

Designing Empowered Curriculum: Thinking Preferences, 3D-Briefing and the Adult Learner

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Abstract

At the 16th ICIE conference in Paris France, Giovanna Corazza encouraged participants to avoid early closure in their research: “Keep going” he enticed, “ideas can transcend across time, geography and cultures”. This paper discusses an emancipatory, emergent research project at Mohawk College, Ontario, Canada that explored leadership skills, learning behaviour and cognitive preferences in higher education students. By avoiding early closure, this project morphed into a rich enquiry into enhancing 21st Century employability skills, and differentiating post-secondary curriculum based on cognitive preference profiles in learners. Overall, the findings indicated how a common language based on cognitive preferences and creative problem solving as well as the application of an accessible debriefing framework might navigate the paradox of diversity in a global, ever-changing educational ecosystem and improve creative-critical thinking, communication and collaboration.

Keywords: Paradox of diversity; 21st century skills; communication; collaboration; differentiated instruction; thinking preferences; creative problem solving.

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PART ONE

Introduction

The changing world of work

The educational landscape in North America has changed. Post-secondary institutions are seeing increased numbers of international, indigenous, first-generation, female, and mature or second career students. There are also more learners with emotional, intellectual and psychological wellness issues than in previous generations (CASA, 2018). The picture of who these students are, what motivates them, and how they learn best, is incomplete, mainly because educators often make key curricular decisions solely on visual observations which, while reflective of students’ superficial attributes, leave significant learner distinctions hidden.

Likewise, the employment landscape has changed; cultural awareness has become part of doing business as globalization diversifies the world and industry. In addition, given the exponential growth in technological innovations, new employees need transferable, employability skills as well as content knowledge. However, various reports indicate a serious mismatch between the skills required by industry and the skills graduates have (IBM 2010, 2012). Specifically, the 21st Century industrial ecosystem demands creative-critical thinkers and problem solvers, good communicators and effective collaborators (WEF, 2016, 2016b; OECD 2011). Other researchers point not to a skills gap, but rather an awareness gap in learners and an inability to convey these transferable skills to employers (Harrison, 2017; Markovitz, 2017). Ultimately, whether an actual skills gap, awareness gap, or a communication gap, the consensus is that learners are not demonstrating the transferable skills an evolving industrial context requires.

The consequence of change to education

In order to prepare learners for the current milieu, empowered and effective educational systems are fundamental to the encouragement and generation of student engagement, collaboration and self-awareness (OECD, 2014). These features contribute to learners having autonomy over their learning, understanding the relevance of their learning to their future careers, and a belief in their ability to build competencies and skills even when tasks are challenging (Drapeau, 2014; Freeman, Anderman & Jensen, 2007; Gregory & Kaufeldt, 2015; Yuhas, 2016; Dweck, 2016; Pink, 2009). The value of establishing a culture of self-efficacy through project-based learning, collaborative projects and group interactions prepares learners for employment while making the curriculum relevant through ‘real world’ competency-development and skills practice.

Familiarity and routine may be the norm of K-12 education; higher education needs to prepare learners for a real-world, employment context that no one can predict with certainty. Adamson’s identification of a VUCA (volatile, uncertain, complex, ambiguous) ecosystem is marked in education by a minimizing of what was once common and familiar, and a maximizing of diversity and the previously unknown/unseen. Thus, innovative educational practices provide a rehearsal space for the 21st Century learner who needs content knowledge along with strong transferable/soft skills gained through varied experiences, values, preferences, abilities, motivations, goals, and multiple social, political, economic, religious, and cultural encounters. Within this diverse ecosystem, there exists a high potential for creativity, innovation and personal transformation if individuals are willing to see things differently, question accepted norms, and unlearn in order to relearn diverse ways of thinking, doing and being.

According to Yorks and Kasl (2002), however, there also exists an equally high potential for resistance, tension and conflict due to the same reasons creating the high potential for creativity and innovation. The more diverse the learners, the less likely it is that they will be able to create an empathetic field that enables them to understand the other’s point of view, thus blocking the capacity to lead each other toward growth and transformation (Yorks & Kasl, 2002 p. 186).

Post-secondary educators can easily identify markers of the paradox at the administrative level; the impact at the post-secondary learner level may not be as easily recognized or remedied, especially since learner interactions are not faculty monitored and mediated as they are in the K-12 system. The question becomes: how might the paradox of diversity be navigated within the post-secondary ecosystem to minimize resistance and conflict and maximize innovation and creativity?

PART TWO

The 2016/2017 Study

Source of qualitative data

Post-secondary students at Mohawk College in Ontario Canada are required to successfully complete a first year Communications course. At Mohawk College, this course includes a collaborative research project involving an individual written report and group presentation. Consistently, the negative side of the diversity paradox was displayed in written reflections regarding the collaborative exercise. These reflections encompassed unsubstantiated claims against other students and showed minimal personal efficacy, responsibility and learning from the collaborative experience. Finding a way for learners to see the potential in all situations and create a safe forum and framework for important, sensitive conversations became paramount. Thus, an ad hoc solution to a repetitive classroom problem emerged into an action research project spanning multiple semesters, multiple programs, with multiple applications.

To clarify the initiating situation, Student Reflection One is a “polite” example of the work produced by learners prior to the 2016-2018 emergent research project. Learners were instructed to use the 3D-Briefing model of “what, so what, now what” in order to describe the collaborative circumstances, analyze its significance and relevance to their learning, and plan modifications for future actions.

Learner reflection one

One challenge our group faced was initially getting started. We had a very slow start which was in part due to *members not taking time to meet* to discuss the overall project. Another issue we faced was *one individual not being present* for group meetings, which *we felt was unfair that this person did not participate equally with the rest of us*. In the future, it would be best to set-up group expectations early on in project collaboration so that all group members are aware of *their responsibilities* and what the *repercussions are if they fail to do so* (my italics, 2013).

This sample reflects the responses commonly made by learners. The next two reflections were written after learners were provided with information regarding cognitive preferences in problem solving, explained further in this paper, and the 3D-Briefing framework. The differences between reflection one and reflections two and three are evident.

Learner reflection two

In health care, collaborative approaches and being able to work with others are essential skills. For the workplace . . . it is useful to have a balanced team where people from all different types of thinking preferences can come together and apply their strengths. (2016).

Learner reflection three

It was evident that everyone completed the project in different methods and approaches. In the future, I feel like understanding these preferences will help to meet goals, particularly in groups, by understanding that different people have different benchmarks for achieving goals (2017).

The 2016 and 2017 examples suggest a more positive mindset when the 3D-Briefing framework is combined with a common language regarding how people differ in their thinking processes.

Analysing the data

Analysing these three reflections illustrates how students manifest the paradox of diversity in the learning environment. In Learner Reflection One, written by a student with a 98% average, the narrative reveals a high potential for frustration and conflict in collaborative work. The passage reveals:

- a. A rift between group members indicating an “us-them” mentality evidenced by 5 first-person plural pronouns and 4 third-person singular and plural references.
- b. Punitive language and a singular, disciplinary response to handling anticipated problems with future colleagues.
- c. An accusatory, unempathetic tone toward others signifying the writer’s disempowerment, lack of self-efficacy, self-actualization, and learning as success seemed beyond the individual’s control.

This reflection typifies the writing done prior to the research project, with other writers being harsher, and even more accusatory of their peers.

In Learner Reflections Two and Three, written by average students, the narratives show a high potential for creativity, innovation and transformation. The passages reveal:

- a. Self-awareness, self-efficacy, empathy and transformative growth stemming from the diversity within the collaborative experience;
- b. Avoidance of punitive language;
- c. Absence of oppositional-pronoun indicators suggesting an “us-them” mentality;
- d. Learning autonomy, career relevance, and an awareness of potential competency-development; and,
- e. Evidence of autonomous, self-regulated, action-steps through use of singular first person pronouns (first reflection is devoid of such an awareness).

The reflections combining the 3D-Briefing framework with thinking preference language indicate how educational activities can go beyond intended learning outcomes and incorporate socially-just values, beliefs and aims the 21st Century ecosystem requires and an equitable world demands. The three reflections emphasize how language influences and impacts learner attitudes, views and future actions. It also shows how empathetic awareness, leading to equitable collaboration, might hinge on the acquisition of an appropriate, accurate, value-neutral, common language as provided by thinking preference theory, and the application of an accessible conceptual framework as provided by the 3D-Briefing model.

Thus, the first phase in the emergent research project focused on the degree to which thinking preferences' common language might:

- a. Minimize the paradox of diversity's potential for resistance, tension and conflict illustrated in the first reflection; and,
- b. Maximize the paradox of diversity's potential for growth, creativity and transformation illustrated in the second and third reflections.

PART THREE

Next Steps: 2016/2018

According to Eisner, educators design environments which learners co-create. He writes: "The student always mediates, and hence modifies, what will be received or . . . construed from the situations" (2002, p 47). This is also true of emergent research as participant feedback spreads challenge questions into multiple directions. This project's iterations consistently employed a mixed methods, transformative-emancipatory approach where participants were co-creators "defining the frame through which we construe the world" (Eisner, 2002, p. 215). The identification of an initial educational challenge began with the despondency epitomized in the 2013 Communications class and lead to the more formal research projects between 2016-2018.

The first research study, supported by the Vice President Academics office in 2016, involved Mohawk College's co-curricular Leadership Academy and explored student perceptions of leadership skills, learning behaviour and thinking preferences. Student perceptions of leadership were compared to research regarding industry perceptions (Puccio & Acar, 2015). It was here that the value of thinking preference language first took shape and lead to the second iteration in 2017 involving 117 first-year students across four schools - Applied Health, Engineering and Skilled Trades, Community, Justice and Liberal Studies, Business, Media and Entertainment. The third iteration took place in Winter 2018, involving 120, final semester Electrical Technician students participating in a high-stakes capstone collaborative project. Another iteration, which is beyond the scope of this paper, took place in the Fall of 2018 and Winter 2019.

Creative problem solving and thinking preferences

Learning outcomes for the Communications course is to enhance learners' 21st Century skills: creative-critical thinking, communication, and collaboration. As already mentioned collaboration posed a serious issue to learner efficacy and anti-oppressive attitudes. Likewise, it is assumed that learners know how to solve problems, how to collaborate with others and how to generate a positive equitable learning environment. The challenges learners wrote and spoke about prior to the research indicated learners needed tools to help them collaborate and problem solve. Thus, the 3D-Briefing model and a variation of the Parnes-Osborn Creative Problem-Solving (CPS) model became part of the curriculum. Learners identified the universal process everyone must go through to effectively solve a problem: clarifying the challenge through research and data collection; brainstorming lots of ideas to solve the challenge; analyzing and advancing a possible solution by developing its components; implementing the idea in a real-world application. While all stages are necessary when problem solving, research into the correlation between individual behaviour and CPS indicates that individuals do not engage with each stage equally (Puccio, Miller, Thurber, Schoen, 2014). Diversity in problem solving within a team can result in the frustrations evidenced in the 2013 reflection. The 3D-Briefing model brought learner awareness and interpretation of these stages to the forefront.

The Foursight Thinking Preferences Assessment tool measured and generated a profile highlighting learners' cognitive tendencies when problem-solving. Measuring preference rather than ability, the profile provides a developmental blueprint to thinking better by enhancing inter- and intra-awareness, communication and collaboration. As a result, the research challenge now asked:

- a. How learner awareness of cognitive thinking preferences might impact creative-critical problem solving individually and in groups; and,
- b. How an awareness of person and process, expressed through the language of CPS and Thinking Preferences, might impact the collaborative learning experience.

2016/2018 Research method and environment

Quantitative data included a pre-assessment online survey developed by the author and a Foursight LLC's Thinking Preferences Online Assessment. All participants were involved in an interactive, arts-based workshop that used a constructivist approach to deliver the Parnes-Osborn CPS model and Foursight Thinking Preferences terminology and content. The workshop emphasized that effective problem solving involves individuals using divergent and convergent thinking through each phase of the problem solving cycle: clarifying, ideating, developing and implementing. The workshop illustrated the value of transcending familiar predilections and expanding abilities in areas we find challenging and thus avoid. Reflecting Vygotsky's "zone of proximal development" (1978), this realization is key to individual learning and growth and has an impact on interpersonal interactions, especially with those who problem solve in ways different from our own. The workshop highlighted five key elements regarding cognitive function and navigating the diversity paradox:

1. We are diverse in the ways we approach challenges and problems;
2. Diversity may cause resistance and conflict;
3. Resistance often originates from incomplete information;
4. Incomplete information may lead to misinterpretations, assumptions and stereotypes; and,
5. Misinterpretations may cause communication and collaboration failures.

Making learners aware of their blind spots regarding diversity, the research highlighted the importance of this awareness to clear communication and equitable collaboration.

Results and thoughts arising

In the post-secondary classroom, an internalization of the simple 3D-Briefing framework, combined with thinking preference awareness and language, seemed to consistently help learners create more empathetic and effective learning collaborations and interactions. Learner complaints about their peers disappeared. Reflective enquires showed more self-efficacy and empathy. Providing learners with a vocabulary describing characteristics and actions within the CPS process, thinking preferences demystified collaborative work by reframing personal differences as process differences assuaged through a deliberate minimizing of familiar tools and practices. According to one learner, "thinking profiles really teaches a group of people how to work together and achieve success. These lessons can be used in and outside the classroom" (2018). Understanding thinking preferences helped learners describe experiences appropriately, accurately and reliably. For example:

Thinking preferences really foretold the way our group functioned. ... Our group was made up of two developers, which really brought out structure, organization and planning. ... The two ideators were the ones who took on the creative ideas. ... For my next collaborative assignment, I will try to learn a little more from the way my other group members prefer to thinking by expanding my ideas from a different angle (2017).

Reflections were now framed in a professional, mutually understood discourse describing the process with which they engaged rather than the personality types they encountered.

Another important employability and leadership skill, the ability to be empathetic, is displayed in the following learner reflection:

"Learning about the types of people you are working with. . . can be a great asset in strengthening the team and ensuring that you are not butting heads. By knowing your team, you can maximize everyone's strengths to create equilibrium" (2017).

The application of a shared language to describe the collaborative problem-solving process also addresses the paradox of diversity as displayed in this entry:

Knowing the type of problem solver I am will allow me to identify what role I can partake in the group. This information has also allowed me to identify the areas I need to work on so I can improve on my interactions with other types of problem solvers in the future. (2017).

Recurring reflections like these showed a high potential for creativity, innovation, self-efficacy, as well as equity and empathy as they minimized the potential for resistance and conflict generated by personal misinterpretations, assumptions and stereotypes.

Differentiated instruction and empowered curriculum

A learner-centric perspective is fundamental to democratic, anti-oppressive curriculum design. Educators need to think about the plural positionalities of today's diverse learners and minimize their reliance on the familiar, or the one size fits all, approach to education. According to Earl, discovering who our students are as learners and as people is key to differentiated instruction (2003). But some consider differentiated instruction, especially at the post-secondary level an impossibility, even a hoax (Delisle, 2015). This may be an accurate opinion if differentiation is only seen as an instructor-driven activity.

In the post-secondary classroom, learner information is limited, superficial and misleading. Consciously, or unconsciously, educators design curricula based on assumptions, stereotypes, their own thinking preferences, and obsolete experiences. Reliable, valid evidence is lacking; thus, "precisely because any single view [in teaching] is partial, it is important, ... to secure other views that provide other pictures" (Eisner, 2002, p 11). Thinking preferences seems to provide educators with that other picture. It gives educators a language for mitigating the major pedagogical challenge of generating learner engagement and motivation. Given that thinking preference discourse, CPS and the 3D-Briefing framework positively affected learners, the research shifted, yet again, to explore how this combination of concepts might impact curriculum development and differentiation at the post-secondary level.

True to the notion of emergent research, parallel challenge questions surfaced:

- a. How might creative, caring educators navigate the paradox of diversity and decrease resistance and conflict while increasing creativity and innovation?
- b. How do educators minimize their remaining in the familiar and maximize their exploration of the diverse in order to differentiate the curriculum?
- c. How might the curriculum be differentiated at the post-secondary level in a way that is evidence-based, reliable and bias free?
- d. How might cohort profiles assist educators in moving outside their own preferences while solving curricula issues?

In 2017 and 2018, the Foursight Group Profile was used to redesign the mandatory Communications course delivered to Pre-Health students, (this was later expanded to the Electrical Technician program). Problems with learner motivation, engagement and success were reframed as curriculum design issues rather than learner issues. For example, poorly written, late and missing work is often viewed by faculty as a learner's time-management, organizational or apathy issue. Thinking preferences can alter this view by shifting from the person to the process as it analyzes learners' procedures in completing tasks and where they might be struggling. For example, a learner with an implementing preference might rush through an assignment in order to get it done without taking the time to proof for silly errors; a learner with a preference for developing might submit an assignment in late because they are obsessing over minor details and would rather lose marks than not deliver a perfect assignment. Rather than always defaulting to blaming the learner, another picture can be drawn where process deficiencies heighten curricular disconnects between how students learn and how content is delivered and assessed. For example, Illustration One displays a cohort of pre-health students.

Illustration One: Cohort Profile 2017

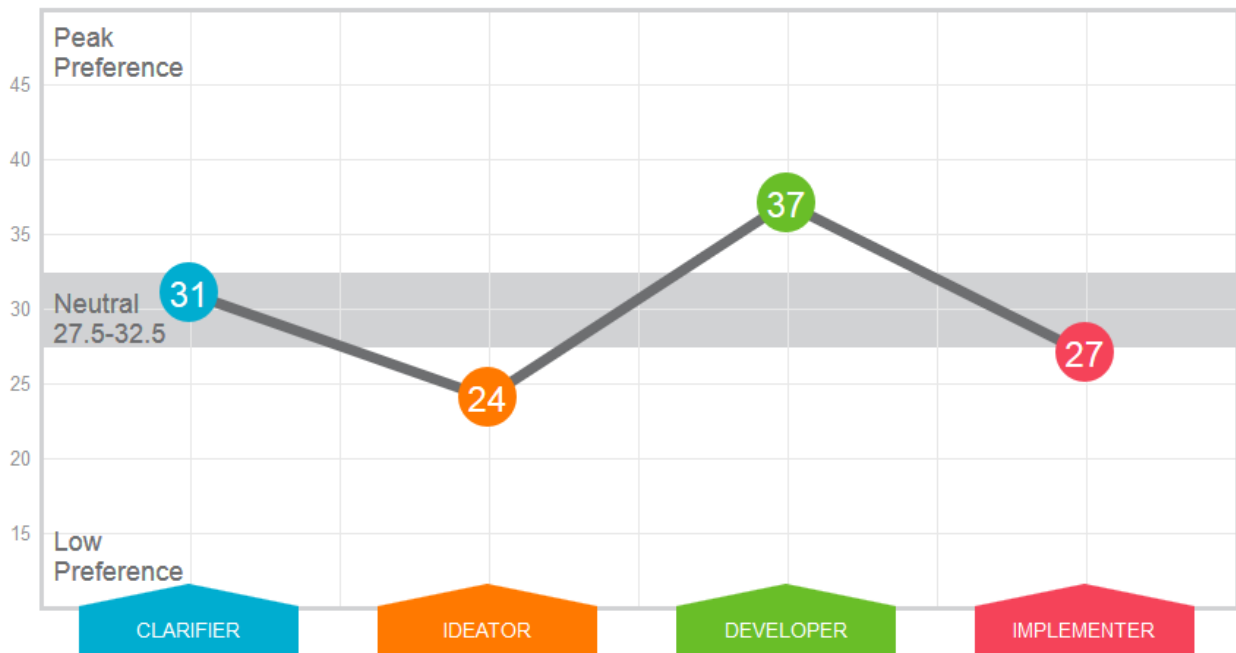


This profile indicated ways the curriculum could be differentiated for the class; since most learners were clarifiers who prefer facts, research and data, the course began with health-related, non-fiction and then progressed toward imaginative works. Assessments offered detailed choices (preferred by clarifiers and developers) rather than abstract, imaginative open-ended questions (preferred by ideators). Since there was also a high number of implementers, known for getting the job done, open deadlines existed for assignments. Rubrics were reviewed in class to satisfy the clarifiers and ensure ideators didn't overlook criteria. The profile also indicated that divergent thinking was not an already acquired skill, so brainstorming was deliberately taught and practiced through creativity tools used as warm-ups. Articulation of opinions, and spontaneous creative-critical thinking through speaking and 30 second presentations were integrated into classes through low-stakes role-playing, active learning activities like Think, Pair, Share, and collaborative group challenges. The "What, so what, now what" 3D-Briefing framework reinforced each lesson while active learning activities linked literature's impact to health and wellness. Overall, these changes to content, delivery, and assessment improved the scaffolding of learning and moved learners from the familiar to the diverse, while building confidence, self-efficacy, empathy and an authentic voice appreciating multiple perspective and world views. Meanwhile, individual learner profiles, as seen below, facilitated differentiated coaching by the instructor and self-regulated differentiation by the learner.

Illustration two: Individual thinking preference profile:

It is important to note that thinking preferences is not about ability. Everyone uses the actions of clarifying, ideating, developing and implementing when problem solving, just not in the same way and, often, our preference for particular actions will *get* in the way. Thus, learners were given tools to strengthen each problem solving stage, which were helpful for stages they were short-shifting due to their preferences. More importantly, their awareness of thinking preferences, combined with their 3D-Briefing thinking framework enabled learners to self-differentiate and maximize their growth.

Overall, as evidenced in their interactions and reflections, person/process awareness altered their attitudes and behaviours toward each other and their own learning potential.



In summary: thinking preferences altered what was taught, how it was taught and why it was taught. Class attendance was high, participation enthusiastic, and classes creatively chaotic with positive, productive engagement. No late essays, extension requests, or make-up assignments were requested. Only two out of 50 students failed to hand in an essay and they took full responsibility for “not taking advantage of the flexibility and opportunities” (learner reflection, 2017) offered by the course. Diversity within groups was no longer interpreted as personal deficits, but as growth opportunities empowering learners with a value-neutral, shared language based on adjectives describing stages in the creative problem solving process.

PART FOUR

Conclusion

Between 2016 and 2018, the research challenge shifted from an exploration of student perceptions of leadership skills to a comparative analysis regarding how learner awareness and language impacts engagement, motivation, self-efficacy and empathy within education’s diverse ecosystem. By embracing an emergent research method, learners and researcher extended the challenge questions in directions relevant to scientifically-informed teaching and learning decisions. Empowered, personalized, differentiated education should, as quoted by Tomlinson and Moon (2013), “develop awareness [in students] of which approaches to learning work best for them under which circumstances, and to guide [learners] to know when to change approaches for better learning outcomes” (p11). Fulfilling the OECD mandate to maximize learning, educators need to engage and motivate learners; they need to discover who their learners are, what motivates them, what competencies they have and what they need in order to maximize their learning. Supporting these goals is an awareness of diversity, not as a personal deficit, but as a cognitive preference capable of positive growth and transformation.

Empowered learning is inclusive, diverse, personalized and accessible. According to Carol Ann Tomlinson (2017), it links “students with meaningful learning, enabling collaboration that extends human understanding, and preparing students for a world that will demand of them both reason and wisdom” (p. 15). This research project shows thinking preferences can be an evidence-based tool for differentiating a curriculum which responds to the current educational ecosystem by minimizing the familiar and maximizing the diverse. Providing a shared, value-neutral language that

appropriately, accurately and reliably articulates the learning experience, and by combining it with the 3D-Briefing reflective framework, *all* learners gain vital self and collective awareness. This awareness enhances communication skills, increases positive collaborations while decreasing diversity's high potential for resistance, stress and conflict. This decrease in conflict generates an increase in respect for and understanding of diversity due to a greater, empathetic awareness that avoids early closure due to superficial misinterpretations and dangerous assumptions. Overall, awareness through the acquisition and application of a shared language is capable of increasing the new educational ecosystem's high potential for creative, innovative, equitable and empathetic learning spaces. These spaces can be measured through self-assessment, peer assessment and instructor evaluation because they are based on clear, common descriptors communally understood. Industry and education will no longer have to guess if graduates have the 21st Century skills needed to face the challenges of tomorrow; an unambiguous conversation is all it would take.

"We are not only a team, now we are a family" (female, International, Electrical technician student, 2018).

"Not only did we work together, but we became friends and that's something to carry with me for the rest of my life" (male, International, Electrical Technician student, 2018).

"I feel like a changed man, excited for what the future holds for me" (male, Electrical Technician student, 2018).

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