role as a senior administrator, I would be concerned about this. Making a program financially viable whilst keeping it affordable could be a challenge. The structure of a more traditional programme can be inflexible, but it also allows for a lot of predictability. Supporting the design and development of courses could also be challenging since there is a high degree of variability. Learning design could be an open-ended exercise since the time required to teach the course could be emergent within the design. This could also be an

opportunity to shake up the design of courses in some interesting ways and there's likely some potential for reuse here over time.

The technology requirements of the program are also quite significant. A significant investment in technology ownership and maintenance is implied by this programme. That may not be a bad thing if it means that the university is in control of its own technological future. The amount of professional advising support that Magda receives is good, but I wonder again how sustainable it might be and still keep the programme tuition affordable.

Overall, there's a lot I like about this future, but I have worries about equity and inclusion. How will this program work for learners who are less self-directed? How can the cost of the programme be kept affordable in a way that means people from all walks of life can play a role in emergent industries? Without that, the diversity of perspective that Magda came to her local university to experience might not be possible.

Section 3: Synthesis

The narrative of Magda's speculative future was designed to prompt reflection. It is not an attempt to predict the future, imagine a utopian kind of institution, or instil hope or fear. Rather, its purpose is to say: What if this future, probable as it is with its connections to current systemic structures and processes, was our reality? What does it tell us about the present and about current choices we are making at our institutions? We undertook this effort to grapple with the question of "goodness" given a specific context and an imaginary scenario, rather than considering "goodness" in universal terms. The responses above highlight that any future we design for needs to be informed by a wide and diverse range of individuals, such that the tensions and opportunities of any future, and the tensions and opportunities of our current paths, are interrogated by those most heavily impacted. Below we explore some of the patterns that we see arising through the responses above and the questions that they raise for consideration. These are further discussed in the summary section.

Digital fluency

As the responses raised above, there is a tension, and perhaps an incongruence, between the technological infrastructure required and the personalised, caring approach aspired to in the speculative future that frames this chapter. Issues of data privacy, the need for a base level of digital fluency by the rights holders in the system, the requirement for digital accessibility (Kulkarni, 2019) and universal design for learning (CAST, n.d.), as well as the lack of integrated and seamless technology required to support the degree of system interconnectivity in this scenario are common threads through all responses. While the scenario describes a more responsive, easy-to-use student experience, the potential high barrier to entry imposed by the requirement for digital fluency, digital accessibility and universal design for learning brings equity and access questions to the forefront. This issue is aggravated by the fact that (a) the majority of K-12 and HE educators have little to no formal training in online and blended learning (Bates, 2021; Crichton & Childs, 2022; Johnson, 2021), and (b) definitions, policies, curricula, and outcomes surrounding K-12 digital literacy vary across educational systems (Hadziristic, 2017; McLean & Rowsell, 2020). The ripple effects of this impact the degree to which grade 12 (secondary school) graduates will have the degree of digital literacy and fluency required to participate in a future such as the one described above. Can higher education institutions provide the level of student support required, specifically among groups that traditionally struggle in the post-secondary context? How can institutions provide the supports and resources required to help faculty and staff build their capabilities to design, facilitate and support engaging learning experiences? What will count as quality, to whom, and who will "measure it" both internally and with the community partners that support the institution in offering quality education?

Agency, choice, and relationships

As highlighted in the responses above, digital platforms are not neutral, and indeed they are often biased. This reality has implications for the relevance of educational programming and exposure to meaningful learning opportunities selected for Magda, and thus cannot be

overlooked. While significant and far-reaching work is being done to further justice, equity, inclusion, and diversity in learning contexts now replete with digital platforms (Beetham et al., 2022; Costanza-Chock, 2020), it may not yet be enough to assume that an AI system like the one Magda is engaging with will be fair, just, and equitable and that most of the population is going to feel comfortable relinquishing their agency and decision making on career pathways to AI. Further, there is also an assumption in the narrative that the information and insights generated by the AI reflect an agreed upon and recognisable body of knowledge that is known and fixed. However, in our ill structured, complex world, the knowledge required is transdisciplinary in nature, dynamic in composition, rapid in its evolution, and indeed plural: we should make no assumptions that a particular educational technology will be able to reflect multiple forms of knowledge (e.g. Indigenous knowledges) and account for epistemic justice, unless we took conscious steps to account for those in the design of such systems or in the training data that were used to develop them. What type of role should technology play in this future? Where does individual ownership, decision making and self-efficacy surface in Magda's narrative when decisions and pathways are established based on algorithms which prioritise certain values and knowledges but not others? What additional pressures does it place on the role of student support to be aware of programming at this level of detail? What risks does that pose to the institution as students follow the career guidance and programming direction provided?

It has been well established that humans are social beings who learn, grow, and thrive by connecting, developing, and maintaining relationships over time with diverse individuals. Being in community with others is not only a nice thing to do; it is the only thing that will enable us to address the challenging issues of our time (Corman & Cox, 2021; Cox, 2022). Balancing an individualised and personalised approach while also fostering, nourishing, and giving back to the larger community is increasingly seen as needing to be inherent in all our systems, including HE (Goodchild, 2021). In Magda's scenario, there is potential exposure to and recognition of a variety of ways of knowing and being, due to the multiple social interactions with students, alumni, and professionals in the field. Yet there is an anomaly between the rich social community being facilitated and the fact that the technologies

that facilitate this community and network are created from a limited and biased vantage point. This disconnect underpins much of the discomfort expressed in the responses above. This is highlighted by our collective and contextual positionality as Canadian residents wrestling with the treatment of Indigenous peoples (Smith, 2012), the Truth and Reconciliation Commission calls to action (Truth & Reconciliation Commission of Canada, 2015), and the tragedies of residential schools. It caused us to raise questions such as: Where are the AI systems that are built on Indigenous ways of knowing and being, that make contextually relevant decisions, and that account for cultural protocols? In adopting digital systems that foster ease of use and connection, what inherent beliefs and values are being passed along as "good" by the institution based on the inherent bias in the code? What supports are needed for all rights holders as they navigate a HE system in transition?

Responsiveness

Increased frequency of large-scale climate events, pandemics, and geo-political instabilities are part of our shared global context. While Magda's story illustrates one approach to improving the student experience, this must be balanced with the needs of an ill-structured, uncertain, and complex world necessitating a transdisciplinary approach to address global problems. This requires that we consider the ways in which humans and machines can cooperate to valued ends. This is not as much a technological issue as a human limitation when it comes to thinking about diversity and design, what Staley (2019) calls a "poverty of imagination of what that innovation might be". Bayne et al. (2020) offer the following provocation:

> [W]e argue that if we do not feel ready at this point to actively welcome our robot colleagues, we should at least be prepared to open the door to them. To the extent that aspects of automation may prove to be genuinely beneficial to teachers, it seems important to remain open to the idea that it may allow us to explore new kinds of critical pedagogies, new creative possibilities, and new kinds of usefulness to our students. The key point we wish to make here is that for this to be the case, research and development of automation technologies in teaching should not be developed for teachers but by teachers. Teachers, the act of teaching, and the learning and well-being of students, not efficiency imperatives or fantasies of frictionless scaling up of education, should be placed at

the center of the way we think about automation. (pp. 111–12; Kindle
loc 1495)

How can we build technologies that prompt, provoke, and otherwise
help to build resilience and capacity? How can HE engage the student in
co-creation and the development of iterative, responsive programming
and institutions?

Conclusion

Those who choose to begin a higher education learning journey have
given themselves the opportunity to learn from and with others who
bring varied, diverse perspectives. Using a speculative future scenario
allowed us to enter on our own learning journey and make visible some
possibilities and gaps in the current HE system — a system in transition.
As Harris (2014) states:

> It's in moments of mass change that our most constant qualities appear...
> It's in moments of translation that we learn what is indelible about us.
> We see what cannot pass forward into the new... but we also see what
> things [need to] remain. (p. 209)

Consistent with the values and beliefs captured in the Royal Roads
University Learning, Teaching, and Research model, and evidenced in
the responses to the Magda speculative future narrative, what counts as
"good" in HE goes beyond preparing students to be labour market ready
and beyond preparing the learning environment for them. It requires
creating teaching and learning environments *with students* to address
the needs and challenges that they are facing in the present and will
face in the future. It requires critical awareness. It requires intentionality
and an ongoing commitment to justice. And it requires a sort of radical
acceptance that the status quo is neither desirable nor acceptable, so that
we can turn our gaze to creating futures that are brighter.

Speculative future invites us to reflect on what would be left behind
in creating a system that would support the experience of Magda or a
version of it. In exploring its possibilities, it asks us to place a value on
what would be lost and what would be gained as we move forward.
This is not a decision that can be made in isolation or by a select few.
It necessitates dialogue and discussion with all rights holders, and the

building and maintaining of a multiplicity of relationships within and beyond the HE sector. It requires a connected, engaged, and committed community, as well as the courage to look beyond our current circumstances, and to acknowledge that there is nothing that is "normal" about current systems. They too were once speculative explorations.

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